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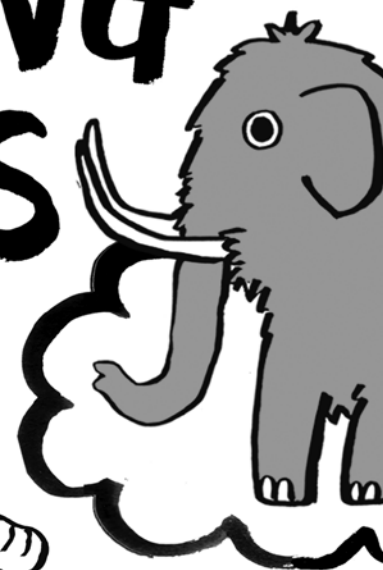
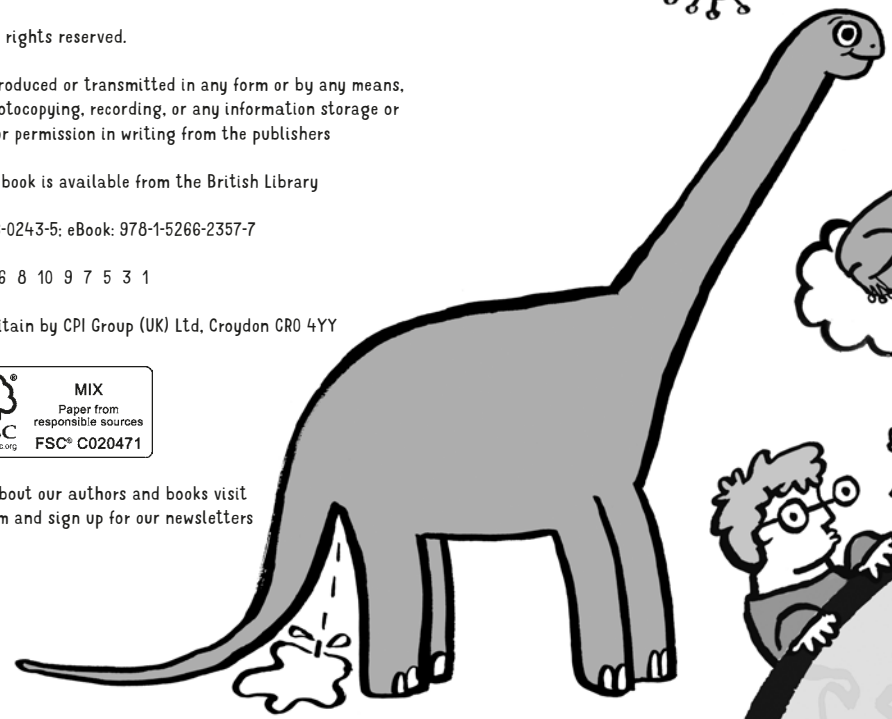
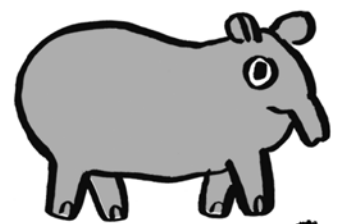
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OUR WORLD is AMAZING!

Hi, I'm Dr Emily. You might **remember** me from my **Brain-fizzing Facts** book. In which case, **welcome back!** Or we might be meeting for the **first time** – in which case, **hello!**

Before we **start**, there's one **important** thing you need to **know** about me. I ask a **LOT** of **questions**. And I love **figuring stuff out** and **finding things out about** the **world**. My **favourite** feeling is when things **make sense**.

That's what I love most about **science**.


That **EVERYTHING** makes sense and that everything happens for a **reason**.



In this book I'll be **sharing** with you some of my **favourite things** about **our planet**, and explaining **WHY** they happen. But first I'll be asking **YOU questions** and asking you to try and **figure out** the answers for yourself. So give them a go. I'll always give you **four options** to choose from as the answer. If you don't **know** the right answer straight away, don't worry – **mistakes** make your **brain spark** and that's how you **learn**. Just start by **figuring out** if there are any answers that you know **CAN'T** be true, and **why**. And then see if you can think of a **sensible** reason why one of the others **MIGHT BE**. And you may well be **right**.

And remember, in science there's really no such thing as a **stupid question**. Or indeed a **wrong answer**.

Truly. Wrong answers are just the **way** that we get to the **right one**.



Some of the facts in this book are totally **random**. They're **weird** things about the world that I've **discovered** or **read about** in my time as a **scientist**. Some might make you **laugh**. Some might **shock** you. And some are downright **gross**.

But **some** of them are about the things that **humans** have been doing to our **planet**, and about how our planet is **changing**. They are about how the Earth is **heating up** and how our planet's **land** and **natural resources** are being used up.

And about how lots of **animals, plants** and **humans** are **suffering** as a result.

These parts of the book might make you a bit **sad**. Or **scared**. Or **anxious**. Or **angry**. But don't worry, I'll be right there **with you** and I'll be giving you lots of **ideas** as we go along as to **small things** that you and your family can do to **help**. Plus, I'll be sharing lots of **inspiring stories** about **exciting things** that are going on in the world today that will give you **hope** and show you that the world can be a **better place**. If we all **work together** to make it so.

So, are you **ready** for the first question? Great. Then let's get **started**.

DR EMILY XX



WHICH WAY IS
A DOG MORE
LIKELY TO FACE
WHILE WEEING?

A
TOWARDS ITS
OWNER

B
TOWARDS ITS
KENNEL

C
TOWARDS
ANOTHER DOG

D
TOWARDS THE
NORTH OR
SOUTH POLE



It's a sunny Sunday morning and you stumble downstairs to find your favourite **canine companion** scratching away at the back door. You open it up ... and she **dashes** out into the back garden, chases a **squirrel** up a tree, and then **squats** down and does a **wee** ... right in the middle of the lawn. Pretty standard doggy behaviour.



A DOG IN CANADA
ONCE ESCAPED FROM
HIS BACK GARDEN
AFTER BEING LET OUT
TO WEE AND ENDED UP
ACCIDENTALLY JOINING A
GROUP OF RUNNERS WHO
WERE DOING A HALF
MARATHON!

But have you ever stopped to notice
which way your furry friend usually
faces when she is, err, **relieving herself?**

I don't suppose you have. I mean, why on
Earth would you?

Well, this is exactly what a **strange** team of scientists
in Germany and the Czech Republic did. For **TWO YEARS**.
That's quite a **commitment**.

The team monitored a group of
70 dogs from **37 different**
breeds. Every time one went for
a **wee** or a **poo** (the dogs, not
the scientists) they made a note as
to which way the dog was standing.
Well, probably not **EVERY** time.
I'm sure they didn't get up in the
night to **wee-watch**. But between
them, the scientists recorded a
grand total of **1,893 poos**
and **5,582 wees**.

When the scientists
compared notes, they
noticed something rather
strange. It seemed
that the dogs were far more
likely to do their business while
facing either directly **north**
or **south**. Weird or what?

THE ANSWER is 0
A DOG IS MORE LIKELY
TO FACE TOWARDS THE
NORTH OR SOUTH POLE
WHILE WEEING.



But why do dogs do this? Sounds **barking mad** to me.

Well, the truth is that no one really knows. But it would appear that dogs are pretty good at **sensing the Earth's magnetic field**. This is an **invisible force field** that radiates out from the Earth's **core** and **surrounds** the planet, giving rise to the **North and South Poles**. It's as if the Earth has one

ginormous **bar magnet** running right through the middle of it.

Sailors use the Earth's magnetic field to work out **which way** they are going when they are **lost at sea**. You see, the **needle of a compass** will always **point** towards the **North Pole**. And by working out which way is **north**, and roughly where they are on a **map**, sailors can figure out which way to sail to get **home**.



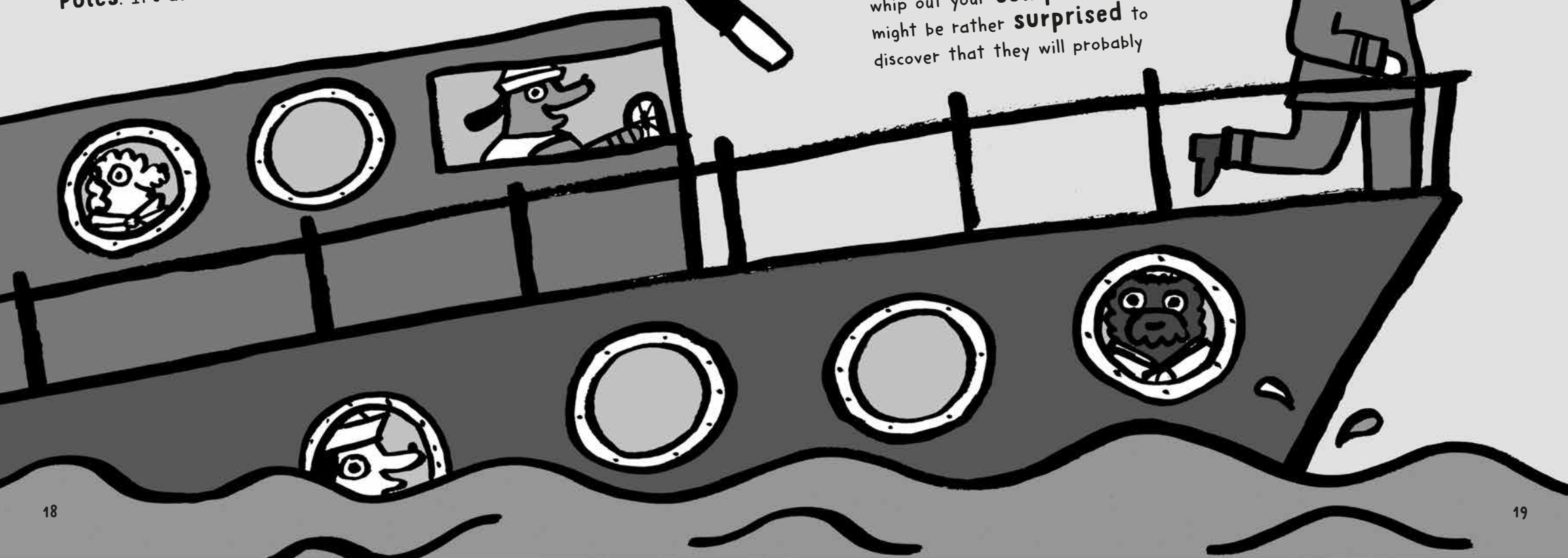
It is thought that our **doggy friends** might have their own sort of **internal compass** that enables them to **sense** the Earth's magnetic field. How **cool** is that?

Dogs are not the **only** animals who are able to do this. Next time you come across **cows** grazing in a field, **deer** standing in a line or **ducks** landing on a lake, whip out your **compass** ... you might be rather **surprised** to discover that they will probably

be facing **directly** towards the **north** or **south**.



So, next time you're out for a walk and you **lose your way**, just wait for your doggy companion to **cock his leg**, and then follow his **nose**.



Speaking of **cocked legs**, did you know that it is usually only **male dogs** that raise their back leg in the air when they wee? They do this funny manoeuvre to **mark their territory**. The **higher** they manage to spray their yellow **calling-card** onto the nearest **tree** or **lamp-post**, the more likely it is that the **stinky scent** will be caught by the **wind** and travel **further away**, alerting nearby **canine competitors** to their presence.

Some animal experts think that dogs try to raise their leg as **high** as possible so they can **pretend** to the next sniffers who happen to pass by that they are **bigger** and **more intimidating** than they actually are. This might explain why you sometimes see a tiny little **sausage dog** doing a kind of **doggy handstand**, spraying his wee **all the way** up a lamp-post.

I MAY BE SMALL BUT
I SURE CAN WEE!

Some **wild dogs** in Africa have taken this a step further. To appear as **big** as they can be, they try to **run up tree trunks WHILE** they are weeing! Maybe they hope that the next doggy visitor will think that there's a **ginormous tree-weeing beast** in the area and run for the hills in **terror**.

I wonder **how long** it would take this huge beast to do a wee? Ages, probably. Certainly **far longer** than it would take you or me to wee, right? Not **necessarily** ...

