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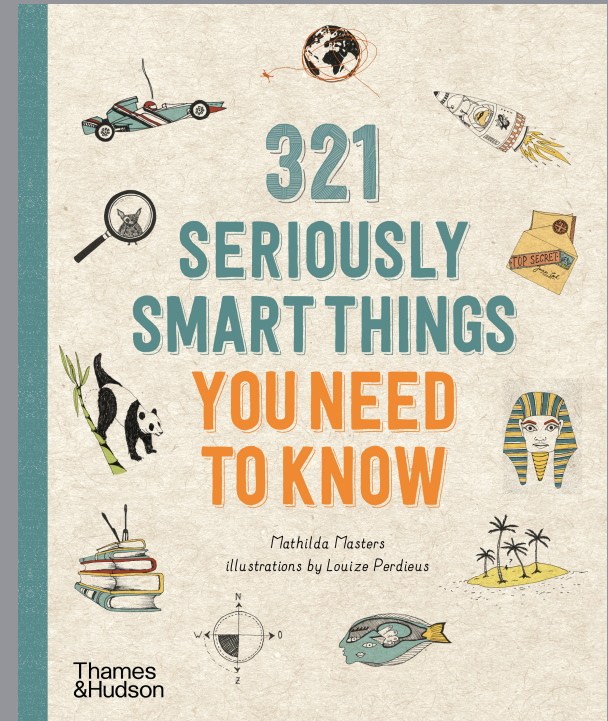


# 321 Seriously Smart Things You Need To Know

Mathilda Masters, Illustrated by Louize Perdieus

321 surprising facts about flora and fauna, language, famous people, our planet earth and much more

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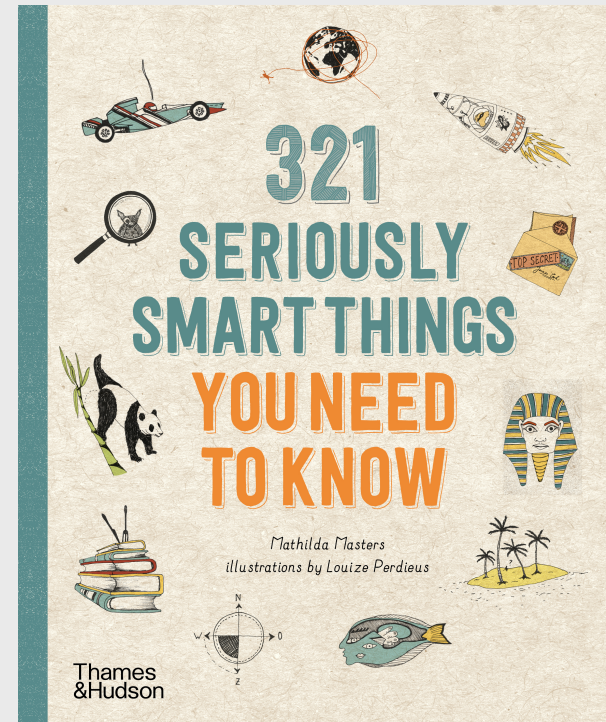


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Book

# Key Sales Points

- The 'Seriously Smart' series has already sold nearly 10,000 in Europe and parts of Asia.
- Easily manageable chunks of information and fun facts are accompanied by witty illustrations.



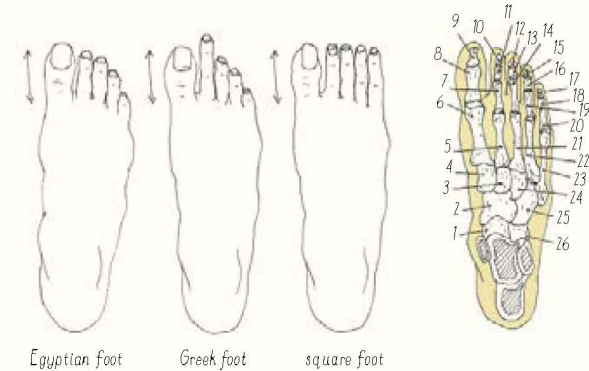
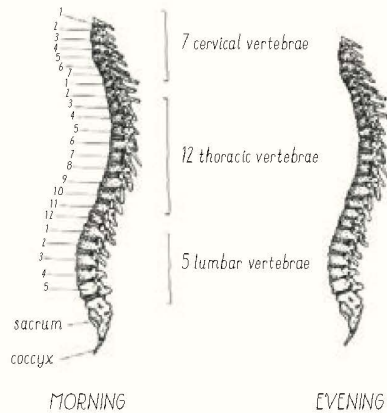
## 49 PEOPLE ARE TALLER IN THE MORNINGS THAN THE EVENINGS

Believe it or not, you're about a centimetre taller in the morning when you get up than when you go to bed at night. Why is that?

- Your **spine** or backbone is made up of circular bones called **vertebrae**: there are seven in your neck (the cervical vertebrae), twelve in your upper back (thoracic vertebrae) and five in your lower back (lumbar vertebrae). The vertebrae are cushioned and separated from each other by flexible discs.
- The discs act like shock absorbers, protecting the vertebrae from strong impacts and making sure the bones don't scrape against each other.
- In the mornings, the discs are thick and full of water. But as soon as you stand up, gravity sets in and the discs become compressed. Some of the water is squeezed out so they get thinner, making you a tiny bit shorter. Over the course of the day, the discs can lose up to one-tenth of their thickness.
- When you lie down to sleep at night, the discs refill themselves with fluids and water, plumping up once more. This is just one way in which your body repairs itself during sleep, so you can be fighting fit again the next day!

### BONUS FACT

This is why elderly people get shorter as they get older. The discs between the vertebrae start to dry out and don't recover as quickly. Senior citizens can shrink by up to 4–6 centimetres!



## 50 ONE-QUARTER OF YOUR BONES ARE IN YOUR FEET

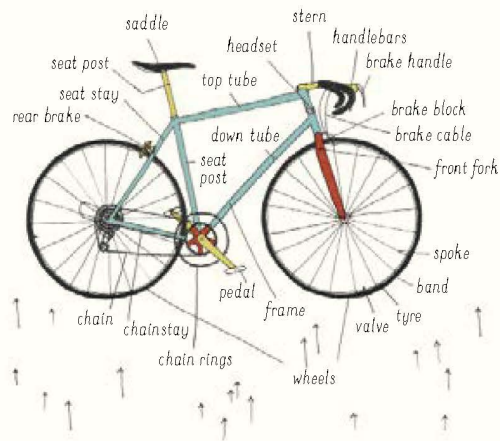
- The human **skeleton** is made up of 206 bones. There are twenty-six in each foot, making fifty-two in total. That's over one-quarter of all your bones!
- The human foot is a true marvel of engineering. In addition to its 26 bones, the foot also contains 33 joints, more than 100 muscles, tendons and ligaments (the connective tissue that surrounds the joints), and 250,000 sweat glands.
- Take a look at your toes. If your big toe is the longest one, you have what is called an 'Egyptian foot'. 60% of people fall into this

category. If your second toe is longer, you have what is called a 'Greek foot' or 'Morton's toe', which occurs in about ten per cent of the population. If your big toe and second toe are equally long, you have a 'square foot'.

### BONUS FOOT FACT

Humans are the only mammals that always walk on two legs. That frees up our hands, allowing us to do all kinds of other useful things!





## 74 THE WORLD'S LIGHTEST RACING BIKE WEIGHS LESS THAN A NEWBORN BABY

- The world's lightest **racing bike** weighs only 2.7 kilograms. It can easily be lifted with one hand, and feels lighter than a small bag of potatoes.
- To make it, German Gunter Mai built a bicycle frame that weighed only 642.5 grams. The bicycle's fork (the two prongs on either side of the front wheel) weighs only 185.9 grams. Mai worked on his design until it weighed only 2.8 kilos, then sold it to an American bicycle manufacturer who made special wheels weighing only 583 grams. That made the bike even lighter, but certainly not cheaper: all in all, the bicycle's construction cost \$45,000.
- Bicycles that are too light aren't allowed to be used in official races. According to the International Cycling Union (the UCI), competition bicycles must not be any lighter than 6.8 kilograms.

## 75 FOOTBALL WAS INVENTED IN CHINA

It wasn't the English or the French but the Chinese who invented the world's most popular ball sport. Over two thousand years before **football** spread throughout Europe, Chinese soldiers were playing a game called 'tsu-cho', which literally means 'kick-ball'. A leather ball was filled with feathers or fur, and two teams tried to score points by kicking it through a goal. Use of the hands was not allowed. The game became extremely popular later during the Song dynasty, which lasted from 960-1279 CE.



a game of tsu-cho

Professional football as we know it today started in 1863 in England. In its early years, football was a much rougher game than it is now: stamping on an opponent's foot was usually allowed, even when they didn't have the ball. If the keeper was in possession of the ball, you could even try to ram him into the goal yourself to score.

## 76 YO-YO CHAMPIONSHIPS ARE A THING!

**Yo-yos** are heaps of fun to play with, and you might even know a few tricks yourself. But if you want to go pro, you could sign up for the World Yo-yo Championships!

- The competition consists of two parts. First there are several compulsory tricks you need to perform. After that, there's a freestyle section

when you can show off your individual and artistic talents. Points are awarded by a panel of judges, and whoever scores the highest wins. Music is allowed when freestyling, and competitors are even allowed to dance or jump around!

- To get to the world championships, you first need to make it through the national championships, although not every country has its own. Japan is home to a lot of great yo-yoers: Shinji Saito has won the world title no fewer than 13 times.





## 152 NAPOLEON WASN'T SHORT

People often think that the French emperor **Napoleon** was very short. But that's not true: Napoleon was 1.68 metres tall, quite a normal height for the time. So why did he look so tiny in all the pictures? There are several good reasons why.

- Napoleon chose his bodyguards by height: they had to be tall, in order to defend him properly. Unfortunately, their looming presence made Napoleon look shorter than he actually was.
- There's another reason why people thought Napoleon was short. The English and the French once used different units of measurement: an English 'foot' was roughly 30 centimetres, or slightly shorter than a French foot, which was 32 centimetres. The English didn't particularly like the French, and so they always gave the height of the French emperor in English feet as it made Napoleon seem shorter.
- Napoleon Bonaparte thought he was the most important man in the whole world, and proclaimed himself emperor of France. He introduced the 'Napoleonic code', a set of civil laws that are still in force in France today. He also invented the Civil Registry where all births, deaths and marriages are recorded, and introduced a universal system of measurement that included kilograms, metres and litres.
- Napoleon was said to always carry chocolate with him during battles, so that he would have enough energy to keep going. On 18 June 1815, however, he lost the **Battle of Waterloo** – perhaps he'd run out of chocolate? After that, he was banished from Europe and never returned.

### BONUS NAPOLEON FACT

In France, it is still forbidden by law to name your pig 'Napoleon'.



*Napoleon and his bodyguards*



## 153 HATSHEPSUT WAS A FEMALE PHAROAH

**Hatshepsut** was a queen who lived in ancient Egypt. She was the chief wife of Pharaoh **Thutmose II**, and later became one of Egypt's rare female pharaohs. The name Hatshepsut means 'the first among women'.

Hatshepsut ruled over ancient Egypt for more than 20 years. By doing so, people thought she was behaving like a man, which is why she was often depicted with a man's upper body and wearing

men's clothing. In some illustrations, she is even shown wearing a beard!

It was extremely uncommon for women to become pharaohs, but Egypt experienced a period of wealth and prosperity during her reign.

## 252 THERE ARE OVER SIX THOUSAND LANGUAGES ON EARTH

It's hard to say exactly how many **languages** there are on earth, but scholars believe it's somewhere between six and seven thousand. Some are spoken by many millions of people, others by only a handful. When the last remaining speakers of a language die, the language dies with them, which is why the number of languages on earth is steadily decreasing.

- Mandarin is the most widely-spoken language on earth, with 1.05 billion speakers. Although most of them live in China, Mandarin is also spoken in Taiwan and other parts of the world. The language has many different dialects, some of which are so different that the speakers cannot even understand one another.

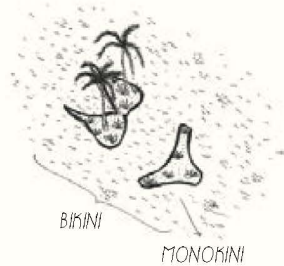


- The world's second-biggest language is English, with 1.01 billion speakers. This figure is due mostly to all the people who speak English as a second language – in actuality, only 500 million people speak English as their mother tongue.
- Spanish also has 500 million native speakers, but fewer non-native speakers than English. In total, the world has about 570 million Spanish speakers.

## 253 'BIKINI ISLAND' IS A REAL PLACE

The **bikini** was invented in 1946 by French fashion designer Louis Réard. Until that time, all women's swimsuits were made in one piece. Many people objected to the new style, saying it was indecent and exposed far too much skin.

During the 1940s, atomic bombs were being tested on the island of Bikini in the Pacific Ocean. The terrible tests were all over the news, and everybody was talking about it. So to give his new invention some extra publicity, Louis Réard decided to name his new invention the bikini.



He also explained that the start of the word, **bi**, is Latin for 'two', which made sense because his swimsuits consisted of two separate parts. Later came the monokini, a swimsuit that consisted only of the bottom half!

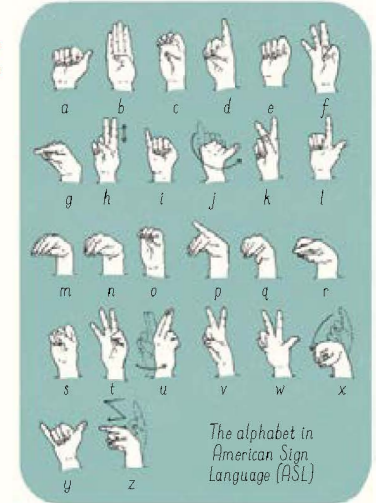
## 254 SIGN LANGUAGE IS NOT THE SAME EVERYWHERE

People with hearing difficulties can use **sign language** to communicate.

- Like spoken languages, not all sign languages are the same. There are different versions throughout the world. For instance, although the UK and the USA are both English-speaking countries, they use different sign languages.
- It's also possible to whisper and shout in sign language:

To shout, straighten your back and make larger movements – instead of moving just your hand, for example, use your whole arm.

To whisper, hold your hands close to your chest and make your movements as small as possible.



## 255 THE BIBLE IS THE WORLD'S MOST TRANSLATED BOOK

The entire **Bible** has been translated into more than 600 languages, and parts of it into over

2,500 languages. The Old Testament was originally written in Hebrew, but was translated very soon after. Translations were available as early as the second century BCE, when the Old Testament could be read in Greek. In the fourth century CE the entire Bible was translated into Latin, and many other translations soon followed.

The first full translation of the Bible into English that can still be read and understood today was made by an Oxford priest named William Tyndale in 1523. Many of the versions that followed borrowed heavily from Tyndale's work.



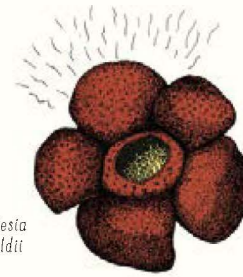
THE BIBLE



## 260 THE GIANT SEQUOIA CAN GROW AS TALL AS A 25-STORY BUILDING

**Giant sequoias** grow in California, on the west coast of the United States. They can grow up to 75 metres tall and weigh nearly 2,000 tonnes, making them the largest living things on earth.

- The world's tallest giant sequoia even has a name: General Sherman. It grows in the Sequoia National Park in California and is 83.8 metres tall, with a trunk 7.7 metres across. General Sherman is probably about 2,300–2,700 years old, making it not only the world's tallest sequoia, but also the oldest.
- In the 19th century, people sometimes carved tunnels into sequoia trunks in order to drive cars through them. This practice has thankfully died out, but some of the old tunnels can still be seen today.
- The bark of the giant sequoia is 90 centimetres thick! That means if ever there is a forest fire, the bark will be damaged but the tree itself will not go up in flames. Fire is even sometimes necessary for the trees to reproduce – their seeds will only fall when surrounded by extreme heat.
- The sequoia may be the largest tree on earth, but it isn't the tallest – that honour goes to the coastal redwood, which also grows in California and can reach heights of 115.5 metres. That's taller than most skyscrapers.



## 261 THE FLOWER THAT REEKS OF DEATH

Most flowers give off a pleasant smell, but not *Rafflesia arnoldii*.

- **Rafflesia** is also known as the 'corpse lily', and can be found in the jungles of south-western Asia. It is a parasite, and grows on vines.
- The plant produces the biggest blossoms on earth: enormous reddish-brown flowers with white speckles. They give off a scent similar to rotting meat, a terrible stink that attracts the flesh-eating flies and other insects needed to pollinate the flower.
- Pollination is a complicated affair, since it requires both a male and a female flower to bloom at the same time. Since the flowers only survive for 5–7 days, their chances of reproduction are very small. The effects of deforestation are also destroying the flowers' habitat, so the probability of both a male and female flower being close together and blooming at the same time is lower than ever. This is why the corpse lily is already an endangered species.

## 262 TOMATO PLANTS ARE POISONOUS

**Tomatoes** themselves are healthy and delicious – but be careful when dealing with the rest of the tomato plant!

- Tomato plants belong to the nightshade family. Their stems contain tomatine, a poison produced by the plant to protect itself against all kinds of dangers. Tomatine is also poisonous to humans.
- Unripe tomatoes still contain a little tomatine, but it disappears once the tomato has become red, sweet and juicy.
- Just like tomato plants, the potato plant, aubergine plant and bell pepper plant are also poisonous.
- Tomatine is only dangerous in large doses, but it can give you a stomach-ache, cause diarrhoea, or make you drowsy. So just stick to ripe tomatoes and there's no need to worry – you can keep eating all the spaghetti sauce you want!





## 284 ONE MUSHROOM CAN BUY YOU A HOUSE

Chinese businessman Stanley Ho once paid \$330,000 for a single piece of fungus. But not just any old mushroom: it was a one-and-a-half-kilo **truffle** that Cristiano Savini had unearthed near the Italian city of Pisa. Actually it was his dog Rocco that found the truffle. Hopefully Rocco got an extra-special treat that night!

Truffles grow on the roots of trees, usually oaks. Trained pigs or dogs are used to sniff them out. They have a very unique and pleasant flavour, but are generally only eaten in small quantities because they are so expensive.



## 285 KETCHUP USED TO BE A MEDICINE

**Dr Miles' Compound Extract of Tomato**  
The name might sound glorious and fancy, but all it really means is **ketchup**.

During the early nineteenth century, ketchup was used as a medicine. The man selling it claimed that it could combat virtually any disease. But because it contained exactly the same ingredients as modern-day ketchup, its 'medicinal' effects were probably very limited.

It may not be a medicine, but ketchup is not bad for you either. It's made of tomatoes, which contain lycopene – a substance that helps your body protect itself against all kinds of diseases. The body does have trouble absorbing lycopene from raw tomatoes, but heat them up and it's much easier. So things like tomato soup, pasta sauce – and ketchup – will give you a delicious dose of healthy lycopene.

**Cola** was also invented by a pharmacist. It was created in 1886 by John Pemberton, who was not only a chemist but also a doctor. He had tried creating medicines before, but they weren't very successful or popular. So this time he changed

his strategy, and made a soft drink. It eventually became hugely popular, and today the recipe for Coca-Cola is one of the world's best-kept secrets.

So is Coke good for you? Not really – it contains a lot of sugar, so you should probably only enjoy it occasionally.



## 286 FRIED WORMS AND GRASSHOPPERS ARE GOOD FOR YOU

Cricket chips, mealworm burgers, grasshopper kebabs... are you starting to feel queasy? In a lot of countries, **eating insects** is considered very normal practice.

- Families in the Congo can easily eat up to half a kilogram of caterpillars per week.
- Just try to find a South-African who isn't crazy about mopane worms!
- Grilled bee larvae and fried silkworms are both considered delicacies in China.
- In Mexico, bowls of fried crickets are often put on the table instead of chips. Caterpillars, ants and worms are also very popular Mexican treats.
- In fact, there are over two billion people on earth who think that eating insects is not out-of-the-ordinary at all.

It would be a good idea for us to start including insects on the menu too. They are very high in protein, which is necessary for growing strong bones and muscles. Insects also need very little food to grow, since they are cold-blooded creatures and don't use energy to maintain their body temperature. That's why it's better for the environment to raise crickets instead of other animals like pigs, cows or sheep.

And lastly, beetles, grasshoppers, mealworms and other creepy-crawlies produce almost no greenhouse gases, especially when compared to mammals.

Scientists all over the world are currently researching the best methods for farming insects, as well as ways of encouraging more people to include them in their diet.

Maybe one day you'll sink your teeth into a cricket burger without even realizing it ...



### BONUS FOOD FACT

In Cambodia, fried **tarantulas** are a delicacy. These enormous spiders are served up whole, with a slice of lime and a bowl of dipping sauce. They're a real family favourite, with enough legs for everybody!