

THE WORLD'S
FIRST

ROLLER COASTER

AND OTHER AMAZING INVENTIONS

MIKE
BARFIELD

FRANZISKA
HÖLLBACHER

ROLLERCOASTER

HI! I'M GRAVITY, THE INVISIBLE FORCE THAT MAKES THINGS FALL.

ALMOST THERE!

YOU OKAY?

I'M WHY ROLLERCOASTER CARS NEED PULLING UP THE TRACKS.

NO GOING DOWNHILL FAST EEK!

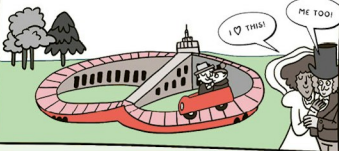
...AND WHAT HELPS THEM RACE ROUND THE TRACK AND BACK DOWN TO THE GROUND!

THE IDEA FOR ROLLERCOASTERS CAME FROM GIANT ICE SLIDES BUILT FOR WINTER FUN IN RUSSIA, 400 YEARS AGO... PEOPLE RODE ON BLOCKS OF ICE!



TODAY MANY COUNTRIES STILL CALL ROLLERCOASTERS RUSSIAN MOUNTAINS.

THE FIRST MODERN STYLE ROLLERCOASTER APPEARED IN PARIS, FRANCE, IN 1817, AND HAD WHEELED CARS ON A HEART-SHAPED TRACK...



PEOPLE BEGAN BUILDING BIGGER AND BETTER WOODEN RIDES IN SEARCH OF THRILLS.



LEAPS THE DIPS! PENNSYLVANIA USA BUILT 1902 AND STILL WORKING!

THE WORLD'S FIRST ROLLERCOASTER WITH STEEL TUBES FOR TRACKS OPENED IN DISNEYLAND, USA, IN 1953...



THE WATERHORN BODDLEDERS

THERE ARE WELL OVER 2,000 ROLLERCOASTERS IN THE WORLD TODAY, AND TUBULAR STEEL TRACKS ALLOW DESIGNERS TO INCLUDE TIGHT BENDS THAT FLIP RIDERS UPSIDE DOWN. BUT NOT FOR LONG!



TWO MINUTES LATER

AGAIN! AGAIN! AGAIN!

WHATEVER NEXT? ON A ROLL

WE HAVE LIFT OFF!

The forces felt by rollercoaster riders can be greater than those felt by astronauts during rocket launches, but for much briefer times.

ZOOM!

The world's fastest rollercoaster is the Formula Rossa in Abu Dhabi, Dubai. The cars reach a speed of 240 km/h in under five seconds!

GOING UP!

Rollercoaster fans have their own language. The floating feeling you get on hills is known as 'airtime'.

GOING LOOPY!

Rollercoaster loops are shaped like upside-down teardrops – not circles – as this makes them safer to ride.

SMILE PLEASE

Rollercoaster cameras have snapped some odd sights.



HIGHLY INVENTIVE

DIÉBÉDO FRANCIS KÉRÉ

Hello! My name is Diébédo Francis Kéré. In 2022, I became the first African to win the Pritzker Architecture Prize – the world's top award for people who design buildings.

But it has been a long journey – literally!

I grew up in a tiny village called Gando in Burkina Faso, West Africa. There was no school, but we were like one big family. We played together in the village, laughed and built houses side by side. When I was seven, I went to live with my uncle in the city of Tenkodogo to learn to read and write. **My first journey!**

My school was very hot, with little light or air, and one hundred children all crowded together. This was when I decided that one day I wanted to build better schools for everyone – beginning back home in Gando!

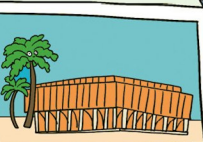
After leaving school, I became a carpenter, working with wood. Skills like these can take you far. Mine took me to Berlin, Germany, where I eventually went to college to study architecture.

Could I make my dream come true?

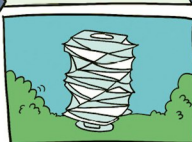
Maybe! I headed home to Gando to build an eco-friendly school with the help of the community. We made mud bricks rather than use expensive cement and planted mango trees for shade – as well as their tasty fruit!

It was finished in 2001 with a raised roof to beat the heat. I qualified as an architect soon afterwards and went back to build a high school, as well as homes for teachers too!

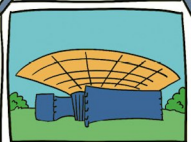
But, best of all, my cool school inspired others like it to be built. Now I have designed buildings all over the world that work with nature, not against it.



BENIN NATIONAL ASSEMBLY,
PORTO-NOVO, BENIN

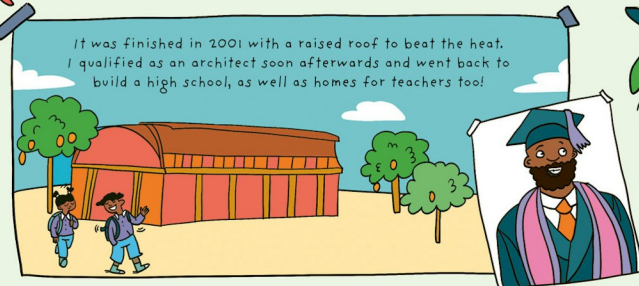


TUM TOWER, UNIVERSITY OF
MUNICH, GERMANY

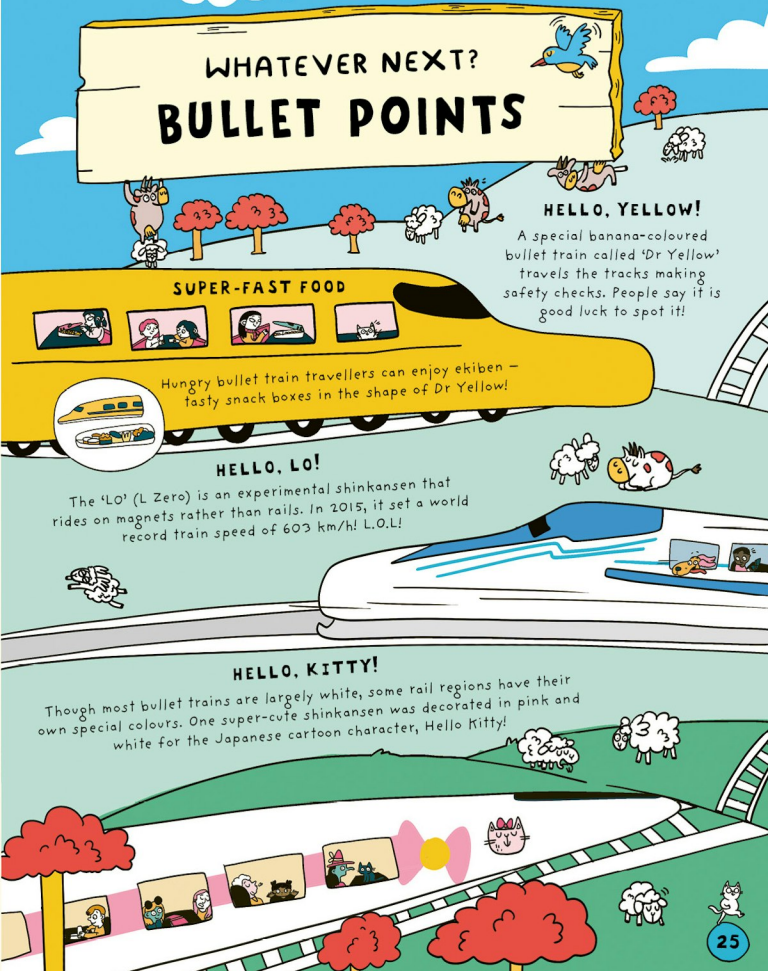
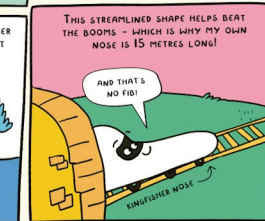
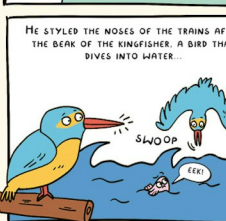
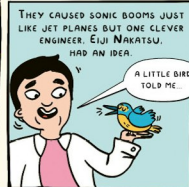
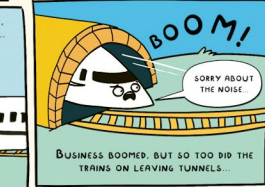
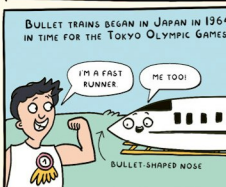
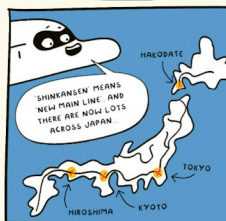
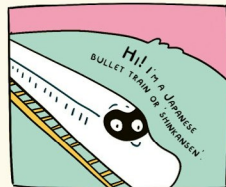


SERPENTINE PAVILION,
LONDON, UK

It's been a great journey – and it isn't over yet!

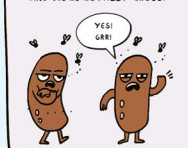


BULLET TRAIN



FLUSH TOILET

Hi! WE'RE A PAIR OF POOS - AND WE'RE ROYALLY CROSS!



WE'RE CROSS WITH THIS ROYAL IN PARTICULAR...



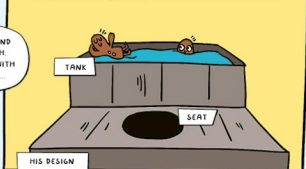
JUST OVER 400 YEARS AGO, ENGLISH QUEEN ELIZABETH I BECAME THE WORLD'S FIRST FAMOUS WAME TO USE A FLUSHING TOILET.



THE FLUSH TOILET WAS INVENTED BY HER GOSBON JOHN HARRINGTON, A POET-TURNED-PLUMBER...



IN 1536, HE BUILT HER A WOODEN LOO WITH A WATER TANK ABOVE IT TO WASH AWAY WASTES...



FRANKLY, WITH THIS INVENTION ALL OUR FUN WENT DOWN THE PAN - FOREVER!



BEFORE FLUSH TOILETS, PEOPLE USED POTS THEY KEPT IN THEIR BEDROOMS...



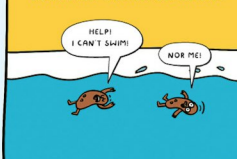
LOOK OUT BELOW! THEN, IN THE MORNINGS, US POOS FLEW!



THAT WAS A FUN WAY TO GO!



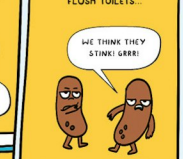
THE INVENTION OF THE FLUSH TOILET MEANS WE NOW MEET A WATERY END INSTEAD...



TO MAKE THINGS WORSE, BRITISH PLUMBER THOMAS CRAPPER INVENTED THE U-BEND IN THE 1860S...



FRANKLY, US POOS HATE FLUSH TOILETS.



WHATEVER NEXT? TAKE A SEAT

BOLDLY GO

The world's most expensive toilet cost over \$23 million US dollars to develop. It is on board the International Space Station and uses a fan - not a flush - to suck waste inside it.



SITTING PRETTY

The most valuable loo on Earth is on display in the Hang Fung 'Hall of Gold' in Hong Kong. Solid gold, it is valued at \$5 million, and no one is actually allowed to use it as a loo.



YUM OR YUK?

'Modern Toilet' is a chain of toilet-themed restaurants in Taipei, Taiwan. Customers sit on loo seats to eat food served on bathroom-style plates, including poo-shaped puddings.



IS IT ART?

The sculpture 'Fountain' by French surrealist artist Marcel Duchamp is a factory-made men's urinal laid flat and signed 'R Mutt, 1917'. Experts reckon it is the world's most important piece of modern art ever!

