



OUR HUMAN STORY

IN 100 AMAZING ACHIEVEMENTS

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WELCOME

Humans are extraordinary. Yes – you, me, everyone on Earth today, and all the people who have ever lived have been part of an incredible human story of problem-solving, creating, and imagining a better world.

For thousands of years, people like us have tamed fire, wrangled electricity, and channelled water, built humongous structures from bricks and nano-sized ones from atoms. We've even walked on the Moon. But this isn't a book full of famous inventors from the past. In here, you'll find powerful ideas like numbers and language that we all use every day, and shared cultural systems that we're all a part of just by living our lives: things like laws and loos. There are also celebrations of creativity – like art, music, and storytelling – to which every culture, community, and person on Earth contributes.

Welcome to the most amazing human story ever told.

One of the greatest joys of putting this book together has been noticing the connections between achievements. From the pottery wheel we get transport, but also ceramics, which brought us bricks, then the arch, then tunnels to take shortcuts, global trade, storytelling... It makes this book feel like a web – not a list – that you can bounce around endlessly. So although you're very welcome to read it from start to finish, you might also choose to follow where your curiosity takes you, each reading becoming a different journey through our shared human story.

This book covers thousands of years of amazing human achievements. But you're a part of this story, too. It's people like you – who are curious, ask questions, and think differently – who make our human story an awe-inspiring, ongoing tale. We're all still learning and improving all the time. And our next great achievements could easily come from someone just like you.



ABOUT THE AUTHOR

Dr Anna Ploszajski is a materials scientist and author from London. She's fascinated by how humans shape the world through science and creativity, and loves understanding how things are made – from mechanisms to molecules, symphonies to stories. When she's not writing, she can usually be found swimming outdoors, playing her trumpet, and going on adventures with her dog, Spud.

FANNING THE FLAMES

Mastering **fire** brought us heat, light, power, energy, and safety, changing the course of humanity's future

A Polynesian trickster called Māui learns the secrets of the fire goddess. A small water spider spins a web to carry fire from an island in Cherokee mythology. A Greek Titan called Prometheus steals fire from the gods.

In all of these stories, and countless others, a powerful force brings fire – forbidden, dangerous, and divine – to the people. The gift offers technology, progress, and power, but also danger and destruction. Why do humans accept this dangerous gift? Because it changes everything.

The fossil record shows that the first wildfires on Earth probably started over 400 million years ago. But these were untamed. Our ancestors first learnt to harness, control, and create fire, and to use it for light, cooking, signalling, and hunting, around 400,000 years ago.

Fire made cooking possible, which meant food was safer to eat. It brightened nights, and helped communities to form – the campfire turned a means of survival into time for storytelling.

Later, fire led to technology – baking clay into bricks, clearing farmland, and smelting metal from rock to forge tools and weapons.

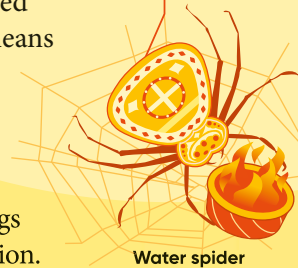
This is the nature of fire: on one hand it brings us good, on the other it fuels warfare and destruction.

Yet we can't resist it. When we stare into a flame, something stirs deep within us. Perhaps that's why fire plays a central role in many religious, spiritual, and cultural ceremonies, including fire-worship, cremation, candles of remembrance, and even the Olympic torch.

Engineering fire into machines has propelled us into the modern world. The Industrial Revolution – the shift from working mostly by hand to working mostly with machines, which also happened to be one of the greatest changes in human history – was powered by fire.

Steam engines had burning coal in their bellies, a car's internal combustion engine works because ignited petrol pushes pistons, power stations transform fire into electricity. Even rocket fuel is a fire that shoots us to the Moon and beyond.

So next time you flick a switch, remember the stories of Māui, the water spider, and Prometheus. These cautionary tales remind us of both the promise and the danger of science and technology today. Whenever we strike a match, we hold the power to both create and destroy.



Water spider

Ceremonial flames

At the climax of the annual Up Helly Aa festival in Shetland, UK, a replica Viking longship is set alight. The fire consumes the vessel as the crowd members celebrate the end of the long northern winter.



Fire offers technology, progress, and power but also danger and destruction.

Burning fuel

For thousands of generations, a flickering fire has been a symbol of comfort, safety, and warmth. The hypnotic dance of the colourful flames still has the power to entrance us today.



Striking a match

Around the world 1.3 billion matches are struck every day! They start candles and cooking fires, bonfires, barbecues, and more.



Cooking with gas

Millions of us cook or heat our homes with gas stoves and boilers – whether running the hot tap, turning on the radiators, or cooking dinner.



Starting a car

Turning a car key produces a spark that sets fire to a mixture of fuel and air, which explodes to drive the engine's pistons up and down at high speed.

A TURNING POINT

From making pottery to the jet turbine, the invention of **the wheel** has kept the world spinning

Bzz-bzzzzz, bzz-bzzzzz... the murmur of modern life. Our phones vibrate when a minuscule wheel that is weighted on one side spins around really quickly. It's a perfect invention for a noisy world: a wheel that silently gets your attention.

And what's amazing about the wheel is that we've been solving problems with it for millennia. It started with clay. Our Neolithic ancestors learnt to mould clay bowls by hand, but any wobbly, uneven sides could shatter when fired if the material dried out unevenly. So, around 6,000 years ago, potters in Mesopotamia (modern-day Iraq), Ukraine, and China independently placed wet clay on a flat disc and spun it, inventing the pottery wheel. It was the first invention that used rotation, and helped us make things smoother, faster, and more beautiful.

Around 5,000 years ago, traders across Europe and Asia wanted to move goods further than their pack-horses could carry. So they turned the potter's wheel sideways, added an axle, and the transport wheel rolled into history. Wagons made long-distance trade safer and faster – and these wheels didn't just carry goods, they also transported ideas, stories, and cultures.

Around 5,000 years ago, traders... turned the **potter's wheel** sideways, added an **axle**, and the **transport wheel** rolled into history.

Mechanical watch 1700s

Toothed wheels called gears mesh together to pass movement along at different speeds. In this watch a small gear spins quickly to count seconds, while its teeth turn a much larger gear slowly to count hours.

Potter's wheel 4500–3500 BCE

This ancient Egyptian figurine shows a person using a wheel to make a pot.

Stone wheel 2000 BCE

First spoked wheel 2000 BCE

Mesoamerican toy 4000 BCE

Stone mill wheel 200 BCE

Mill wheels were made of heavy stone so they could grind grain.

First windmill 700–900 CE

The blades of a windmill transfer the wind's motion to the grinding wheels.

Jet turbine 1930

Spinning wheel 1200s

Penny-farthing bicycle 1870

Water transporter 1991

Sprocket 1880

First car 1886
A single front wheel was used for ease of steering.

Ferris wheel 1937

ANIMAL ALLIES



How living with animals enriches our lives

If there's one thing I've learned from fairytales, it's not to invite a wolf into your house. And yet, I live with a dog – the wolf's direct descendant. My "wolf" (named Spud) is currently snoozing on the sofa, and, in a minute, I'm going to get up and give him all my cheese.

I'd say he has a pretty great life – two long walks a day, gourmet meals, free holidays, a box full of toys, and a neighbourhood of fans. But it's taken thousands of years to get to this stage of human-animal companionship.

Archaeological evidence suggests that humans have been keeping pets for at least 14,000 years. The first were wolves that we lured into settlements with leftover scraps, to keep us safe, and cats we kept around for hunting the mice in our grain stores. Over time, humans managed to domesticate these wild creatures and they became our companions or helpers, like horses, which

Hunting partners

In Mongolia's Altai Mountains, Kazakh eagle hunters have a special bond with their birds. The eagles are treated as family members and hunting partners.



were strong enough to pull ploughs. In this way, humans and animals formed partnerships. Gradually, these relationships shifted from working colleagues to family – although we do still give some animals jobs, such as sheepdogs on farms, and guide dogs for the visually impaired. And our love for them often knows no bounds. The ancient Romans buried their pet dogs in family tombs or dedicated pet cemeteries, and the ancient Egyptians shaved off their eyebrows in grief when their cats died.

Our pets are still helping us today, but in different ways. They help us to be more empathetic, less lonely, learn responsibility, and boost our mental and physical health just by their gentle presence. Through them, humans have mastered the science of selective breeding to enhance traits such as a calm nature or a physical characteristic to suit a certain job. We've learned to care for their health via veterinary science, and devised all sorts of ways of understanding animal psychology and enhancing their training. We've also created animal welfare laws, in recognition of their right to be treated properly and with respect.

Of course, it's not just dogs and cats: our furry, feathery, and scaly friends also include rabbits, hamsters, guinea pigs, fish, snakes, lizards, iguanas, turtles, parrots, and budgies. Today, we form extraordinary bonds with our pets – they really are a part of the family. It's estimated that there are more than a billion pets worldwide, with around half of all households living with an animal.



It's o-fish-ial!

Not quite as cuddly as a cat or as trainable as a dog, fish are the third most popular pet worldwide. About 11 million US households kept freshwater fish in 2025.



Cat mummy

As well as people, ancient Egyptians mummified cats, so that their soul could return to their body in the afterlife.

Evidence suggests that we have been keeping pets for at least 14,000 years.



In safe paws

Nearly 20,000 visually impaired people worldwide rely on a guide dog to travel. The dogs are chosen for their calm temperaments and are trained for about two years to stop at kerbs and avoid obstacles.