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INTRODUCTION

You can tell if someone is in love with learning through a simple three-letter word that is universally expressed in every culture throughout the world. WOW! That's it! This little word is the verbalisation of the human brain finding out something new, fascinating, remarkable. It is the result of a shot of joy from our evolutionary reward system that says – yes, that's great! I love it! WOW!

If we can find out what makes our brains go WOW!, perhaps we'll discover important clues for creating environments that stimulate a lifelong love of learning.

Writing giant world history books and giving thousands of lectures and workshops have helped me identify five ways in which these WOWs happen.

Firstly, we experience the feeling of WOW! when we take a step back and try to see the big picture. It's the same feeling as when we have hiked to a hilltop and look down at the landscape below and it takes our breath away. The joy of seeing a big-picture view of knowledge is what originally inspired me to write a book that combines natural and human history and connects up the dots of the past.

The second WOW! occurs when we learn things in a visual way. Every page of *Absolutely Everything!* has been hand-crafted. Strong visual design and illustrations help to bring the story to life because human brains evolved to



understand the world through images and sound as well as written words and numbers.

Another WOW! happens when we find out something that our friends or family do not know. Our stone age ancestors travelled in small groups and anyone who found out special information that could improve survival – like a source of food or shelter – would have been congratulated as a superhero. It is no surprise that we have evolved a way of feeling joy when we discover things others do not know.

The fourth WOW! concerns choice. A world full of choice is a place brimming with potential joy. Look at the index in *Absolutely Everything!* and choose what most interests you. Dip in and out or read from the beginning to the end – and you'll be excited by each new adventure.

Finally, you can feel the experience of WOW! when you learn by using your hands. Hand-to-eye coordination has always been important for human survival. We have evolved to feel enthused when we use our hands, from making tools to clapping because someone has done well.

The fifteen activity suggestions in this booklet are designed to provoke a sense of WOW! through making, drawing, writing, solving, showing and knowing. They are meant to be creative and allow individual personality to shine through. Ideally, adults and children will do them together. Compare your approaches, and watch out for similarities and differences, strengths and weaknesses. You may learn more about the young people in your life and some new things about yourself, too.

Above all, have fun. Hopefully, from time to time, you will find yourself stepping back with wonder at your collective creativity and hear yourself say that magic word - WOW!

Christopher Lloyd
chris@whatonearthbooks.com

We're busily working on an expanded online version of this book so you can take your own personal journey through *Absolutely Everything!* with many more creative activities. Each activity you complete will be individually assessed by our specialist team. At the end, you will receive a Certificate of Absolutely Everything Studies! Email wow@whatonearthbooks.com to find out more.

FLIPPIN' FANTASTIC

“

THE UNIVERSE BEGAN AS A DOT TOO SMALL TO SEE. THIS DOT WAS SO HOT AND UNDER SUCH PRESSURE FROM ALL THE ENERGY TRAPPED INSIDE IT THAT SOMETHING BIG WAS BOUND TO HAPPEN. ”

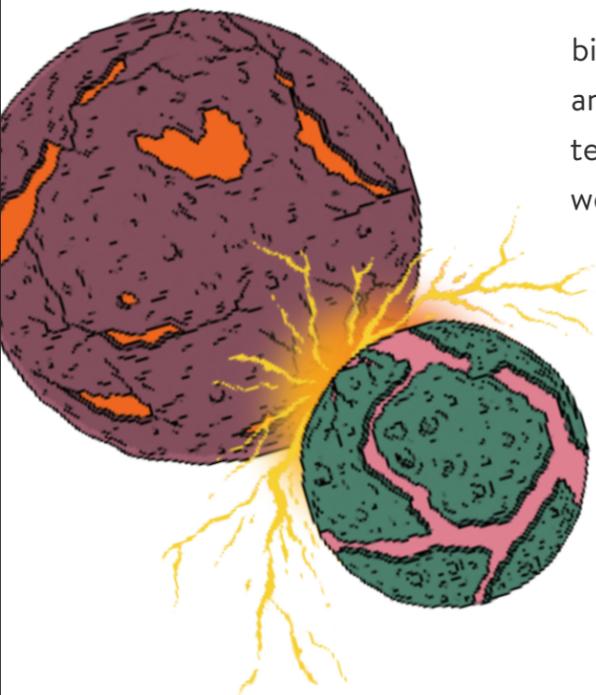
Absolutely Everything!, page 12

Background

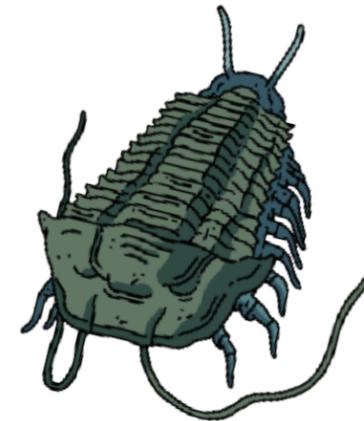
The first part of the story of planet Earth takes us from 13.8 billion to 450 million years ago. There were some enormous changes over this huge time period.

The Big Bang released an unimaginably big blast of energy. The formation of the sun and our galaxy, and the massive collision that created the Earth and the moon, are events that seem unbelievable when we look around us and think about life on our planet today.

From single-celled organisms and cyanobacteria, to the bizarre-looking *Anomalocaris* and the five-eyed *Opabinia*, and from our very distant ancestors, the sea squirts, to terrifying giant sea scorpions, the first life forms on Earth were fascinating. What exciting times!



The Earth and Theia colliding



Trilobite

Your challenge

Create a “flip book” containing a series of pictures that reveal the changes in the universe when you quickly flick through them.

The first image could be a tiny dot, then you could show how the Big Bang led to the position of the planets in our solar system. It could then zoom in on the movement of tectonic plates and the emergence of life in the sea.

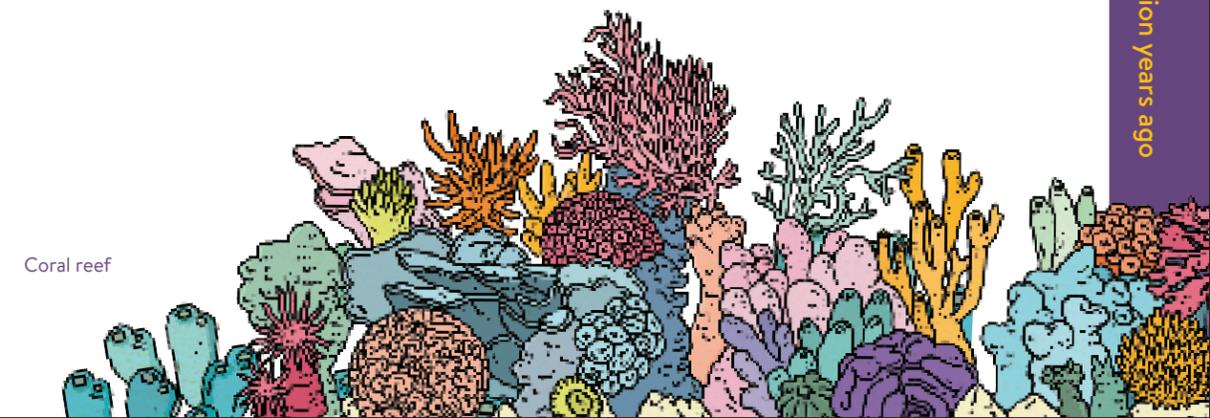
You could make the flip book with a blank notebook, or by fastening together some pieces of paper with glue or staples. Drawings can be very simple or you could find pictures online and print them out.

Why not...

- Consider putting your images on PowerPoint slides and flicking through them very quickly to achieve the flip book effect.
- Pick the creatures that most fascinate you to represent different periods in the chapter.
- Present to family and friends, and choose some dramatic bars of music to accompany your telling of our origins.

FUN FACT

When scientists Wilson and Penzias discovered the distant background microwave radiation that we now accept as evidence of the incredibly hot Big Bang, they initially thought it was a misreading due to a build-up of pigeon poop on their equipment!



Coral reef

TRY A TRAILER!

“

TIKTAALIK IS THE FIRST CREATURE EVER KNOWN TO HAVE BEEN ABLE TO DO A PRESS-UP!”

Absolutely Everything!, page 40

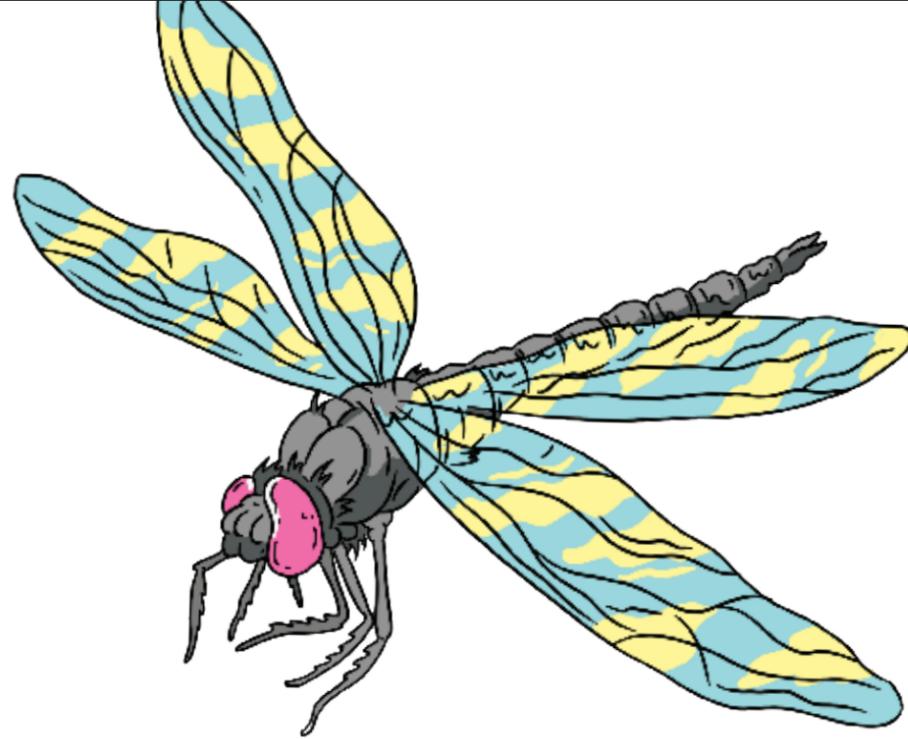
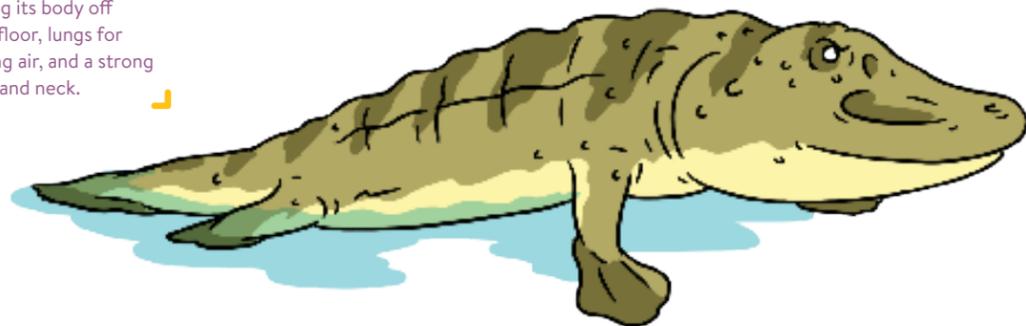
Background

Fact is often stranger than fiction! Could amphibians really do press-ups? Can a fungus actually grow to the size of a village? Did *all* the dinosaurs die out in a massive meteor strike?

As the Earth flexed and settled, huge tectonic plate movements caused continents to collide and created conditions that allowed life in many forms to flourish in surprising ways.

From the first mundane mosses through to fearsome dinosaurs, life filled the oceans and seas and covered the land during this astonishing time of change.

Tiktaalik had wrist bones for lifting its body off the sea floor, lungs for breathing air, and a strong ribcage and neck.



Griffinflies had a wingspan of around 75cm. They're now extinct, which is probably for the best!

Your challenge

Imagine that a new blockbuster movie about the first life forms is to be made. You need to write and record the trailer for the movie using all your descriptive powers and scientific knowledge to engage the audience with the amazing story told in this chapter.

Why not...

- **Think big! A big story needs a big trailer. Use all your skills to make it powerful and engaging.**
- **Script it carefully and sequentially after you have read the chapter.**
- **Aim for around sixty seconds to capture viewers' imagination and leave them wanting more.**

FUN FACT

The North American and Eurasian tectonic plates (shown on pages 21 and 45 of *Absolutely Everything!*) are separated by the Mid-Atlantic Ridge. The two continents are still moving away from each other, currently at the rate of about 2.5 centimetres (1 inch) per year!

DESIGNER DINOSAUR

“

...OUT OF DISASTER
CAME A COMPLETELY NEW
GENERATION OF REPTILES.
THESE WERE THE MOST
FEARSOME CREATURES
EVER TO TREAD THE
EARTH. WELCOME TO THE
AGE OF DINOSAURS!

”

Absolutely Everything!, page 52

Background

Imagine stumbling across huge fossilised teeth in a forest, and realising that they could belong to no living creature on this Earth. It was this discovery of *Iguanodon* teeth by Gideon and Mary Ann Mantell in 1822 that eventually led scientists to believe that a completely new type of creature once roamed our planet – the dinosaur.

Different from other reptiles, who have legs that sprawl out to the side, dinosaurs have hip bones that place their

limbs almost directly under the body. This means they can run faster, and for longer. Fossils of about 800 different dinosaurs have been found so far, but it is estimated that nearly 2,000 species existed altogether.



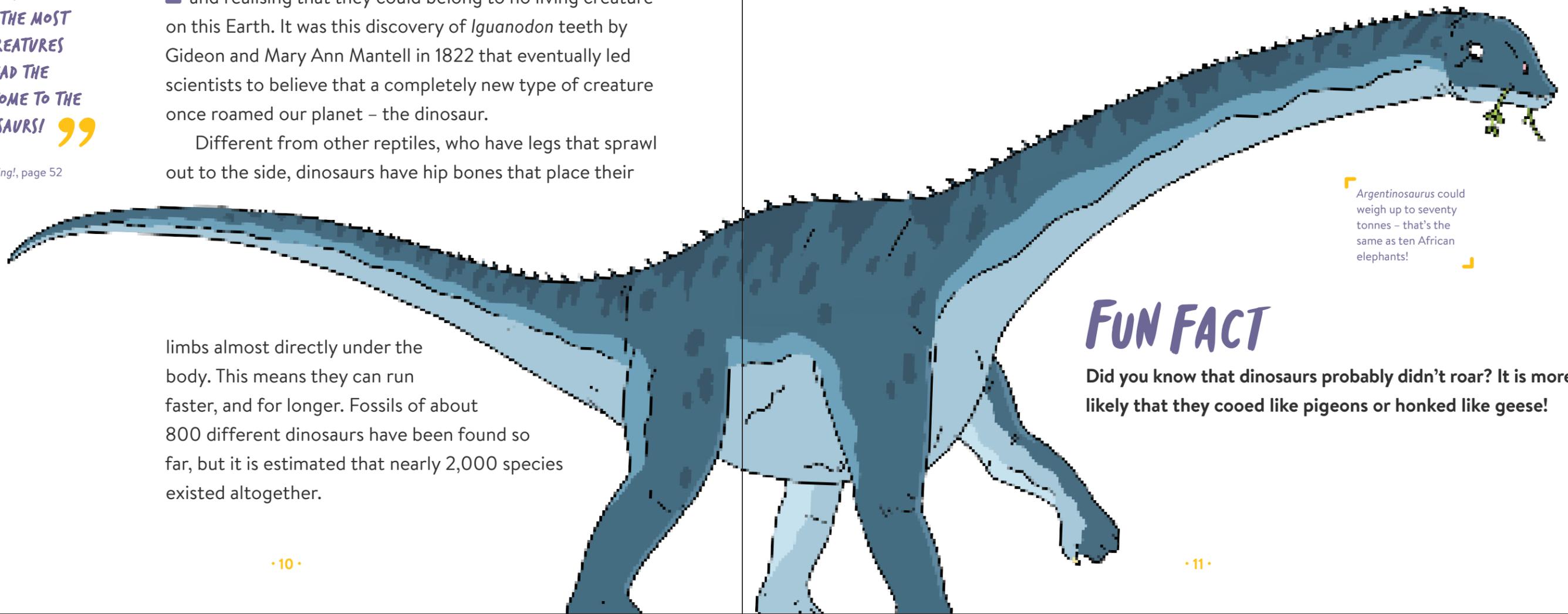
Quetzalcoatlus

Your challenge

Pick a favourite dinosaur and create a model of it out of junk, capturing its defining features. Enormous or tiny, speedy or lumbering, there are plenty of dinosaurs to choose from!

Why not...

- Carry out some additional research on your choice of dinosaur. What makes it unique?
- Think about the scale of your model. If you've chosen a whopper like the *Argentinosaurus* then perhaps life-size isn't a good idea!
- Think carefully about how to use the materials you have at hand. Did your dinosaur have scales? Did it have feathers? How can you recreate this out of junk?



Argentinosaurus could weigh up to seventy tonnes – that's the same as ten African elephants!

FUN FACT

Did you know that dinosaurs probably didn't roar? It is more likely that they cooed like pigeons or honked like geese!

CHARCOAL ART

“

...NO CREATURE
ANYWHERE IN THE WORLD
OTHER THAN HUMAN
BEINGS HAS EVER BEEN
ABLE DELIBERATELY
TO LIGHT AND CONTROL
FIRE.

”

Absolutely Everything!, page 81

Background

When human ancestors discovered how to light and control fire it made them the most powerful creatures on Earth. Not only that, but the invention of cooking is credited with allowing us to develop our large brains! Read all about the discovery of fire on pages 80–86 of *Absolutely Everything!*

Charcoal is a by-product of fire. It is created by when organic matter, such as bones, vegetation or wood, is heated up without oxygen. Charcoal burns extremely efficiently (which is why we use it for barbecues today) and, because it is mainly made of carbon, it leaves a strong black mark on anything it touches.

Our Neanderthal ancestors discovered this by accident and recent evidence suggests they started using charcoal to create simple drawings, many of which were on the inside walls of caves (see *Absolutely Everything!*, page 86).

Your challenge

Create a cave drawing using charcoal. You might want to choose things from your life today to draw in the Neanderthal style, or you might want to draw images that a Neanderthal would recognise from their experiences.

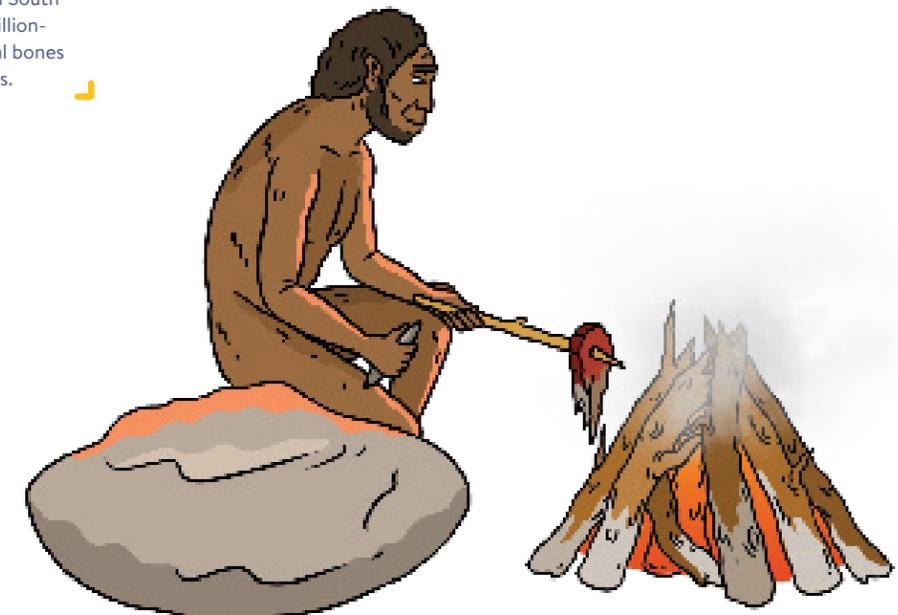
Why not...

- Research more examples of cave art.
- Experiment with the different techniques today's artists use, such as hatching, rubbing and blending, before you create your final image.
- Tell a story with your art – what meaning are you trying to convey?

FUN FACT

The oldest recorded example of cave art is the 'red dot' found in the caves of El Castillo, Spain. It is over 40,800 years old. What could it mean?

In 2012, researchers discovered the earliest evidence of fire in Wonderwerk Cave in South Africa. They found 1-million-year-old charred animal bones and burnt plant remains.



EXPLAIN EXTINCTION

“

IN NORTH AND SOUTH AMERICA, HORSES, BIG CATS, ELEPHANTS, MAMMOTHS AND MASTODONS, CAMELS, GREAT BEARS, GIANT BEAVERS, PECCARIES, GIANT GROUND SLOTHS AND THE GLYPTODONT – AN ARMADILLO THE SIZE OF A PICK-UP TRUCK – ALL MYSTERIOUSLY DISAPPEARED.

”

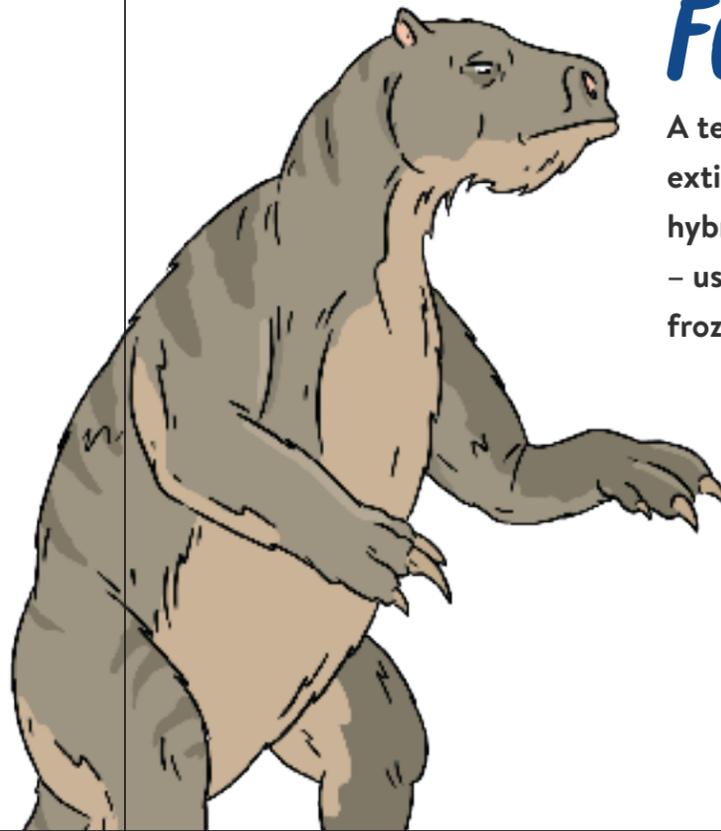
Absolutely Everything!, pages 95–96

Background

The Pleistocene Extinction, which took place between about 13,000 and 8,000 years ago, was devastating for large mammals of the period. Some of these creatures were fascinating! Imagine a wombat the size of a rhino, a kangaroo standing almost three metres tall, or the tank-like *glyptodont* measuring three metres in width! Find out more on pages 95–98.

Why did this happen? Was it due to climate change, or were humans to blame? It seems unlikely that climate change was the only cause because some of these creatures had already existed for tens of millions of years and adapted to other major changes in the climate.

Maybe a significant clue is that many of these extinctions happened after the arrival of humans to an area. Some experts have suggested that hunting and the practice of “fire-stick farming” (where large areas of habitat are burnt to improve hunting and grazing for game) were big factors in this puzzling mass extinction.



Whatever the cause, as stewards of this planet, we have a duty to explore this issue more carefully in order to protect the creatures of today.

Your challenge

Choose one of the amazing creatures from the Pleistocene era to research a little further. Write a detailed description of your chosen animal. Now imagine if it had managed to survive and was living in today’s world, would it be in danger of extinction? What would the threats be and what could be done to increase its chances of survival?

Why not...

- **Consider: What did it look like? What size was it? Where did it live? What did it eat, how high up the food chain was it? What evidence do we have of its existence?**
- **Think about an animal facing near extinction today such as the northern white rhino. Would your Pleistocene creature stand a better chance of survival or would they both face similar threats today?**

FUN FACT

A team of Harvard scientists are working on the de-extinction of the mammoth. Their first goal is to create a hybrid of an elephant and a mammoth – a “mammophant” – using DNA that can be edited from specimens found frozen in Siberian ice.

The giant sloth is one of the large mammals that became extinct after the Pleistocene Extinction.

CLEVER CODES

“

THE ROSETTA STONE, FOUND IN EGYPT IN 1799, CONTAINS THE SAME TEXT WRITTEN IN THREE SCRIPTS, INCLUDING EGYPTIAN HIEROGLYPHICS AND ANCIENT GREEK. SINCE HISTORIANS KNEW ANCIENT GREEK, THEY USED THE STONE TO DECIPHER THE HIEROGLYPHICS.

”

Absolutely Everything!, page 107

Background

Writing is essentially a code. Each symbol in a language has a meaning to be deciphered.

Did you know that your copy of *Absolutely Everything!* contains a coded message? Turn to the contents page and use the method below to find the answer!

Each number in the sequence below will direct you to a letter. Together the letters form a message. The first or the first two digits represent the chapter. The next digit represents the word in the chapter title and the last digit represents the position of the letter in the word.

221 615 915 1117 511 813 1224 134 1021 1537 318
6110 1412 513 732 1421 714 414 137 1214 1116 622
415 1027 1318 1221 521 619 814

- For example, the number 221 will lead you to the letter A:
- 2 The letter is found in the title of Chapter 2, “Land Ahoy!”
 - 2 It’s found in the second word (Ahoy)
 - 1 And it’s the first letter (A)

The answer to the whole coded message can be found at the bottom of page 35.

Your challenge

See if you can create your own secret messages by developing a code that corresponds to *Absolutely Everything!* You might like to use numbers or you might like to think of more ingenious and cunning methods. Try the codes out on your family and friends!

Why not...

- Be neat and accurate in the way you work – perhaps use a grid.
- Think about how the code can be “foolproof”.
- Try to create a message using symbols that can be deciphered in 200,000 years’ time!

FUN FACT

The Egyptians believed there was great power in a name. If someone’s name was remembered, then he or she would survive in the afterlife. That’s why pharaohs’ names were written in hieroglyphics in their tombs.



Howard Carter (left) and one of his assistants examine the mummy of King Tut. The discovery of the boy king’s tomb wasn’t important because King Tut was a super important Pharaoh. He probably wasn’t. It’s because most of the things buried with him were still there. All of the other Egyptian tombs ever found by archaeologists before this had been mostly empty, their treasures stolen by tomb robbers.

MEDITATION MOMENT

“

HE COULD SEE THE TRUTH
OF ALL THINGS AND FELT
LASTING PEACE AND JOY.

”

Absolutely Everything!, page 145

Background

Siddhartha, who became known as the Buddha, finally achieved enlightenment after meditating under a tree for forty-nine days. Read all about the Buddha’s spiritual journey on pages 144–48.

Buddhists believe that enlightenment is when you come to know the truth about life. From this point you can then break free of the cycle of craving and suffering, ending the continuous cycle of rebirth.

One of the Buddha’s meditation techniques was the practice of mindfulness. The Buddha used this technique to calm his mind, diverting it from the tendency to crave things by focusing his attention on what was happening in the immediate moment.

Your challenge

Find a moment of calm mindfulness. Can you stop your mind from wandering by focusing on the present moment?

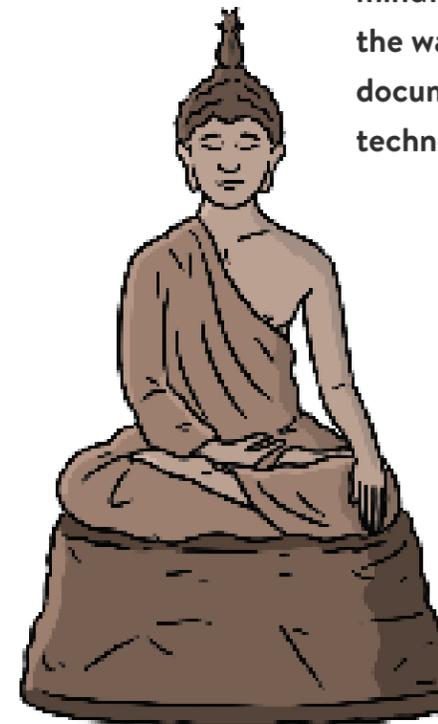
You could record a short video explaining how you felt during and after this activity. Were you successful in stilling your mind? How could the development of mindfulness be of benefit?

Why not...

- Find a quiet space where there is little chance of you being disturbed.
- Sit quietly and breathe normally. Try to focus on the sensations of your breath in your lungs and airways.
- Carry on the day in a mindful way. Try eating a sandwich mindfully, or having a mindful bath.

FUN FACT

As well as reducing stress, MRI brain scans show that mindfulness meditation can reduce pain by changing the way the brain registers pain. There are even well documented examples of people using meditation techniques to control pain during major operations!



This statue of the Buddha was made in the late 1400s or early 1500s in Thailand.

WEIRD WORD SEARCH

“

CANAANITES DIDN'T WRITE THEIR LANGUAGE IN SYMBOLS THAT REPRESENTED WORDS OR IDEAS, THE WAY THE CHINESE AND EGYPTIANS DID. INSTEAD THEY CAME UP WITH A SYSTEM OF SYMBOLS THAT REPRESENTED THE SMALLEST POSSIBLE SOUND UNITS IN SPEECH. ”

Absolutely Everything!, pages 161–62

Background

The languages developed by the Chinese and Egyptians were made up of hundreds of visual symbols to represent ideas or words, making them very difficult to learn. Only trained scribes were able to record events, meaning that literacy was limited to one sector of society.

The Canaanite alphabet consisted of just twenty-two symbols to represent the smallest possible sound units in speech. From these twenty-two sounds, any combination could then be made allowing the writing of exact words. This first alphabet consisted only of consonants, requiring the reader to guess the vowels.

This alphabetic way of writing was quick to catch on. And because it was used by traders, it spread to other cultures like wildfire. Eventually it was adopted by the Greeks who added vowel sounds to it, making it far easier to decipher.

Your challenge

Can you decipher the names of the other six civilisations explored in this chapter using an alphabet written without vowels? They are hidden in the word search below.



The answers can be found at the bottom of page 35.

Why not...

- Note down the names of the civilisations covered in this chapter as you read.
- Remove the vowels and find the civilisations hidden in the puzzle.
- Have a try at creating your own vowelless word search puzzle using key words from the chapter. Choose one of the following themes for your vowelless word search: inventions; battles; rulers; animals.



The Phoenician alphabet, a Canaanite language, had just twenty-two symbols. This meant it was easier for people to learn than other alphabets, which had hundreds of symbols.

FUN FACT

Vowels are fantastic! Just think of how many more sounds vowels can make than the simple six letters they represent. Why do car and cat sound so different? In British Sign Language each vowel sound is represented by pointing to a particular finger on the left hand. Starting with “A” at the thumb, moving round and finishing with “U” at the pinky.

TELL IT WITH A TOTEM

“

THE NATIONS OF THE PACIFIC NORTHWEST OF NORTH AMERICA CARVED TOTEM POLES FROM LARGE CEDAR TREES. TRADITIONALLY, EACH CLAN, OR EXTENDED FAMILY, PLACED ITS POLE AT THE FRONT OF ITS LONGHOUSE.

”

Absolutely Everything!, page 194

Background

The pages of Chapter 9 take us on a whirlwind tour of some of the great civilisations. History has left plenty of clues from which to try to build the picture of what made these people tick.

Totem poles are generally associated with North America, especially the Pacific Northwest. Commonly made of wood, it is difficult to find a totem that is more than 150 years old as they simply rot away. There are however records clearly describing them dating from the 1700s and it is likely they were made quite some time before then. The Native Americans used them as a way of communicating about many aspects of their existence including life and death, wealth, family, bravery, religion and history.



Your challenge

Imagine you are the sole survivor of a recently discovered civilisation. You have been invited to speak at a world congress. You have been asked to bring something to show the congress and you have chosen your totem pole. It consists of six different sections, each one representing a different event or belief that is special to your civilisation. Sketch out your totem pole and then prepare and deliver your speech to the assembled audience.

Why not...

- Think of aspects that affect your life (food, family, lifestyle, beliefs, etc.), as well as amazing events from the past that your people choose to remember and pass down to younger generations. Prepare a totem pole section for each.
- Practise your speech! A dog, cat, cuddly toy or even a mirror make excellent practice partners.

FUN FACT

The world's tallest totem pole carved from a single tree is thought to be in McKinleyville, California. Standing a whopping forty-nine metres tall, it is made from a 500-year-old redwood tree.

The nations of the Pacific Northwest of North America carve totem poles from large cedar trees. Traditionally, each clan, or extended family, placed its pole at the front of its longhouse. The symbols carved into the pole and their order on it tell of a mythical or real event. This is an illustration of the Thunderbird house post that stands in Stanley Park in Vancouver, British Columbia, Canada.

PAPER ART

“

IT'S TRICKY TO IMAGINE
A WORLD WITHOUT PAPER.
WE USE IT TODAY FOR
EVERYTHING FROM BOOKS
AND MAGAZINES TO TEA
BAGS AND TOILET ROLLS.

”

Absolutely Everything!, page 204

Background

Read all about the marvellous invention of paper and the development of techniques to manufacture it on pages 204–8.

Before paper, people would draw images and write on clay, slate, parchment, papyrus, wood and even silk. The invention of paper by the Chinese brought about a revolution in the spread of knowledge around the world. Thanks to the ability to record information, pass it around and study it, many more people were able to become educated.

But paper is not just a writing material. The ancient Japanese art of origami uses simple folding of paper sheets to create astonishing objects ranging from basic dogs and flowers through to complex dragons and super complex toys and models. There are many other forms of paper art that you can try including papel picado and quilling.

Your challenge

Make some beautiful paper art trying these techniques. A great starting point is an origami dog, a flower or a boat.

Why not...

- Borrow a book on paper art from your library – there are plenty of books on the subject.
- Search for an online video tutorial on origami or other techniques. The best tutorials are the ones aimed at children.
- Experiment with different paper types. Try newspaper or baking parchment.

FUN FACT

The fastest time to make 100 origami cranes is 40 minutes 35 seconds, and was achieved by Yoneyama Yuichi in Japan. *Guinness World Records* documents dozens of entries for origami including the most folds, and the biggest and smallest creations – take a look!

In 751 CE, Muslim forces captured Chinese prisoners who taught them how to make paper. Papermaking then spread across the Muslim world. Scholars would meet at the House of Wisdom in Baghdad and translate ancient texts into Arabic and shared knowledge and scientific ideas.



SANITATION STINK



“

CHRISTIAN EUROPE WAS NOW SURROUNDED. TO THE NORTH LAY ICE, TO THE WEST AN OCEAN THAT SEEMED TOO VAST TO NAVIGATE. THE EAST AND SOUTH WERE FIRMLY IN THE HANDS OF ENEMY MUSLIM TRADERS AND RULERS. IT'S FAIR TO SAY THAT CHRISTIAN EUROPE WAS BADLY IN NEED OF A MIRACLE.

”

Absolutely Everything!, page 247



Background

The medieval period was a rough time for many European people. Under the shadow of the bubonic plague, numerous conflicts, failing crops and a depleted population, disease spread quickly through the poorly fed, weakened people. Read about this miserable era on pages 226–242.

Rats have often been blamed for the spread of the bubonic plague, but the truth is that the poor hygiene conditions of the time meant that society was ripe for an epidemic of one sort or another.

Unlike Rome with its sophisticated sewage and water systems, English medieval towns were filthy places. Rubbish and human waste were left to rot in the street, rats and fleas were rampant, and germ theory was far off in the distant future. Water was often kept in dangerous lead lined tanks and became a stagnant breeding ground for bacteria.



Your challenge

Take the role of a modern hygiene inspector. You have been transported back to medieval London and have to file a report on the city. What breaches of good hygiene practice can you find in the shops, kitchens, streets, homes, barber surgeons, etc.?

You might like to suggest ways in which improvements could be made in order to benefit the health and living conditions of the inhabitants.

Why not...

- Carry out some additional research on medieval living conditions. The BBC Bitesize website provides a good starting point.
- Show you have thought about different areas of hygiene including food storage and preparation, water, sanitation and personal hygiene practices. Write about some of the most disgusting things you have found on your medieval London tour!
- Explain how small changes could make big improvements to health.
- Think about how best to present your report. What structure would make most impact?

FUN FACT

The World Health Organisation promotes hand washing as one of the key ways to prevent the spread of disease and combat antibiotic resistance. They recommend humming the “Happy Birthday” tune twice while you are washing your hands to make sure you have scrubbed thoroughly enough!



GOING FOR A GALLEON

“

IN THE AUTUMN OF 1620 A GROUP OF JUST OVER 100 ENGLISH PEOPLE SET OFF WITH THEIR FAMILIES ON A DANGEROUS ONE-WAY VOYAGE ON BOARD ONE OF THE MOST FAMOUS SHIPS IN HISTORY. IT WAS CALLED THE MAYFLOWER. ”

Absolutely Everything!, page 267

Background

Galleons have formed the basis for many stories as well as factual events. Tales of pirates and smugglers, with swashbuckling characters swinging from ship to shore make the life of a sailor seem romantic and exciting.

Despite the beauty of the vessel, life on board would have been tough, especially on extremely long voyages, and many of those who set out did not return home.

Galleons were large sailing ships used as warships as well as for trade or treasure-seeking. They had several decks, three or four masts and many sails. The galleon was a feat of technological craftsmanship. Made of various types of wood and with a complicated construction, they required skill to sail. They were often extremely elegant with beautiful lines and were intricately decorated.

Your challenge

Produce an accurate drawing of a galleon either in 3D or in plan form ... or both! Drawing a galleon is a great challenge of design, perspective and imagination.

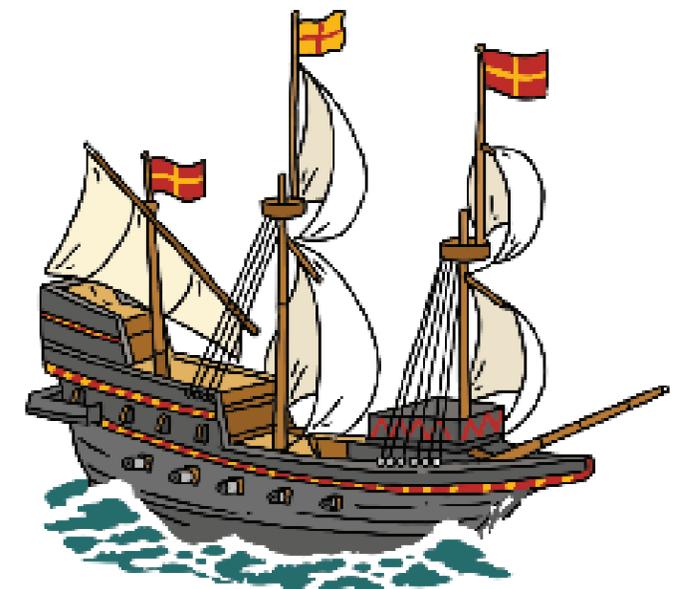
Why not...

- Use plenty of reference data. For example, you could watch *Pirates of the Caribbean*.
- Use a large piece of paper, at least A3, to make a really impressive drawing.
- Consider drawing a section of your galleon so that the inside is visible.
- Annotate your drawing to indicate materials and any other important details.

FUN FACT

Galleons often had fighting platforms built half way up the mainmast and foremast. When an enemy ship attempted to board a galleon, archers from these platforms would release a shower of arrows and crossbow bolts into the attackers!

Another famous galleon is the Golden Hind. Sir Francis Drake captained the vessel and circumnavigated the globe between 1577 and 1580.



MOTOR MADNESS

“

MACHINES WERE NOW CHANGING EVERY WALK OF LIFE. BUT IF YOU HAD TO CHOOSE ONE THAT MADE THE BIGGEST DIFFERENCE OF ALL, MY GUESS IS THAT MANY PEOPLE MIGHT VOTE FOR THE MOTOR CAR.

”

Absolutely Everything!, page 289

Background

The image of Bertha Benz on page 289 gives us an indication of what can be achieved with an idea and determination. Look out! Cars are coming!

Chapter 13 covers an astonishing period of scientific progress, ranging from Copernicus observing the skies through to the industrial revolution of the Victorian era.

In the 1900s electricity was the main power source for cars, and electric vehicles briefly dominated the roadways. Transport has changed hugely since then but now we are becoming increasingly aware of the damage petrol and diesel cars and airplanes may be causing to both people and our planet. Should we have done it all differently?

Your challenge

You have won a global competition and the prize is to be teleported back in time to the 1900s to meet Mr Henry Ford, creator of the mass-produced petrol engine car. You have one morning and one presentation to convince him and all the managers to pursue electric power and “park the petrol” by telling them what will happen to the world if they succeed in making petrol cars affordable to everyone.

Why not...

- **Picture yourself in a grand room surrounded by business people. Think of how your words can spark their interest; what would they be interested in?**
- **Think of any supporting evidence from the future – charts, images, testimony – to help you build your case.**
- **Learn your subject and then try to speak with passion without using notes.**

Henry Ford applied mass production techniques to cars. His factories built more than 16 million Ford Model Ts between 1908 and 1927. New roads were built by governments keen to support people’s passion to travel wherever and whenever they chose.

FUN FACT

The need to travel further distances was one of the key reasons for the switch from electric to petrol motors in the 1900s. Today the Tesla Model S can now travel as far as 669 miles on a single charge! Time to switch back?



CASUALTY NUMBER CRUNCH

“

...THE TIME BETWEEN 1845 AND 1945 SEEMS TO ME TO HAVE BEEN THE MOST BRUTAL. FOR REASONS THAT I FIND HARD TO WORK OUT, APPALLING VIOLENCE AND FIGHTING BETWEEN HUMANS ERUPTED IN ALMOST EVERY PART OF THE WORLD.

”

Absolutely Everything!, page 297

Background

Invasion, colonisation, uprisings, civil wars, two world wars and the atomic bomb... Read pages 297–313 to get an idea of the destruction conflicts wrought between 1845 and 1945.

Why did so much devastation happen during these 100 years? Increased population is partly the cause. Also, improvements in military technology gave people the capacity to do much greater harm in a much shorter space of time. Rapid loading rifles, explosives, rapid fire artillery, machine guns, mines, torpedoes, submarines, aeroplanes and the first nuclear weapons all appeared in this period.

This fire power was supported by vast improvements in logistics and communication. Munition production was large scale, and uniforms, vehicles, tents and other essential supplies could also now be mass produced and delivered to the frontline with greater speed.

These technological advances led to many terrible years of warfare and a huge impact on humankind. Calculate just how devastating this era was in your challenge.



The Japanese Navy used the Nakajima B5N carrier-borne torpedo bomber, nicknamed 'Kate', during World War II.

Your challenge

Research the length of the six conflicts in this chapter and the total death toll for each. Work out the average number of deaths per year, then per month. If a month had thirty days, can you work out an approximate daily death toll for each conflict?

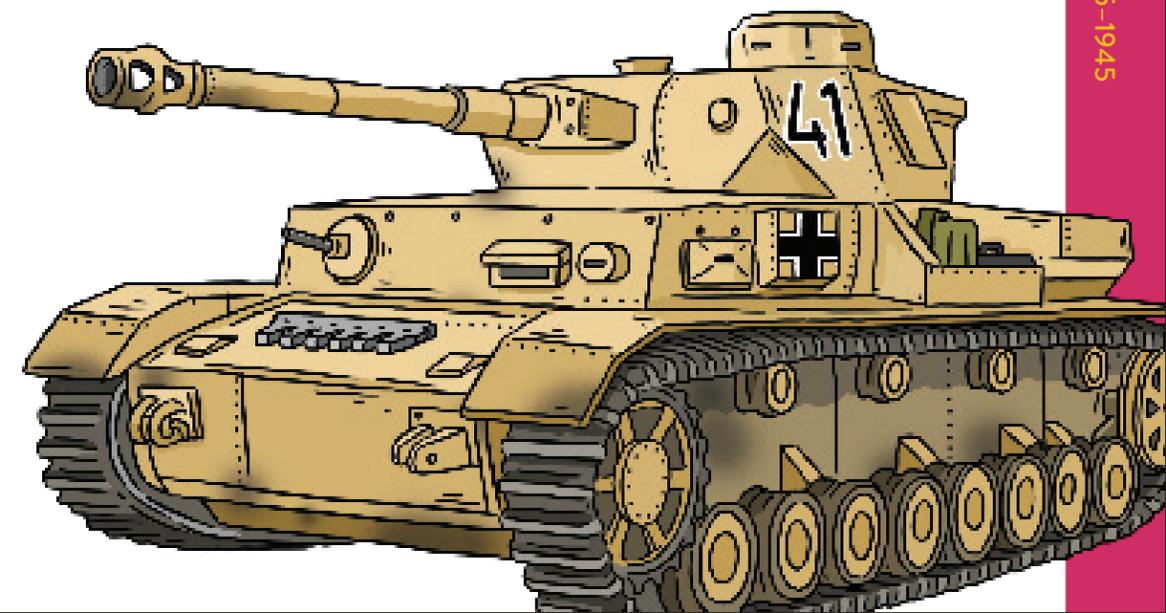
Why not...

- Present your calculations in a table.
- From the data, reach a conclusion about which conflict was the most brutal.
- Pick a more recent conflict. Apply the same calculations in order to make a comparison with the conflicts in this chapter.

FACT

In 2014 artists Paul Cummins and Tom Piper created 888,246 ceramic poppies to represent the number of British military deaths in the First World War. They filled the moat of the Tower of London.

The Panzer IV was the workhorse of the German tank force during World War II. More than 8,000 were built between 1939 and 1945.



TIME TRAVELLER

“

WHATEVER HAPPENS NEXT, ONE THING IS CERTAIN: THE FIRST ONE-THOUSANDTH OF A SECOND IN A BRAND-NEW DAY IS BOUND TO BE AN EXHILARATING, INCREDIBLE MOMENT...

”

Absolutely Everything!, page 337

Background

The final chapter in the book is simply the place where the next chapter will begin. The point from which you take over as a steward of our precious planet.

Our world is changing at an astonishing rate. You have encountered many stories from the past as you have travelled through this book and as citizens of planet Earth it is your duty to learn from history and to help inform those in the future.

Nothing can beat the discovery of well-preserved objects that tell us fascinating things about how our ancestors lived, for example the Pharaohs and their pyramids, the Terracotta Army, and the ruins of the complete city of Pompeii that was tragically buried under volcanic ash.

Imagine if you had the chance to interview somebody who lived 100 years ago, I am certain you would have 101 questions. You might ask why we allowed the atomic bomb to be invented. Or why we let our planet become swamped in plastic waste. You might ask what music they enjoyed. Did they go to school? What did they have for breakfast?



United Nations flag

Your challenge

Make a time capsule. Assemble a collection of artifacts for somebody to discover 100 years from now and put them in an airtight waterproof container. You might select objects and writings from your daily life, electronic data (maybe a USB stick?), information about articles that you consider valuable (how about trainers?), perhaps even a map of the area or a photo of your family. Use a permanent pen to ensure everything is clearly dated, marked and described.

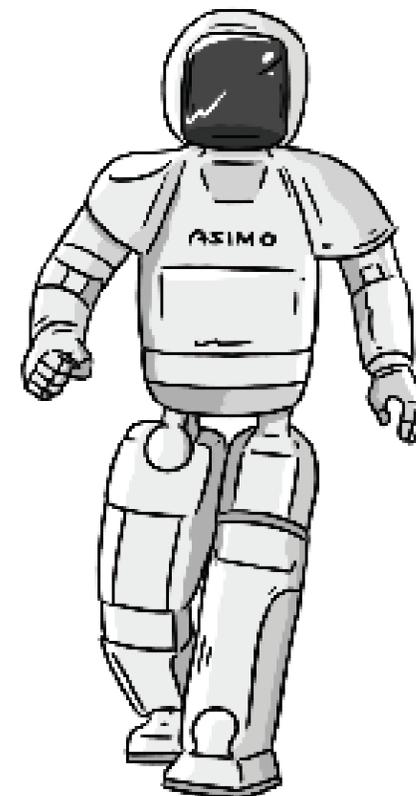
Hide or bury the capsule and rest happy in the knowledge that you have added to the great story of our planet.

Why not...

- Be thoughtful about the contents – choose to provide future understanding to archaeologists.
- See if you can bury your time capsule (with permission from the land owner) at least half a metre deep.
- Resist temptation to open it up once you have sealed it!

FUN FACT

Confucius, the great thinker discussed on pages 140–42, said, “Study the past, if you would divine the future.”



Honda's Asimo robot (left) can walk, climb stairs and interact with people. Future robots with artificial intelligence might be so life-like that we won't be able to tell if we're speaking with a robot or a person.

The coded message on page 16 is: ALWAYS BE CURIOUS AND INVESTIGATE
Civilisations in the word search on page 21 are: GRKS (Greeks), RMNS (Romans), GYPTNS (Egyptians), NTFNS (Natufians), PHNCNS (Phoenicians) and MCDNNS (Macedonians).