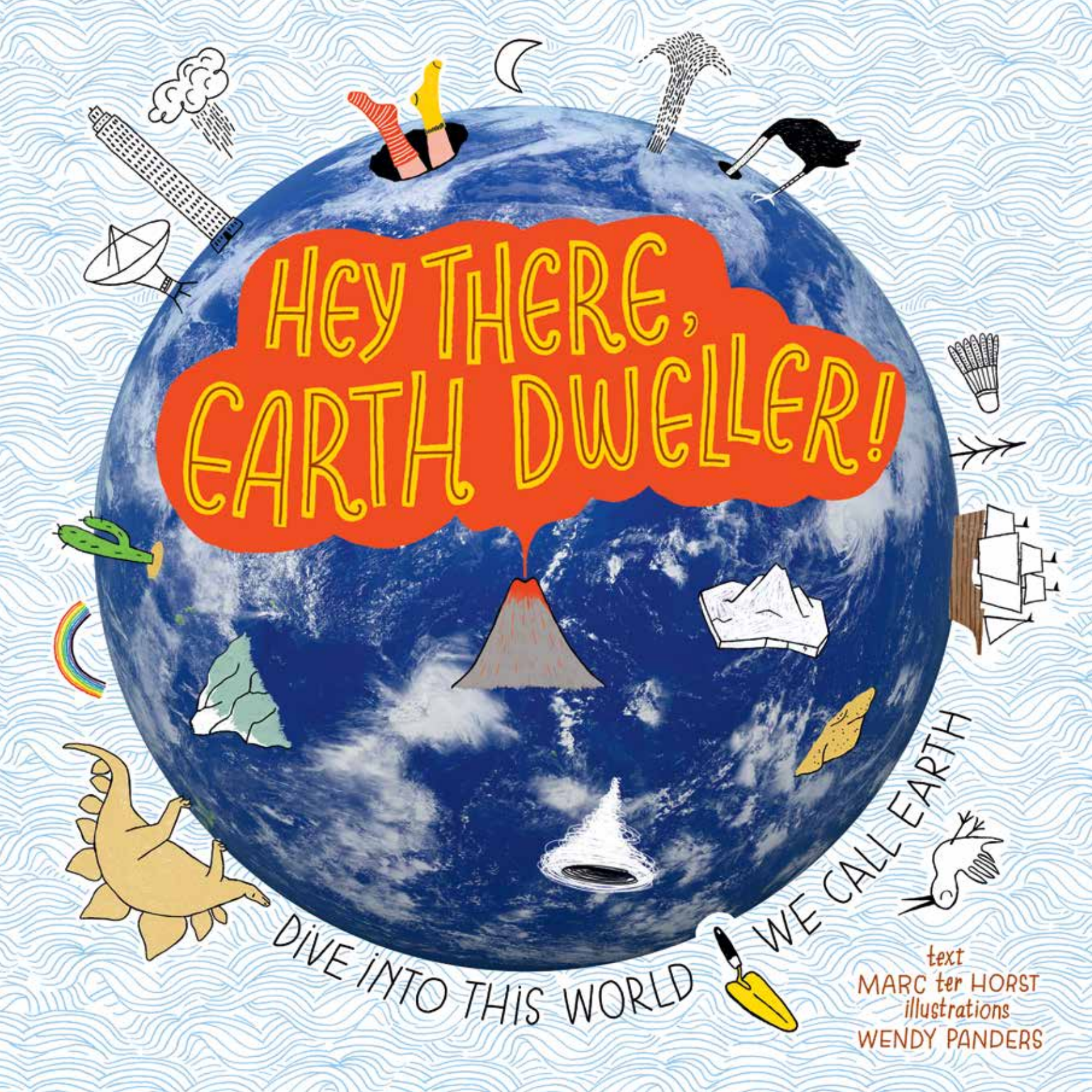

text
MARC ter HORST
illustrations
WENDY PANDERS


Groenland
Canada
Noord-Amerika
Chicago
New York
Death Valley
Antelope Canyon
Grand Canyon
Atlantische Oceaan
Grote Oceaan
Haïti
Mexico
Venezuela
Suriname
Armero
Zuid-Amerika
Peru
Andes
Aconcagua
Argentinië
Spitsbergen
Noordelijke IJszee
Nova Zembla
Noordkaap
IJsland
Eyjafjallajökull
Rusland
Europa
Azië
Greenwich
Alpen
Vesuvius
China
Zuid-Korea
Sendai
Tokio
Perzië
Himalaya
Mount Everest
Algerije
Sahara
Nijl
White Desert
Ganges
Bangladesh
Mekong
India
Timboektoe
Niger
Tsjaad
Tsjaadmeer
Afrika
Vietnam
Filippijnen
Marianentrog
Grote Oceaan
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Indonesië
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Australië
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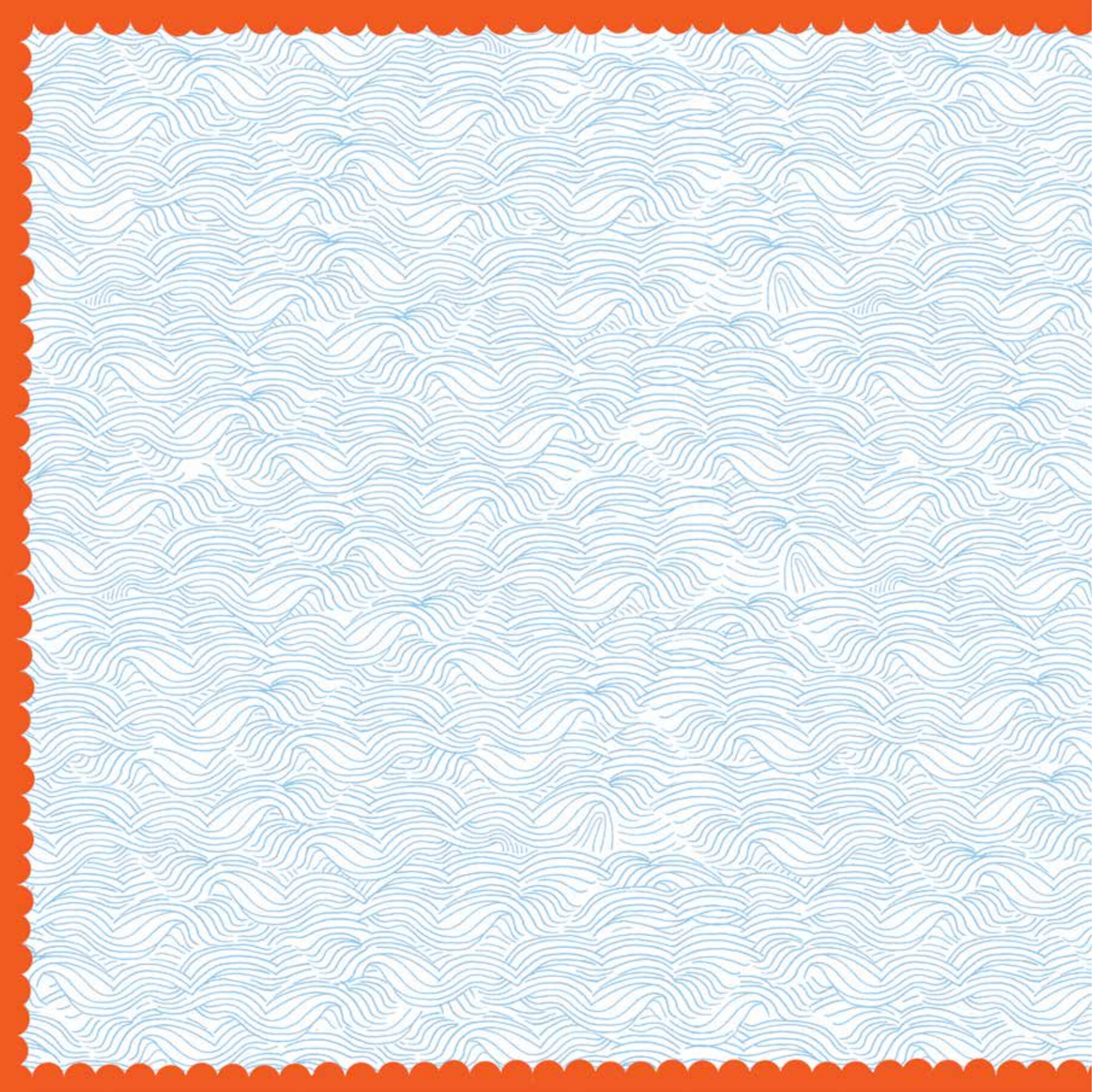
Kaap de Goede Hoop
Indische Oceaan
Tasmanië
Nieuw Zeeland




HEY THERE,
EARTH DWELLER!

HEY THERE, EARTH DWELLER!

text
MARC ter HORST
illustrations
WENDY PANDERS

GOTTMER
Haarlem

Voor Simon en Aniek (en hun oma's en opa's)

Kijk voor meer informatie over de kinder- en jeugdboeken van de Gottmer Uitgevers Groep op www.gottmer.nl

Ontwerp en opmaak: Wendy Panders
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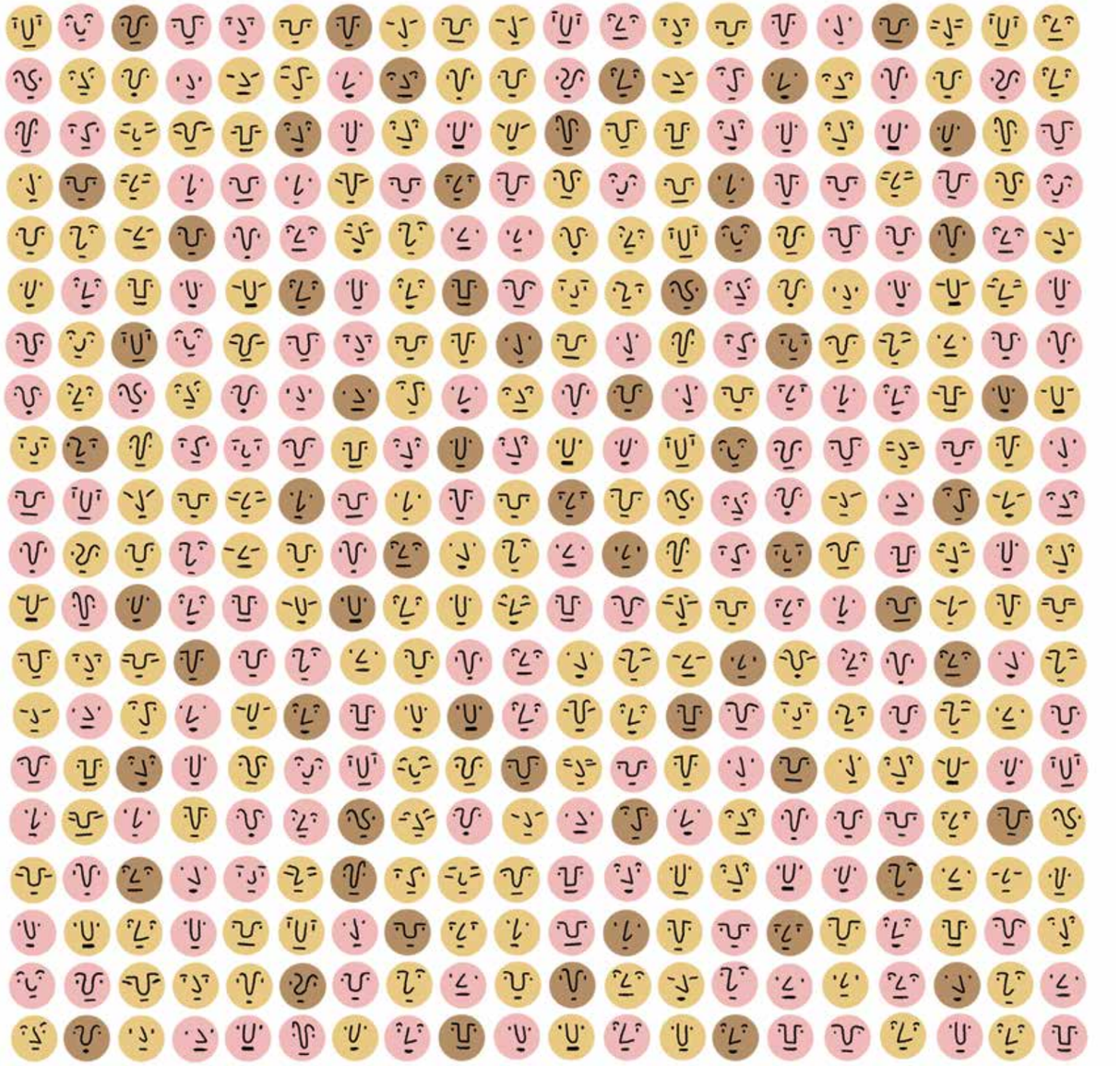
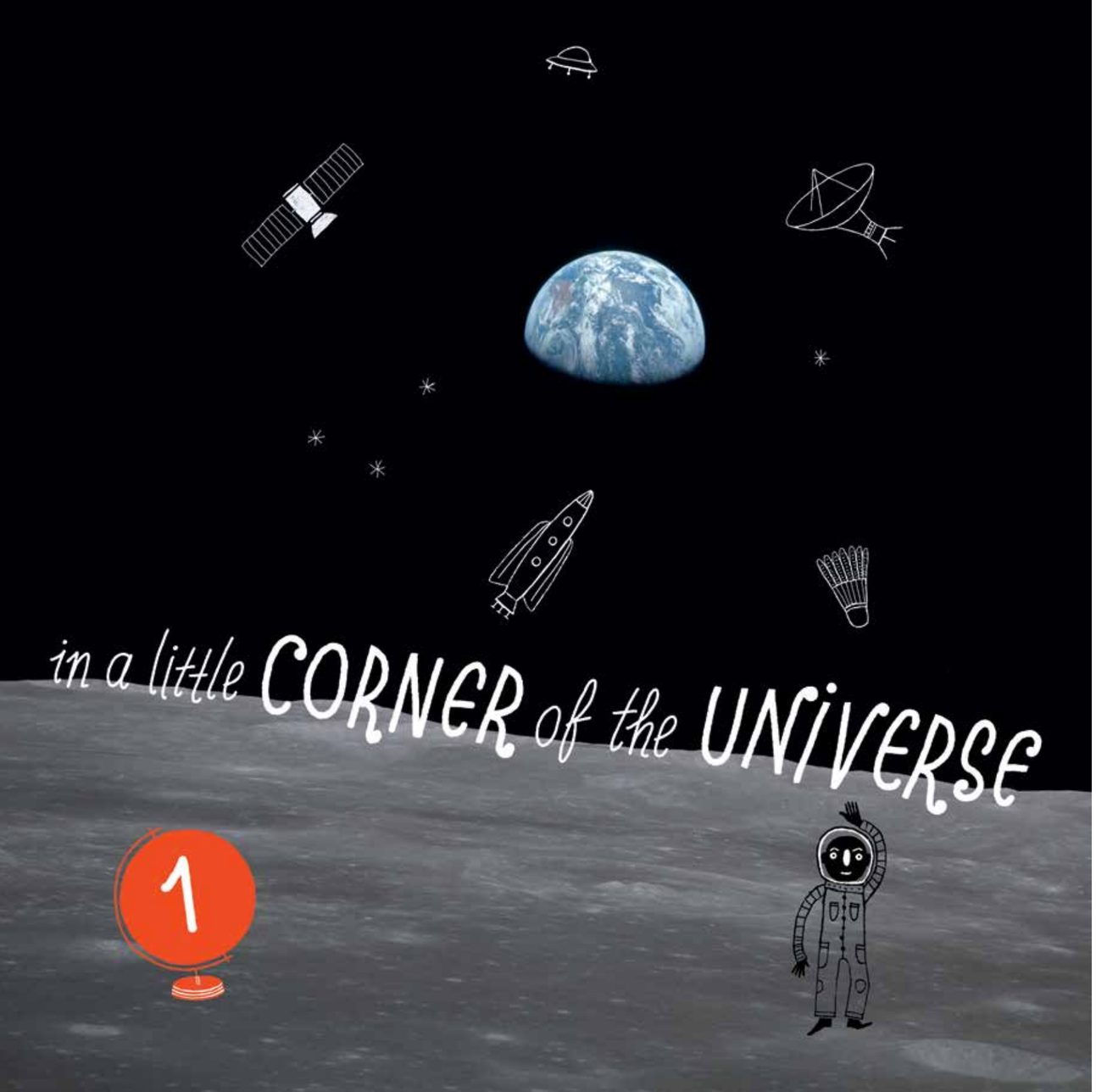


Hey There, Earth Dweller!

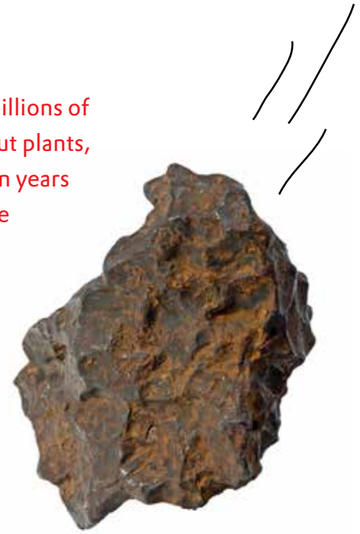
Take a look under your feet. What have we here? You can shake your feet, but you cannot shake it off. You can take off your shoes, but still you're stuck to it. Elephants, trains, ladybugs, oceans… they are all stuck to the Earth. This is what we call gravity. Really, you can jump up and down, but you will drag this planet along for the rest of your life. High time to get properly introduced.

Did you know that in many kitchens a slab of solidified magma is used as a kitchen countertop? That squids climbed Mount Everest long before sir Edmund Hillary did? That the Sun is closer to the Earth in our winter than in our summer? That the sea is full of mammoth bones? That climate change is really nothing new? That there are caves where dogs collapse and die while for people it is just a walk in the park? That you might just have stegosaurus-pee in your drinking glass? If you can answer all these questions with 'yes', then pass this book to an Earth dweller near you. If not, then just read it yourself.



It started with a tiny lump

There once was a time when there was no earth. Can you imagine? For billions of years the universe managed without our Sun. Without our planet, without plants, without animals and… without you. But that all changed about five billion years ago. Just imagine that someone had installed a hidden camera and that we could now play this movie at super speed. What would we see?



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Bang! A star explodes. Gas and dust are hurled into space, as one big swirling cloud. This dust gathers together, just like the dust-traps under your bed. And so more and more little lumps start floating around in the cloud. Little lumps tend to stick together and grow. The biggest lumps collect the most particles and become bigger and bigger. In the end a giant, hot ball is created in the centre: the Sun. Around it, a disc of small and large particles remains – heavier particles close to the Sun and lighter particles further away.

>>

The heavier particles clot together and form four small, rocklike planets: Mercury, Venus, Earth and Mars. Further on, four larger planets of gas and ice are formed: Jupiter, Saturn, Uranus and Neptune. Leftover rocks race around in between. Look over there! A rock as big as Mars crashes into the Earth. This is probably how the Moon was formed: after the collision the debris formed a big ball that you can still see in the sky billions of years later.

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Newly born planet Earth smells of rotten eggs. Sulphuric vapour rises from a sea of lava. A lot of stones and rocks are still floating around through space. Meteorites crash into the Earth with great force. The energy that is released keeps the surface hot and syrupy. But these meteorites also deliver ice to the Earth. This ice melts as soon as it hits the Earth and the water makes the atmosphere more dense. Slowly the Earth cools down and the liquid surface now has a crust. This crust cracks in different places and pieces of the Earth's crust start floating around restlessly.

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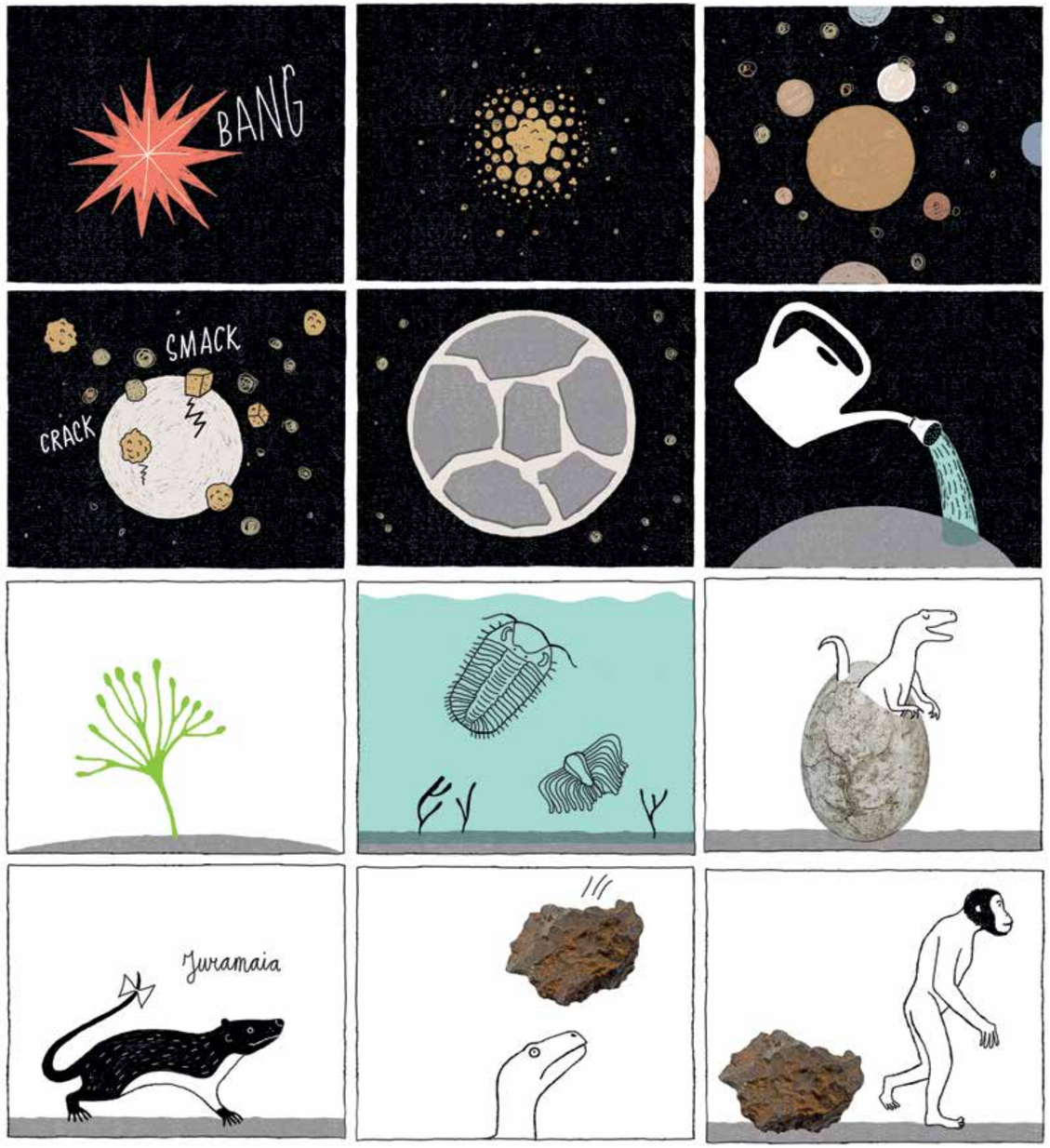
For millions of years it just rains and rains. Then, if we zoom in very closely, we see the first living creatures come to life. They live on carbon monoxide (CO_2) and produce oxygen, just like plants are still doing now. For millions of years more and more oxygen comes into the air and less and less CO_2 remains. Gradually the air starts to resemble the air we still breathe today. It is the bottom part of a layer of gases which surrounds the Earth: the atmosphere. You will soon notice how important the atmosphere is. For one thing it prevents the most harmful rays of the Sun from reaching the Earth.

>>

Thanks to the atmosphere other forms of life join the algae and plants. Forms that love oxygen more than CO_2: animals. The first animals appear in the sea. They look a bit like Spongebob Squarepants, just not with pants and a tie. Meanwhile, pieces of the Earth's crust are still drifting around. The first dinosaurs arrive at the scene, then the first mammals. Bam! Another rock hits the Earth. Almost all dinosaurs become extinct and the mammals take their chance. Some start walking on their hind-legs. They might very well have been your ancestors…

The Earth in a day

If we could press the history of the Earth into one day, then you would understand how old our planet really is.
00.00 'o clock: the Earth is born.
00.08 'o clock: the Moon is formed.
03.30 'o clock: around this time the first life appears.
05.30 'o clock: the first algae make oxygen.
21.15 'o clock: the first shellfish and fish arrive.
22.00 'o clock: the first animals go ashore.
22.50 'o clock: the dinosaurs take over.
23.40 'o clock: the dinosaurs become extinct.
23.59 'o clock: the first humans appear.
23.59 'o clock en 57 seconds: the first modern people are living in Africa.
23.59 'o clock en 59 seconds: the people start roaming the Earth, but no man has even thought of farming yet, let alone pyramids, steam engines or the internet.



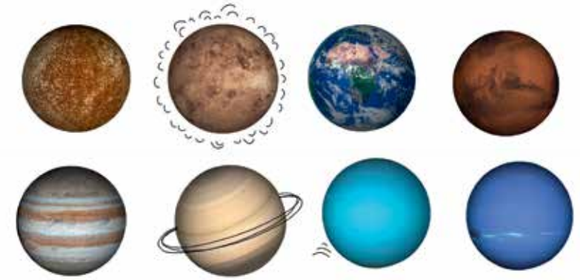
Visiting the neighbours

At about the same time the Earth came into being, the rest of our solar system formed. It is a colourful collection of planets, moons and less round celestial bodies. Some planets look a little bit like the Earth, but actually, there are mostly differences.

The Earth in numbers

- The largest circle around the Earth is over 40,000 kilometres long. This is the equator, which divides the Earth into the northern hemisphere and the southern hemisphere. If you went on a walk around the equator, it would take you almost a year, with no breaks.
- The highest place on Earth is the top of Mount Everest (8848 metres) and the deepest place is the bottom of the Mariana Trench (about 11 kilometres under water).
- The coldest place on Earth is in Antarctica, where temperatures as low as -89 degrees Celsius have been measured. The hottest place on Earth is Death Valley in the United States, where temperatures may soar to 56 degrees in the shade. The average temperature on Earth is 14 degrees.
- The Earth zooms around the Sun at 107,000 kilometres an hour. This takes about a year. The average distance to the Sun is almost 150 million kilometres. Our Moon circles the Earth at some 382,400 kilometres.

Mercury is full of craters, just like our Moon.
Venus has a thick and poisonous blanket of clouds.
Earth: just look out the window.
Mars has a red-brown colour because of all the rusty iron in its soil.
Jupiter can be identified by the colourful rings of clouds.
Saturn is famous for its beautiful rings.
Uranus is on its side: the planet doesn't spin, it rolls.
Neptune is the furthest planet, even bluer than the Earth.



Large and small

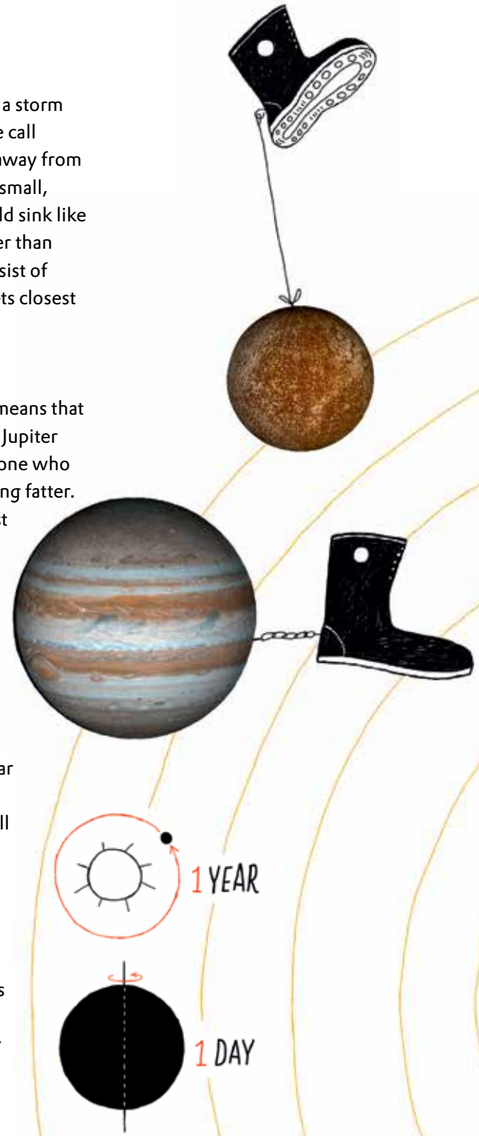
The Earth fits into Jupiter, the largest planet, about 1300 times. On Jupiter a storm has been raging for centuries, which alone is twice as big as the Earth. We call Jupiter, Saturn, Uranus and Neptune giant planets. They are the furthest away from the Sun. These four planets don't have a solid surface, but they do have a small, solid core. For the most part they consist of gas and ice. A space ship would sink like a brick if it ever tried to land there. The Earth itself is eighteen times bigger than Mercury, the smallest planet. Mercury, Venus, the Earth and Mars all consist of solid ground. This is why we call them earthly planets. They are the planets closest to the Sun.

Light and heavy

Because some planets are much larger, they also have more gravity. This means that they have a harder pull on things. A cup will fall harder to the 'ground' on Jupiter than on Earth. This is why you would weigh much more on Jupiter. Someone who weighs 35 kilos on Earth would weigh 88 kilos on Jupiter, without becoming fatter.
If you wanted to improve your personal best in high jumping, you had best go to Mars or Mercury. There, someone who weighs 35 kilos would only weigh about 13 kilos. Walking there is more like floating. Venus is rather special. There you would weigh a little less than you would on Earth, but because of the thick atmosphere the air is incredibly dense. It feels like you are 1000 metres under water. Unmanned spaceships that have landed on Venus were completely crushed within a few hours.

Short and long

If you lived on Neptune, it might never be your birthday. Over there, a year lasts as long as 165 of our years. This is because Neptune is furthest from the Sun so it takes the longest to complete one lap around the Sun. We call this a year.
It's much better to live on Mercury, because there a year only takes 87 days. We are talking about Earthly days though. The days on Mercury itself last about two months: it takes Mercury 59 days to spin around its axis. That would be quite an exhausting birthday party.
Now what about Venus? There a day takes even longer than a year. Venus circles the Sun in 224 Earthly days, but it takes 243 days to turn around its axis. Even during your birthday party you would become a year older. For an Earth dweller like you and me this is almost impossible to grasp.



Hot and cold

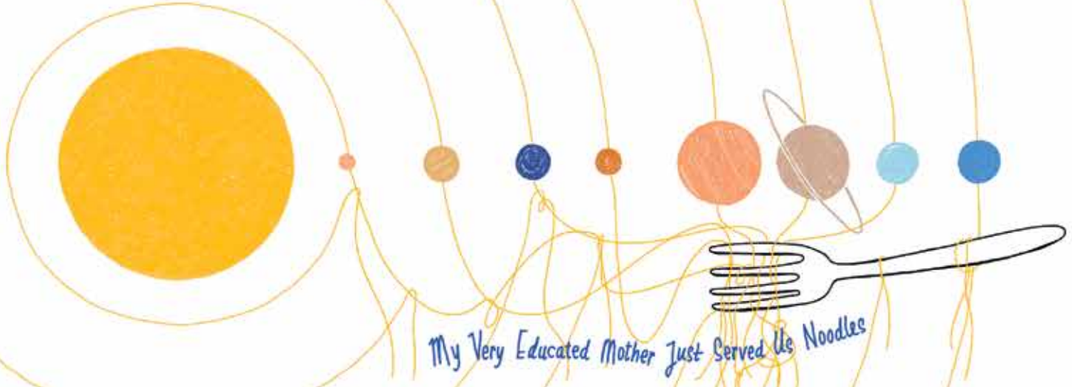
So you think a heat wave on Earth is hot? Try Mercury. There it can easily get as hot as 450 degrees. This is of course because the planet is so close to the Sun. Yet, because Mercury has no atmosphere to trap the heat, temperatures plummet to about 200 degrees below zero at night. As soon as the Sun sets, all the heat simply disappears into space.
Venus does have an atmosphere. And what an atmosphere it is: it is full of gases, mostly carbon monoxide. Just add clouds containing sulphuric acid and you have a greenhouse even the biggest sauna-fan would not want to enter. Because of this atmosphere, the temperature on Venus can rise to 480 degrees and at night it barely cools down. After Venus, the planets become colder the further you go from the Sun. Neptune is the coldest: there it is always about 200 degrees below zero.

Moons and rocks

And these are just the planets. The celestial spheres that revolve around planets (moons) are at least as bizarre. Some are tiny, others are even bigger than Mercury. Some are beautifully round while others look more like a malformed potato. Some have lakes full of sulphur, and others have volcanoes full of water. In total there are more than 170 moons in our solar system.
On top of that there is the asteroid belt somewhere between Mars and Jupiter, where millions of big rocks float around. Some are only a meter across and others are the size of an entire mountain range. They are what was left after the solar system was formed - little lumps and other bits and pieces that never became part of a moon or a planet. If you travel beyond Neptune you might bump into Pluto, a dwarf planet. Pluto is too big to be called an asteroid, but too small to be called a planet. Seen from Pluto the Sun only looks as big as the other stars, but it would be a very bright star. Still, on Pluto you would only be half way across our solar system. But beyond Pluto there is just icy, rocky rubble.

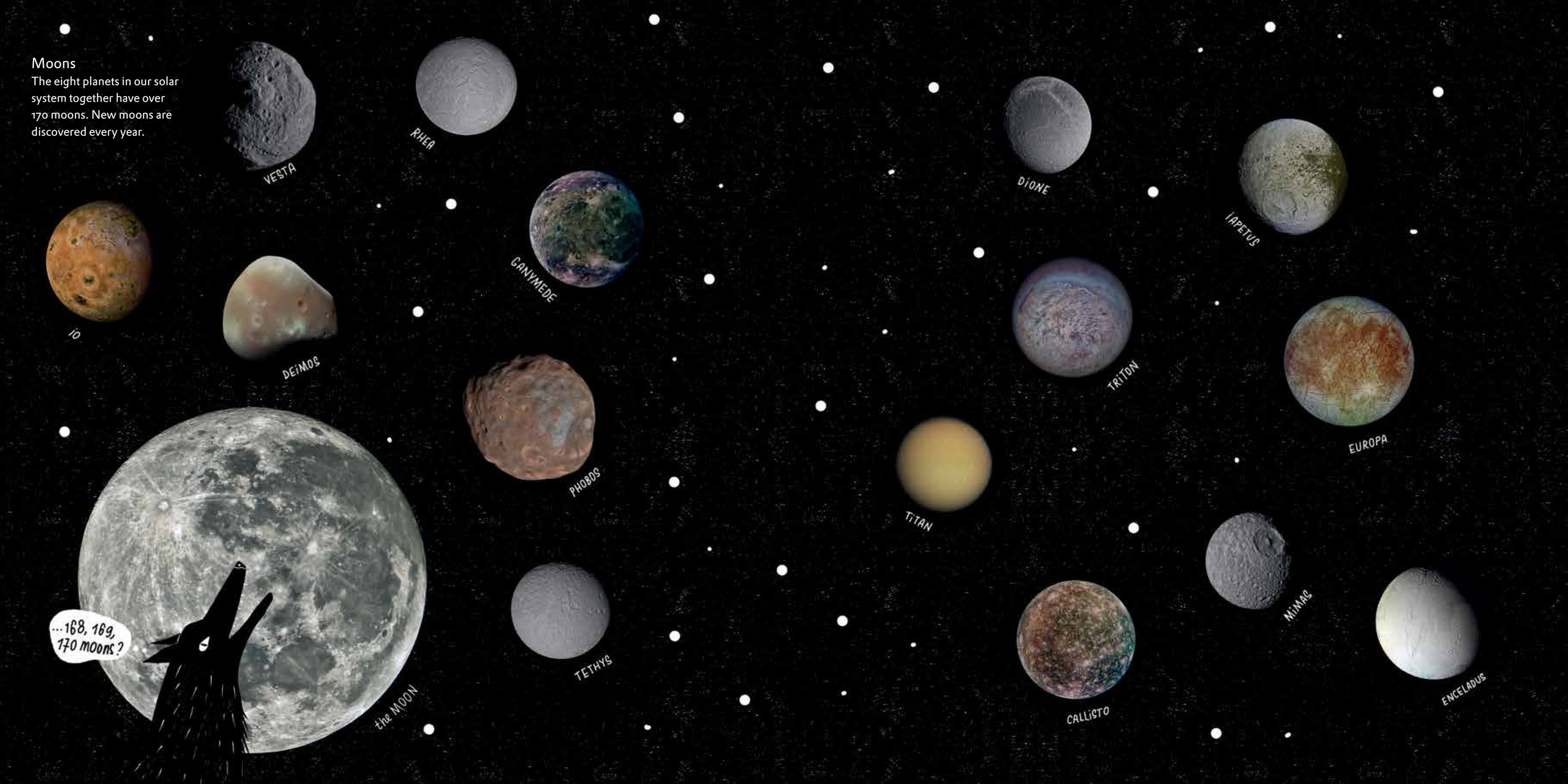
My Very Educated Mother Just Served Us Noodles

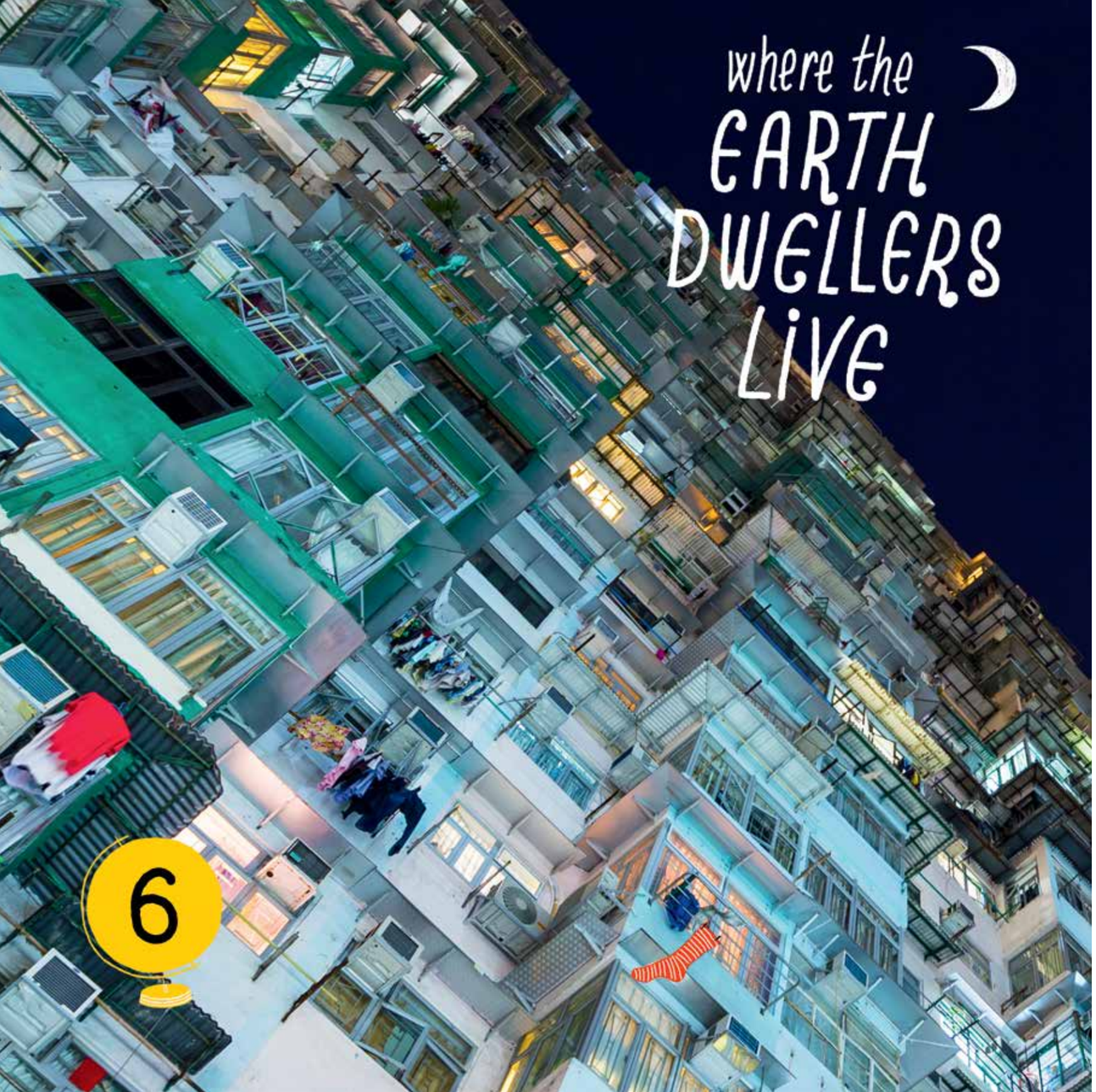
This is one of the well-known memory aids for the order of the planets. Every first letter stands for the first letter of a planet: Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune. If you also want to tell Mercury and Mars apart, you should make a reminder with two similar letters in (almost) each word. For example: Merry Veronica Eats Mars Justin Said to Uncle Ned. But I bet you can come up with something much better!



Moons

The eight planets in our solar system together have over 170 moons. New moons are discovered every year.





The first humans

Let's go back in time. 150,000 years, just the blink of an eye in Earth's history. No one knows that the Earth is actually round yet. No one has ever seen a satellite picture of our planet. And no one has to remember that Paris is the capital of France.

Save your tribe

You may know the area where your tribe lives inside out, but outside of that the world simply doesn't exist. You only know that the sun rises above the sea and sets over the mountains. You know that the deer plain is a three-day walk in the direction of your shadow – the plain where there are no deer left to be found. So you've been living off the fruit of the bush on the hillside for several moons now. But this is almost gone too. The tribe elder told you of a river behind the mountains that no one has ever crossed before. The water is probably at a lower level now, because of the dry spell. Perhaps you could make it to the other side alive. You don't have a choice: you have to try, because your tribe is starving. So you set out, taking three of the strongest boys with you. You have no GPS, no map of the area. There are no roads and no green signs to guide the way: "Fertile valley, 23km". You don't know what kind of animals you might come across: slow lizards that you can eat in one bite, or wild hyenas that are just as hungry as you are. You glance back at your skinny tribe members one last time. Their fate is completely in your hands.

Into the big wide world

That is how the first humans set off into the world. Looking for food, looking for space, fleeing the drought. As hunters-gatherers, they always walked around in the same area, but sometimes the circumstances forced them to look further. Then a whole tribe would leave their home area, or just a part of it, to prevent over-population.

The first modern humans lived in Africa about 150,000 years ago. A number of them slowly swarmed out across the Earth. They followed rivers and coastlines and ended up in Europe and Asia. It wasn't until they knew how to build good ships that they were able to reach Australia, about 40,000 years ago. North-America probably remained uninhabited for quite some time. In the latest ice age, the sea between Asia and America dried up and people could make the crossing. It took them 2000 years to wander from the north of North America to the south of South America. In 10,000 Before Christ, human kind had settled in all the continents, except for Antarctica. We think that roughly 3 million people lived on our planet at that time, about as many as are living in the city of Berlin right now.

Your ancestors

One of those 3 million people was the grandma of the grandma of
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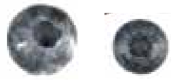
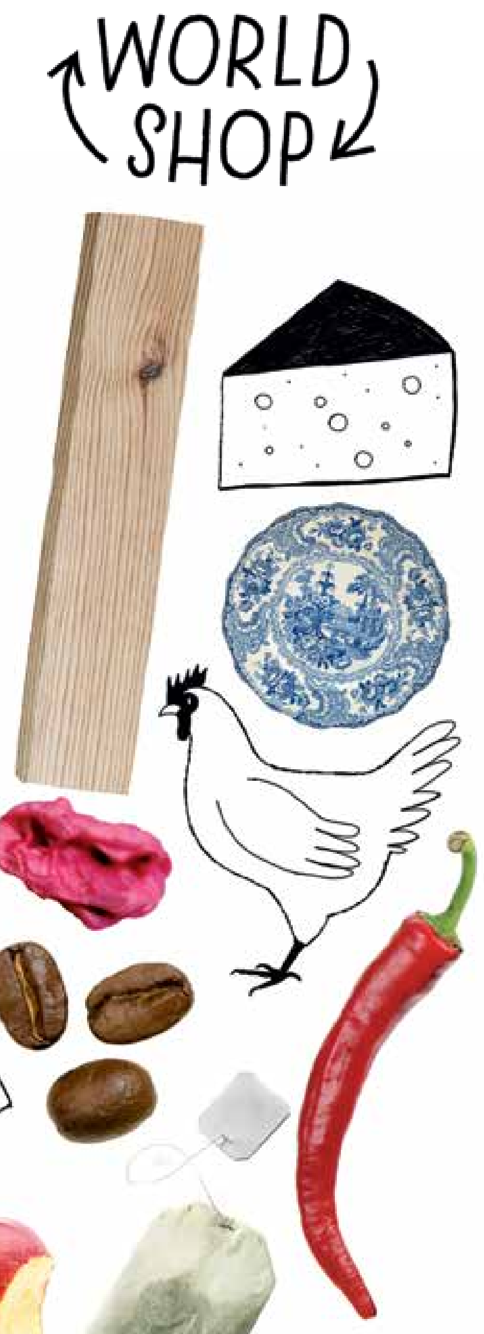
grandma of the grandma of the grandma of your grandma. And of
your grandpa of course. Do you think you look like
them?



Food around the corner

We know that your ancestors didn't get their food from the supermarket. But where did they get it from? Were they hunter-gatherers, or were they already into farming? Maybe they did a bit of both. It was around 10,000 Before Christ that the advantages of farming were discovered in several places across the world. People started keeping livestock to provide them with milk, eggs and meat. They started cultivating grain, so they'd have to spend less time searching for food. Farming became a hit all over the world. It supplied more food with less effort. People became better and better at it, they saved up the largest seeds to plant a new harvest. More and more often there would be plenty food left. This brought about big changes.
Because it was easier to get a hold of food, more children were being born and people would live longer. The world population started growing uncontrollably. There was also more time left to spend on other things than getting food. People started making tools, pottery, weapons, ships. And with those ships, they would sail out to discover the world.
After the human race had spread across the Earth in 140,000 years, they started looking each other up again. Not because they had missed each other, for they didn't even know of the others' existence. No, they did it to look for materials they didn't have themselves: dyes, oil, herbs, wood, exotics fruits. It was time for trade. It was time to discover the world.

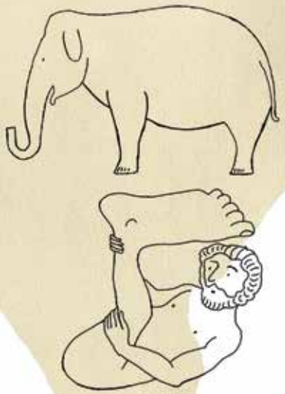


Map your way around the world!

Hello and welcome to "Map your way around the world!" the quiz in which candidates from all centuries and all countries fill in an almost completely blank world map. Let's go over the rules one more time:

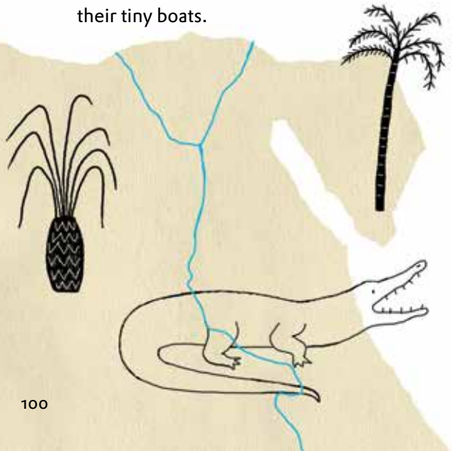
1. Everyone starts in their own country.
2. Candidates can use all types of transportation they have.
3. You earn points with every area you can put on the map.

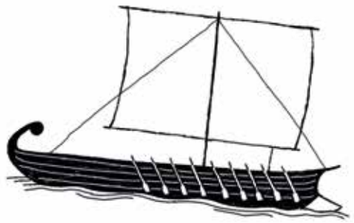
Egypt, Polynesia, Portugal, Vikings and everyone else… are you ready? Let's have a look at the first world map!



10,000 B.C.

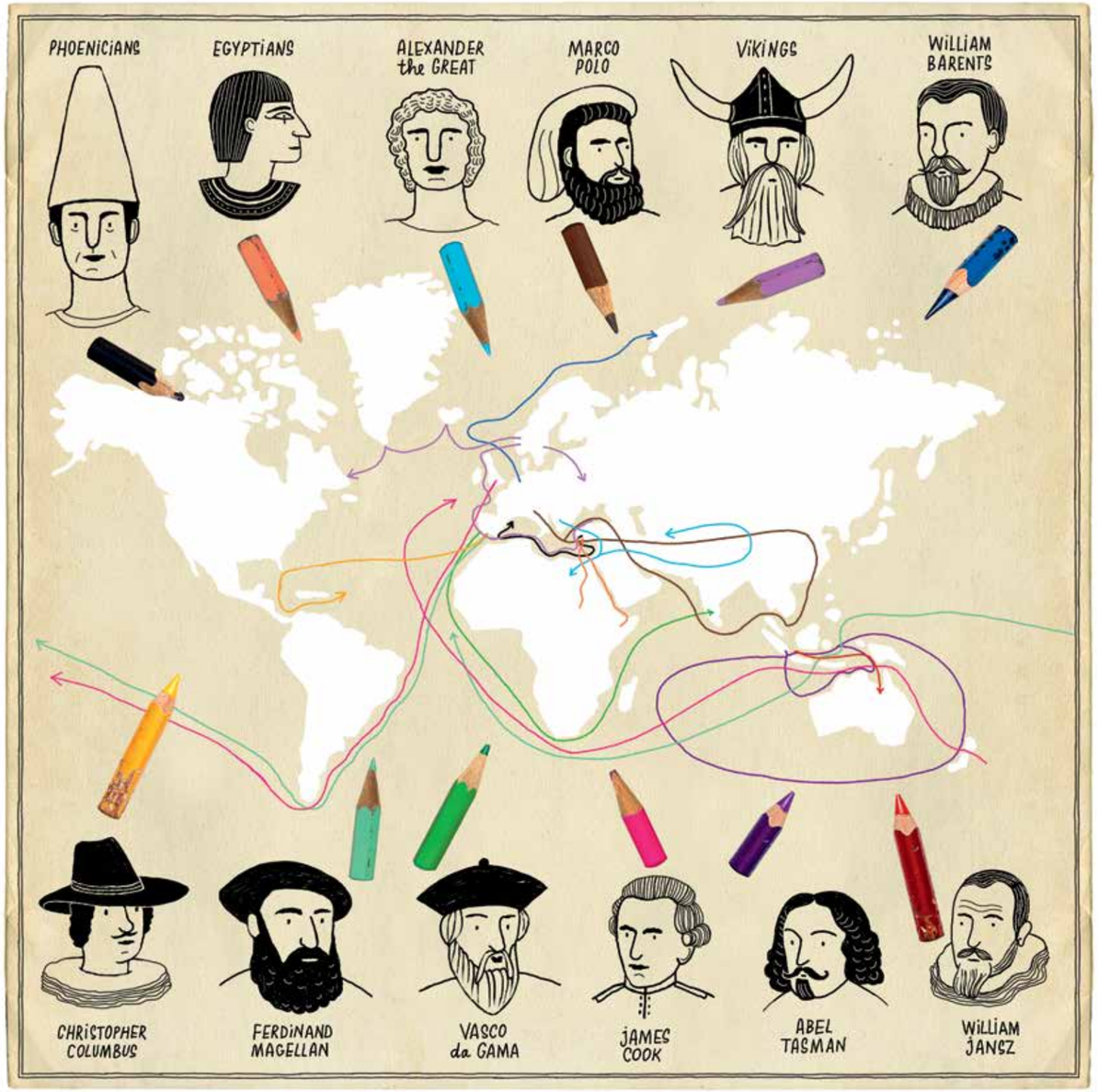
Ah, a blank world map is very empty indeed. We do see a lot of spots scattered across the world though. Those must be our candidates. They have no idea of the world around them. Of course they don't, it's only 10,000 B.C. Haha. Ah, look, a small part of coastline becomes visible. Those poor Phoenicians are still afraid of sailing out to the open sea. Wait a minute, now we see a bit of the Mediterranean Sea take shape. And over there, there's something sailing down the Nile. Those must be the Egyptians! Meanwhile we can see more and more small islands becoming visible in the south east of our map. That's very brave of our Polynesian friends in their tiny boats.

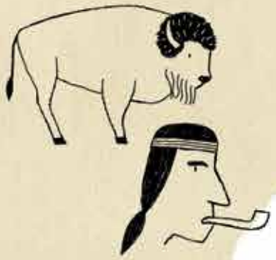


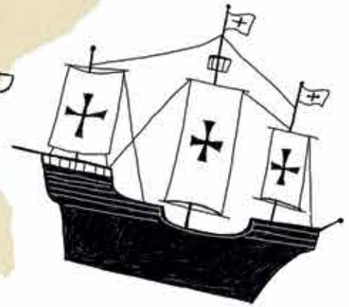


4th century B.C.

I'm seeing a lot of coastlines now people, why don't you go into the interior? Look, Alexander the Great doesn't do things by halves: he simply brings his mapmaker along on his crusades. Ta-da, now we get to see a lot more of Greece, Egypt and India. Speaking about mapmakers, this guess has just come in from some guy named Ptolemy. He says there should be a fantastic continent in the south of our map. We'll see about that, Mr. Ptolemy. You'd have to prove it first. Why don't we call it Terra Incognita for now: Undiscovered Land?





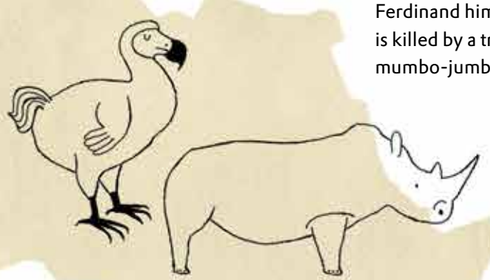


1st century

For Rome, sir Pliny the Elder is now playing. Oh, he thinks he can just describe anything on his path. Africa, Asia and Southern Europe are getting clearer by the minute. But no, Mr. Pliny, there are no one-legged creatures who use their foot as an umbrella in India. This won't get you any bonus points. But we do accept those camel-like creatures with spots like a leopard's and a neck that's several meters long and also those giant grey animals with enormous ears and a long tube where their noses should be. The rest of the candidates seem surprised, but really: they exist!

9th century

Finally, there is some movement up in the north as well. Those must be the Vikings. Wow, half the coastline of Europe becomes visible. Oh, and just to be clear: you only have to put the areas on the map, you guys, there's no need for looting and pillaging. But look, they also take in a piece of America while they're at it. This is causing some grumpy faces in the Spanish camp.

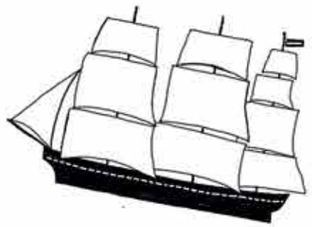


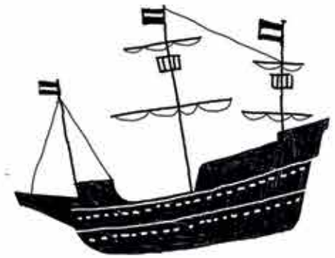
13th century

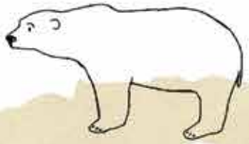
You'd better watch those Italians now, because Marco Polo and his gang are on their way. He reaches China in no time at all. We get to see more and more details of Turkey, Persia, India, China. Just like that: across the sea and overland. That's the way to do it. Look, the Arabs are going into the Sahara and up into the mountains of India. And as if it's costing them no trouble at all, they sail right on through to East-Africa, China and Indonesia. So what do we have now? A part of Africa, Europe, Asia and a small part of America and Greenland. But really, the outer edges of our map are still completely blank and we're almost in the 15th century already. Do you think the rest is just some sort of giant ocean or something?

15th century

Whoops, I shouldn't have said that. Portugal starts interfering. And just like that, the whole coastline of Africa becomes clear. Spain is betting on an Italian now: Christopher Columbus. And why not? He simply sails west to find a faster route to Asia. But really Christopher, of course you bump into America before you get there. Columbus is convinced he's found India and calls the native inhabitants "Indians". I'm looking at the judges, and they think Columbus' discovery is… correct! Go easy on those Indians, they add, but I think it's already too late for that. Meanwhile, things are getting crazy in the East as well. Madagascar appears on the map, and the interior of Indonesia. Thank you, Vasco da Gama! In the meantime, Ferdinand Magellan's ship is the first to sail around the world. Ferdinand himself only makes it to the Philippines, where he is killed by a tribe elder who has no patience with his Catholic mumbo-jumbo.







17th century

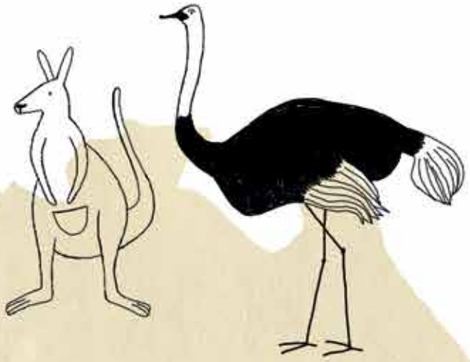
And look who we have here: a whole bunch of Dutchmen. Well, if it isn't the Golden Age. William Barents is being his stubborn self and sails to the North. He puts Spitsbergen and Nova Zembla on the map for the Netherlands. Be careful you don't get stuck in the ice, William. Whoops, too late. You'll just have to spend the entire winter among polar bears. What about Wiliam Jansz? He lands in Australia, shrugs his shoulders and takes off again. We'll never fill in our world map this way! Abel Tasman discovers New Zealand and Tasmania, but misses Australia by a sea's length. And here we have Captain Cook, bumping into the east coast of Australia. Unlike the Dutch, the British do take a liking to this continent, though the Aboriginals don't seem to be too pleased about that. And the fans of Terra Incognita look slightly disappointed as well – they really had something quite different in mind.

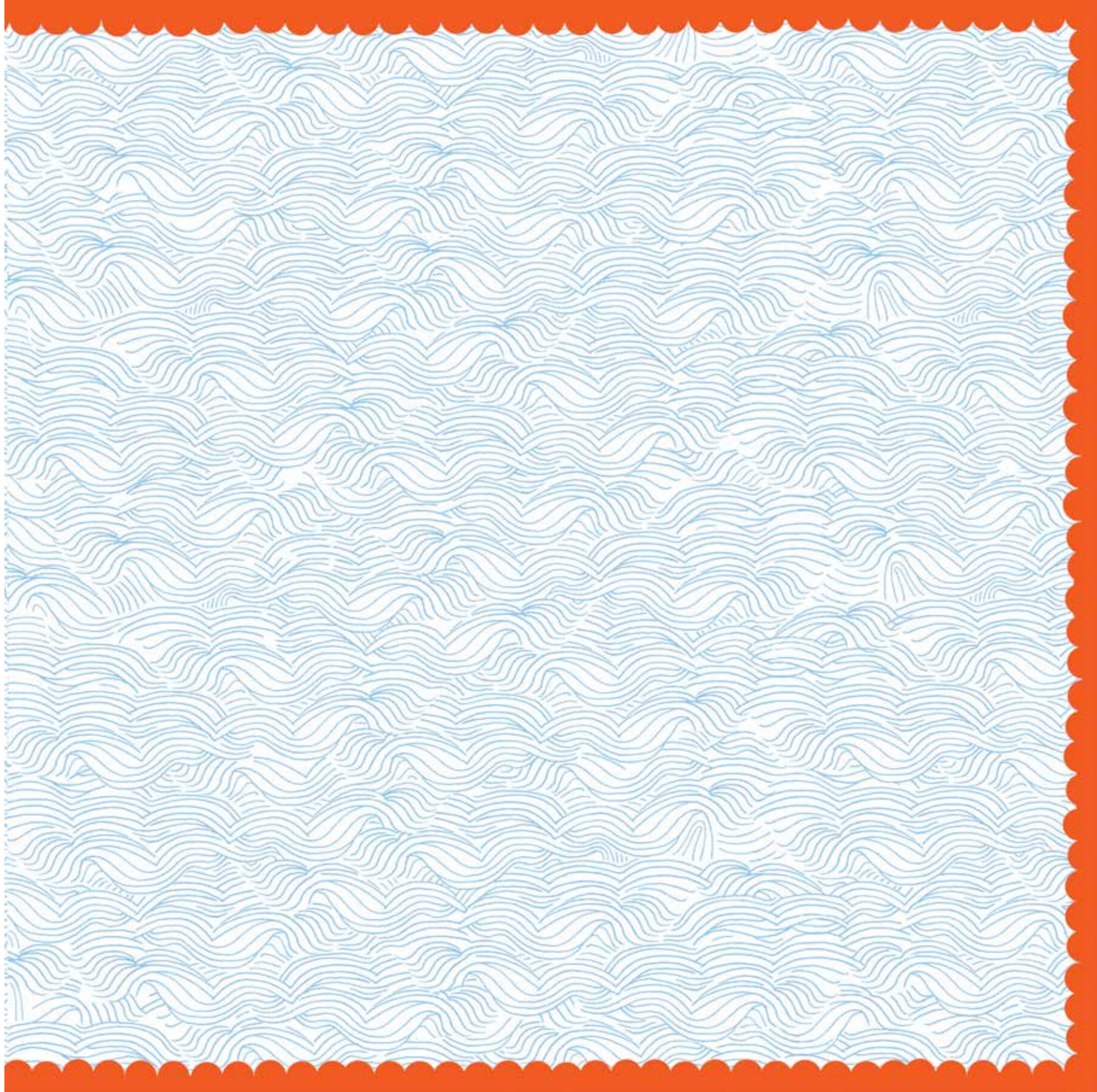
19th century

Well, by now we've outlined most of the continents. Let's unleash the landlubbers. We're still looking for: the sources of the Nile, the run of the Orinoco river, Lake Chad, Uluru, Mount Kilimanjaro, the Victoria Falls, the Mekong, Machu Picchu, the peaks of the Himalaya and so forth. Now it's simply a matter of quickly filling in the interiors. And we're also looking for volunteers for a small trip to the poles. I'm seeing some contestants from Norway, the United States, and England. Remember to bring your gloves guys!

Drumroll

And the winners are… all countries that became rich by trading gold, spices, slaves, rubber. Without the trade with the Far East, those beautiful canal houses in Venice and Amsterdam wouldn't have existed at all. But there are also losers: just about all the tribes that were discovered. Because of the weapons and the diseases the explorers brought with them, only a few of them survived.
Anyway, I hope you've enjoyed the game. Thank you for your kind attention and see you next time on… Map your way around the world!






Noordelijke IJszee
Noordkaap
Hammerfest
Kola
IJsland
Eyjafjallajökull
Noorwegen
Zweden
Noordzee
Engeland
Greenwich
Berlijn
Europa
Eifel
Frankrijk
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