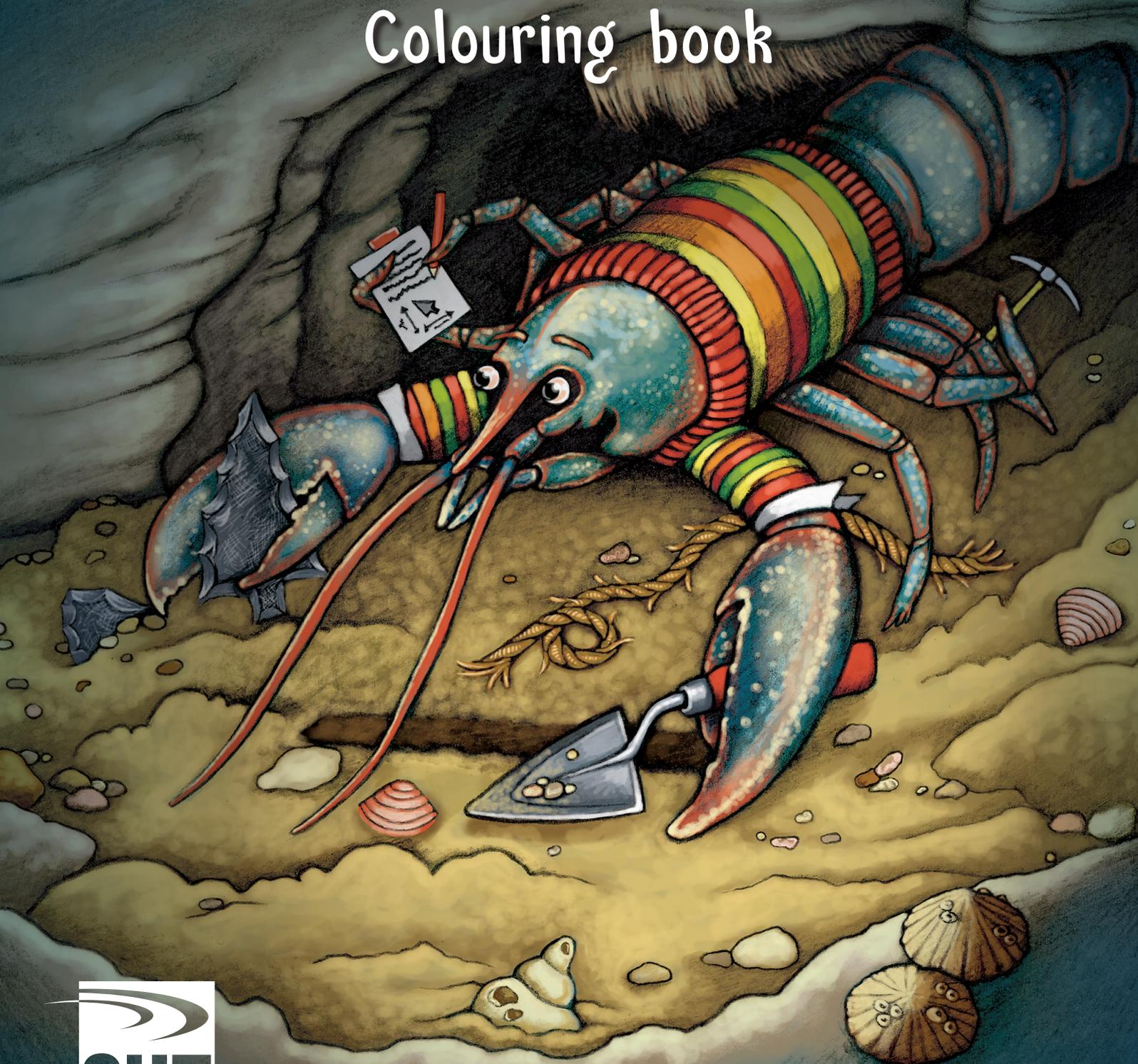


Can a Lobster be an Archaeologist?

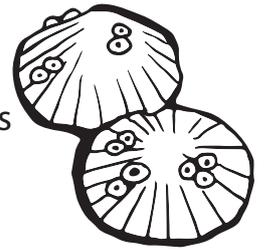
Quirky Questions and Fascinating Facts about the Underwater World

Colouring book



Can a Lobster be an Archaeologist?

This story begins 22,000 years ago, at the time of a very big, very cold Ice Age when furry mammoths walked the cold countryside. Frozen landscapes stretched for thousands of miles and humans were nowhere to be seen.



When the climate eventually started to warm up, the ice began to melt. Huge areas of lush green land appeared which was now perfect for humans to live on. By 8000 years ago, so much ice had melted that sea levels rose, separating Great Britain from the rest of Europe.

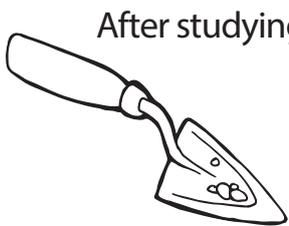
At this time, a group of Stone Age people had made their home in a valley in the southern part of ancient Great Britain. It was perfect for hunting, fishing and camping. They were even able to bake bread and make boats too – they left behind evidence of probably the oldest canoe-building site in Europe!

But then... disaster struck. The sea began to rise even more, flooding the valley. The people living there had to leave their homes. Today there is only water there. This area is now called Bouldnor Cliff and is near the Isle of Wight.

This settlement would have stayed a secret forever, with all the remains of homes buried under the sea, but someone (or should I say 'something') discovered it.

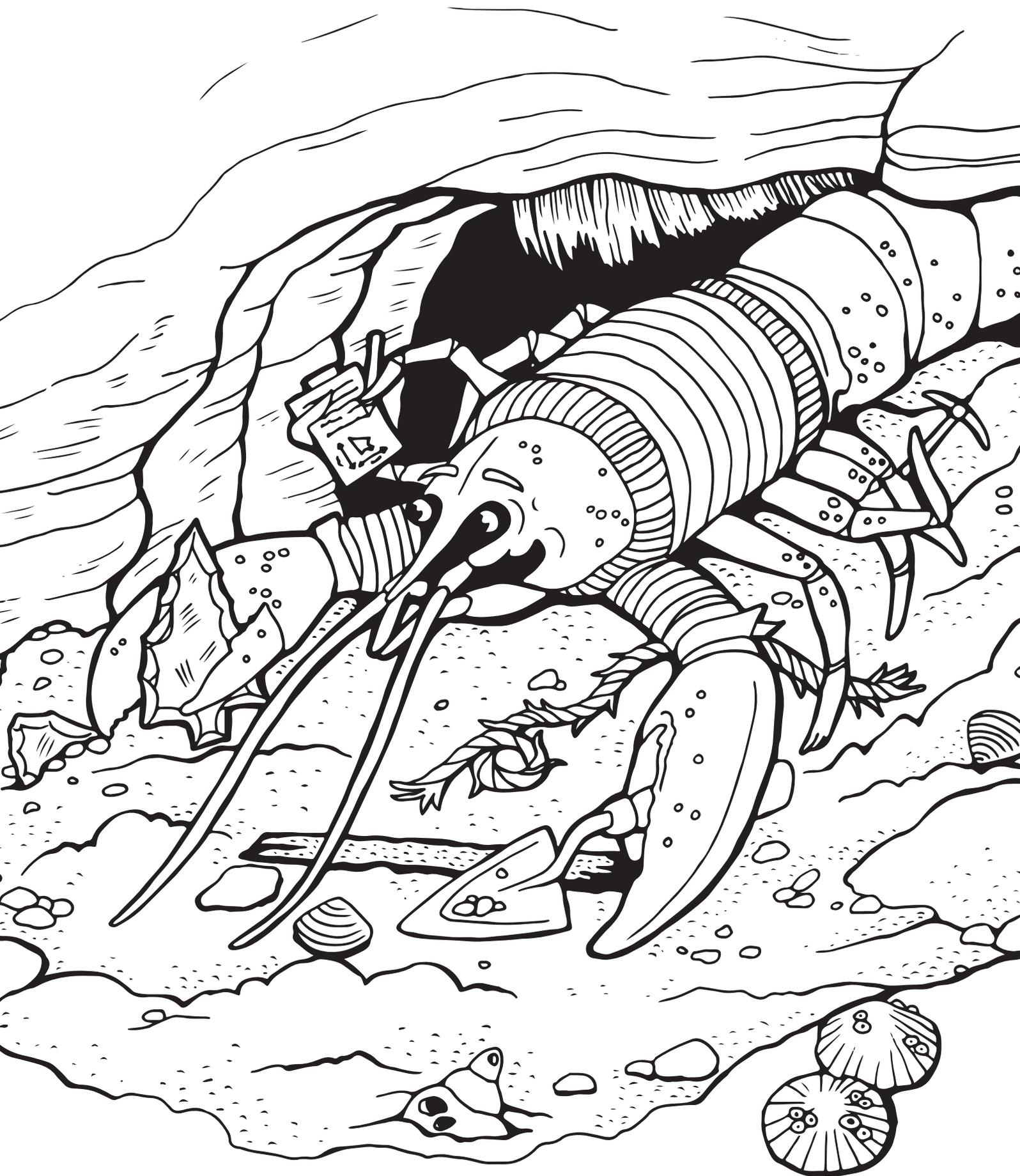
In 1999 a lobster, who was later named Larry, was discovered by divers from the Maritime Archaeology Trust. As Larry was busy digging to make a burrow to live in, he had no idea he was also being an archaeologist! Larry kicked aside flints, human tools and other things which were useless to a lobster. The divers had never explored this area of underwater forest before and decided to take a closer look. With the help of Larry they dug out a small trench and made some exciting discoveries.

The divers found hundreds and hundreds of items – including hand made arrow flints and knives, 50 pieces of carved wood and the oldest piece of string in the UK!



After studying what they found, they discovered the items were 8000 years old, and from a village that would have remained lost buried underwater if Larry hadn't found it! They also found a log boat which was made in a certain way which we didn't think was possible at this time in the Stone Age! Our ancestors were far more skilled than we thought!

The discoveries made by Larry the Lobster and the divers showed us how people lived all those years ago. Divers are still going there now, exploring the area to find more secrets hidden underwater at Bouldnor Cliff.



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How do they make underwater movies?

Have you ever wondered how they get a mermaid to swim in the movies? Or James Bond to hold his breath for what seems like forever? Or Harry Potter to breathe in a deep lake using magic?

It takes a bit more than the actor simply taking a few deep breaths then going under the water. Making films takes a long time. Lots of people have lots of different jobs to do, and when the story being told is underwater, there are even more things to consider.

Most underwater scenes are filmed in a big tank in a studio. In the tank the water is warm, 32 degrees Celcius. The actors and the crew will be in the water for a long time while they get the scene just right, so it's important that they don't get cold.

Depending on what costume the actor is wearing, they might be able to wear a wetsuit underneath, this will help them keep warm and also float in the water if their costume is too heavy. If the actor is wearing make-up it has to be waterproof so it doesn't get washed off as soon as it gets wet!

The director will need to talk to the actors and crew, giving them instructions. This is easy above water, but underwater?! The best way is by using underwater speakers in the tank so everyone can hear what the director has to say.

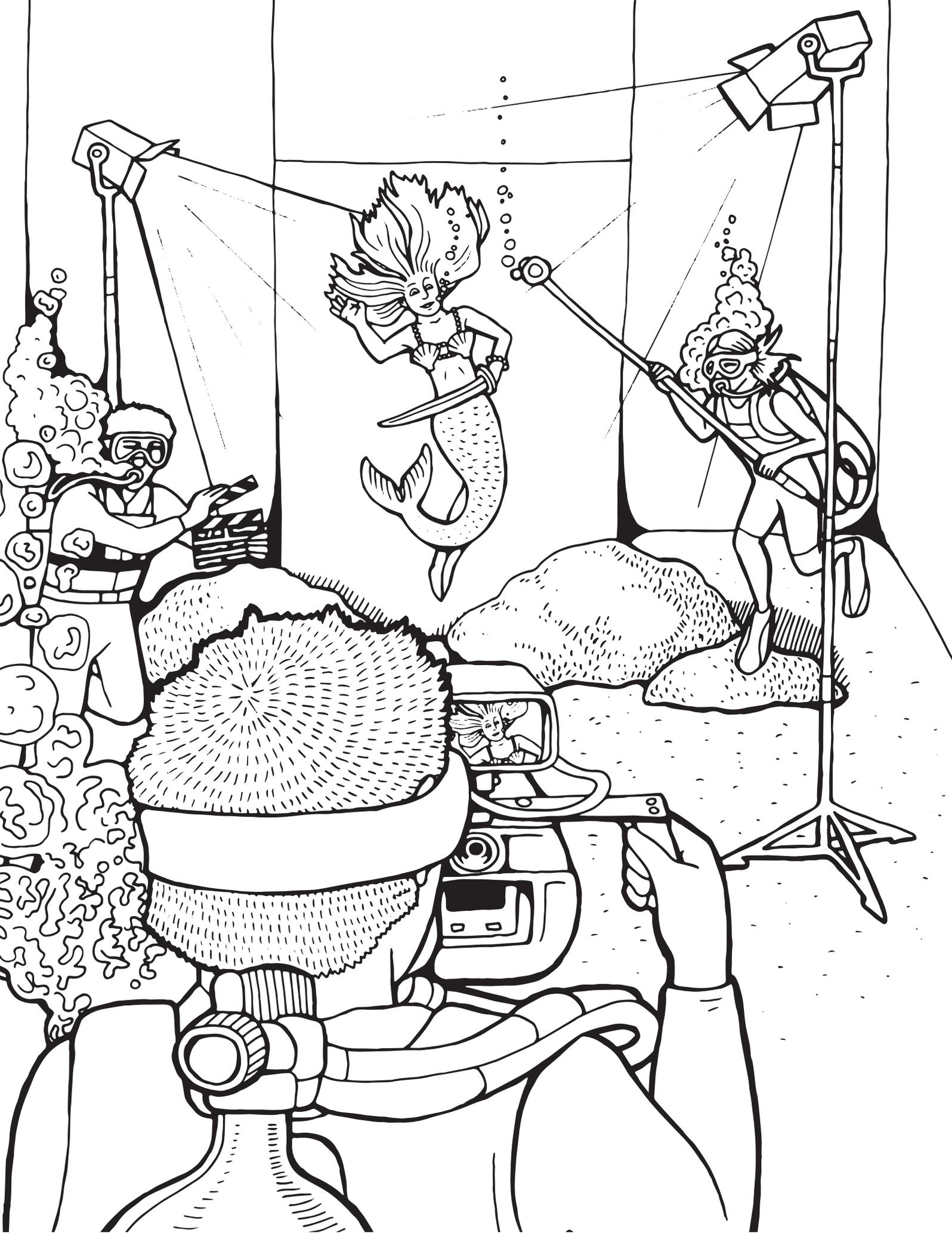


This is all very well, but how do the actors breathe underwater?! In the tank with the actor and the person operating the camera will be a safety diver. They have a supply of air attached to a long hose, which they hold up to the actor's mouth, allowing them to breathe until the scene is ready to film. The safety diver will stay in the tank to make sure everyone is okay.

Finally, when everything is ready to go, the actor takes a few deep breaths, the air hose is removed, and the director shouts ACTION!

When the filming is finished amazing things happen before your eyes, mermaids are real, James Bond is invincible and magic really does exist.





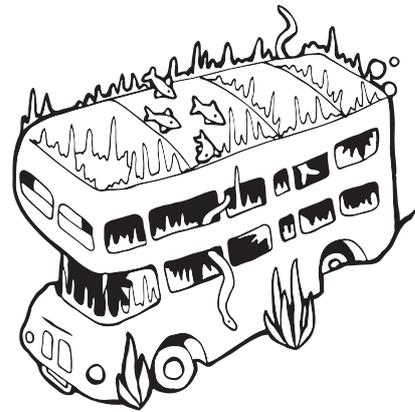
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Where will we live if the ice caps melt?

This is a story of how London could be one day in the future...

The ice caps had melted faster than the scientists believed they ever could, so the sea levels around the world got higher and higher... the capital of England was now mostly underwater. When this happened, most people moved to other parts of the country which were safe from the floods, but some people stayed in London. They lived on the top floors of tall buildings and all loved boating (they had to, it was the only way to get around!).



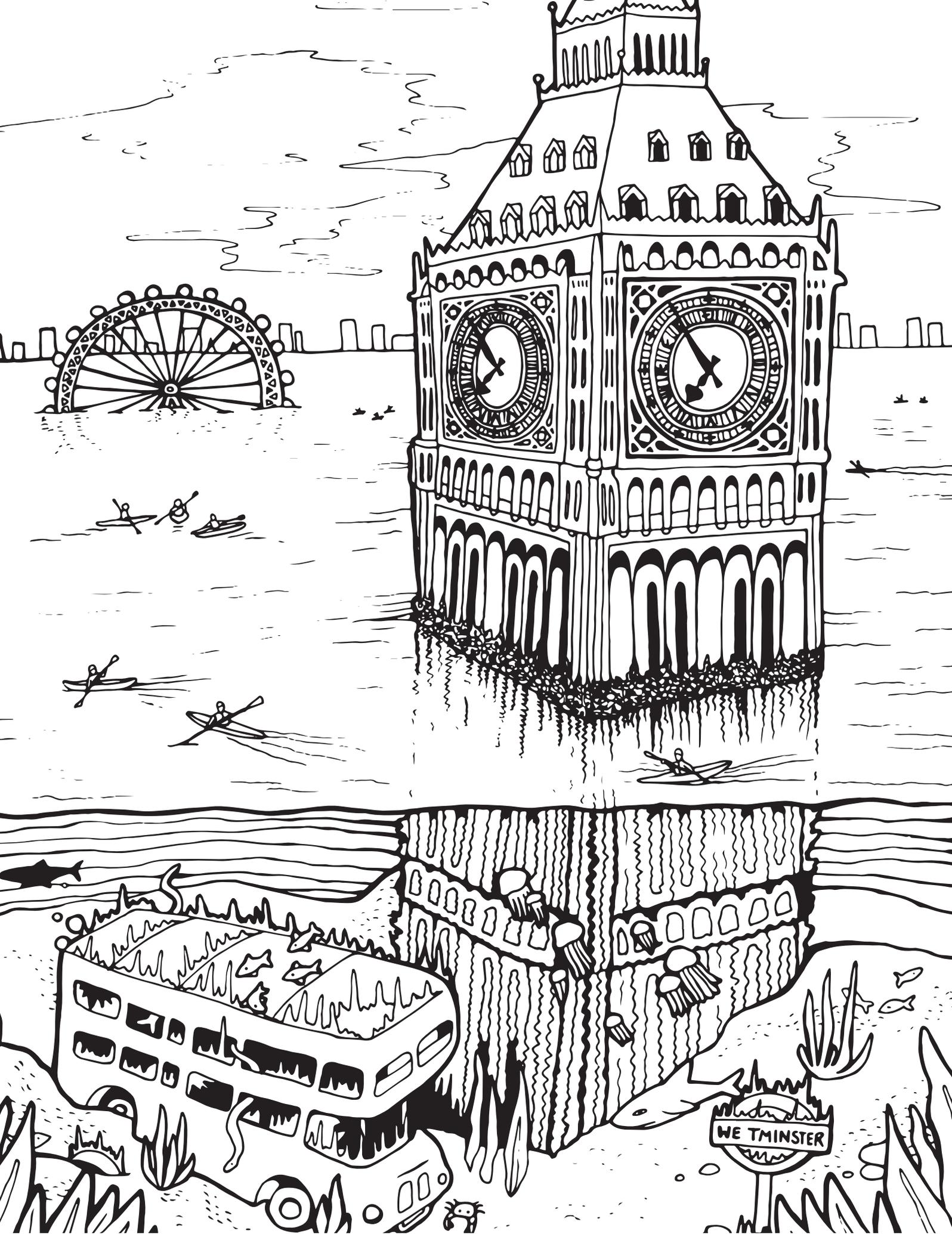
Peter lived in a 5th floor flat. Looking out of his window was one of the best views in London. Today the tide was low, so that meant lots of the roofs of old buildings were going to be visible above the surface of the water, making it a great day to explore London by boat. Peter and his friends Asha and Martha launched their canoes from a 3rd floor window in their tower block, and off they went, paddling along the old route of the River Thames.

They rowed above Oxford Street, where the old Apple store was (their history teacher had told them some of the very first computers were sold there). As they followed the current they saw the tops of St Paul's Cathedral, the Houses of Parliament, Big Ben and the remains of the Tower of London, all surrounded by water!

They let the rush of the current whoosh them under the old walkway at the top of Tower Bridge, taking care to avoid the other canoes and boats as they go - this was still a popular place for tourists to come and take pictures from the safety of a London ferry. It was hard work rowing all day, so when they arrived at Greenwich they stopped off for an eel burger (eels are all the rage for dinner now since the salmon disappeared).



As the sun started to set, the three adventurers made their way home, canoeing over old London. Peter wondered to himself if London would ever be a great city again, perhaps in a future ice age? For now though, it was his very own exciting underwater world to explore.



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Are lake monsters real?

In 1934 a very famous photograph was published of the Loch Ness Monster ('Nessie' to you and me) swimming along in the well-known Scottish lake. Of course, it was later discovered to be a fake – just a toy submarine with a long plastic monster neck and head attached to it!

Even though it was found out to be a joke, people still say they have seen Nessie, in fact there have been over 11,000 reported sightings of the famous monster!

Maybe there really is something swimming in the deep dark lake? Loch Ness would be a great place for a monster to hide – it's 24 miles long and in some parts it's over 270m deep! That's a lot of hiding space if you don't want to be seen.

In all of the reports, people have always said the creature they saw had a long neck... maybe it was something else? A long-necked seal? A really big eel? A giant squid was found swimming off the coast of Australia in 1997 – a squid that, up until that day, had only been a myth! Who knows what else is secretly living down there in the deep.

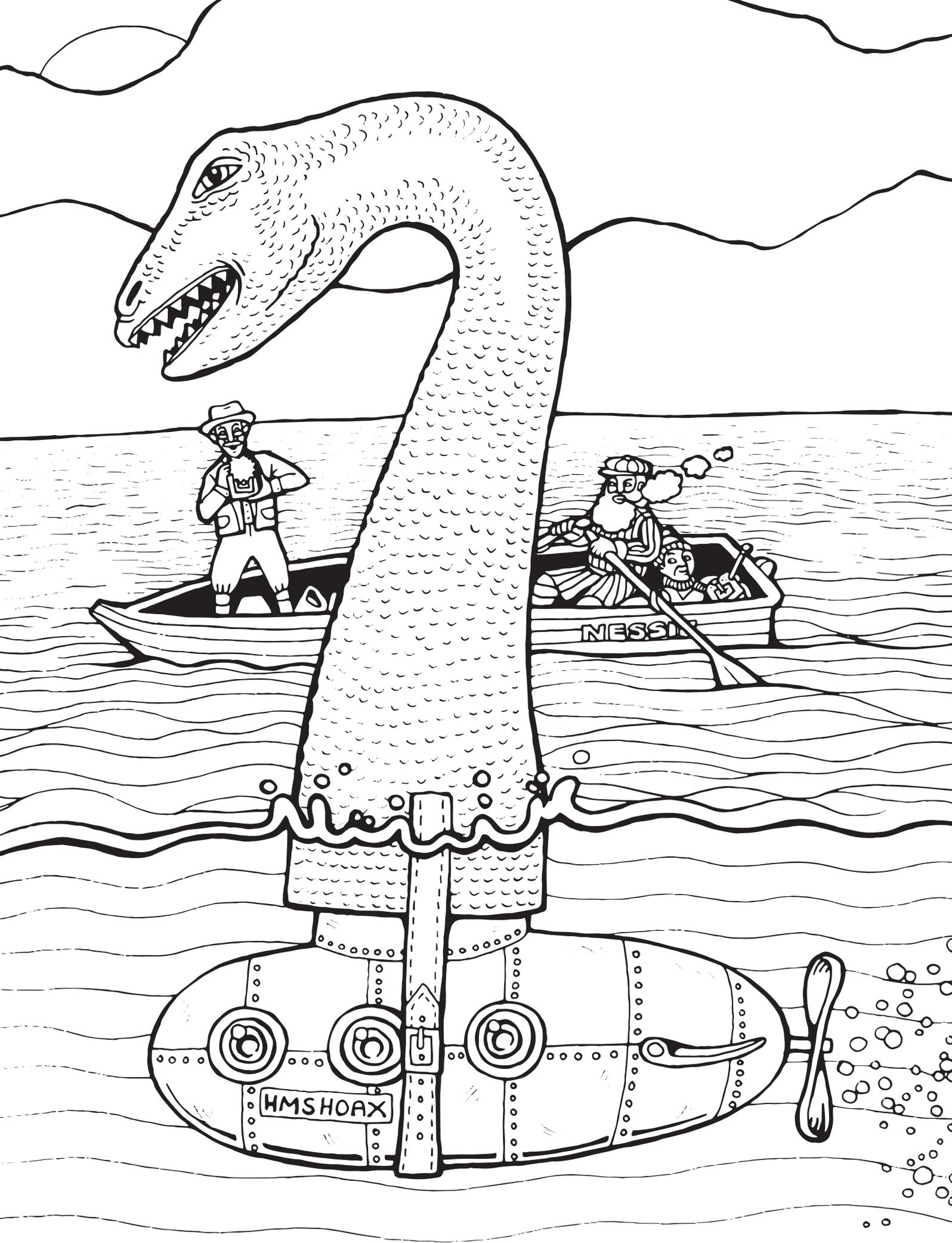
Speaking of creatures that we didn't think we'd ever find – scientists have recently discovered pre-historic fish swimming around – ones that should have died out at the same time as the dinosaurs! What if a long-necked lake-loving dinosaur had survived all this time without us knowing? One extinct creature like this is called Plesiosaur, a large water reptile from the Jurassic period. Maybe some Plesiosaurs survived when all the other dinosaurs didn't, and they have been our underwater neighbours all this time without us knowing?!

Other sea monsters have been seen in Iceland, Canada, Wales, England, North America... the list goes on and on. But were they fake too? Maybe they were just tricks of the light, or perhaps a log floating in the water?

Some scientists think that there might be sea creatures swimming about that we've not even discovered yet, the ocean is a big place after all!

Keep your eyes open... maybe you'll see Nessie one day too...





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What is a science diver?

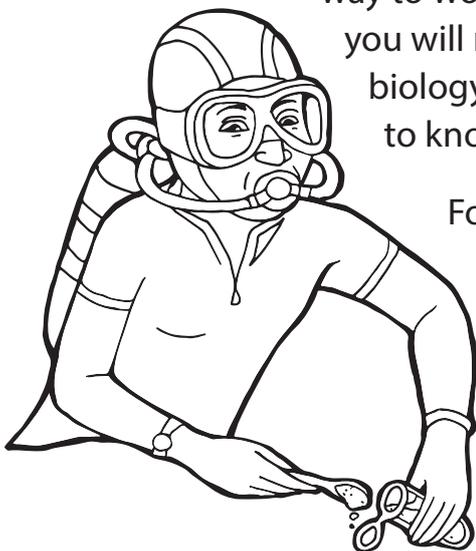
All through history people have wanted to dive underwater and explore the exciting world that lays beneath the surface. Diving for fun became popular in the 1950s and 60s. Eventually scientists started diving too, doing underwater research, collecting samples of plants, rocks, seaweed, soil, mud and even animals and fish they found, all to learn more about this watery world.

Of course, there are some problems with working underwater... When you dive down into a lake or the sea there are lots of things that can get in the way of your research. For a start, the deeper you go down, the darker it is. Sometimes when you're underwater you can only see a few metres in front of you, it can be murky and cloudy.

You will also have to carry the air you're going to breathe in a tank on your back, and that only lasts for a short amount of time, then you have to go back up to the surface – so you need to collect your samples before the air runs out! (Don't worry, you always dive with a partner or a 'buddy' so you won't be alone!)

Science divers will go back to the same spots more than once so they can study the area really well, but they have to be careful – they can scare away the animals and fish without meaning to, or sometimes the opposite can happen and they can attract sea life; they might meet a particularly friendly seal who just wants to play!

Today scientific diving happens all over the world. Universities and researchers send divers out to do underwater work all the time. It's a really fun and exciting way to work, but it isn't an easy job to get. It takes hard work, you will need to have a degree in a scientific subject like biology, geology, or archaeology, and of course you'll need to know how to dive!



For science divers, venturing down under the water to explore and do research is just another day at the office. But whenever they are collecting samples and making discoveries, they are also learning the most important lesson – how to protect the ocean and our planet.





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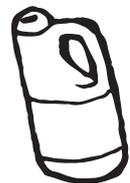
How much rubbish do we throw into the ocean?

Every year more than 8 million tonnes of plastic rubbish ends up in the ocean. It's hard to imagine just what 8 million tonnes looks like... think of 15 full bags of shopping (full of plastic rubbish) on every single meter of the world's coastline!



The plastic we throw away washes up on the beach, or floats on the surface of the water. It's dangerous for lots of animals. Turtles eat plastic bags thinking they are jelly fish; seals get tangled up in plastic nets; birds eat plastic bottle tops, and don't even get me started on plastic straws...

Even more scary is the tiny pieces of plastic (some almost too tiny for us to see!) which get accidentally eaten by the smallest creatures in the ocean – zooplankton. These micro-organisms are food for bigger sea creatures like fish and lobsters, which means that little bits of plastic end up inside the things we eat too! I don't know about you but I don't fancy a plastic surprise in my fish fingers!



What can we do about this?

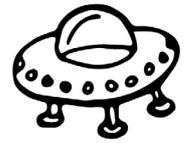
The best way to stop the dangers of ocean rubbish is to educate people about the growing problems. You can help by going to the beach with your family or your school class to pick up pieces of plastic and other rubbish. And we can reduce the amount of plastic we use every day and recycle what we do use.

Recently an 18-foot long boat was built using only plastic water bottles and other plastic rubbish. It sailed all the way from San Francisco in the United States to Sydney, Australia! That's over 7,400 miles! They named the boat the *Plastiki*.



If we all work together to reduce the amount of plastic we use and the amount that gets thrown away, we can save our ocean and all the amazing sea creatures who call it 'home'.

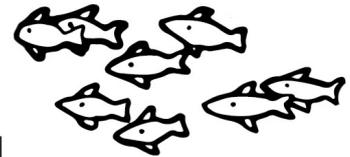
Would you rather live next door to a lobster or a Martian?



We're running out of space on Earth! Sorry, that was dramatic, but it's true! More and more houses are being built, and more and more land is being used for farming and factories to make our food. As sea levels rise with climate change the water will cover our land, meaning we have even less space to build on.

What can we do when all the space is taken up? Should we leave our planet? Go to Mars and build houses over there? We could do, it's not too far away, is it? Well... actually it would take more than 100 days just to get there. Also I don't think we can grow any food over there, the ground isn't the same as it is here on Earth. It's further away from the sun, so it would be colder than here, there's less gravity so we wouldn't be able to walk around outside unless we had very heavy shoes on to weigh us down... and there isn't nearly enough oxygen for us to breathe. And what if there are already Martians living there?! OK, maybe it's not a good idea.

How about living under the sea instead? We've got a lot of sea on Earth, so that's lots of space to use. Yes, OK, a lot of it is very deep and dark, not somewhere I think of as a great place to build a house, but how about in the more shallow waters? Then we could use the spare land for more food production.



But, can we stay underwater for long periods of time? Yes we can! Scientists and divers already do, sometimes they live underwater for weeks at a time just to get their work done. They have to breathe special air and take care when they come up to land, making sure they do it slowly and safely so they don't get sick.



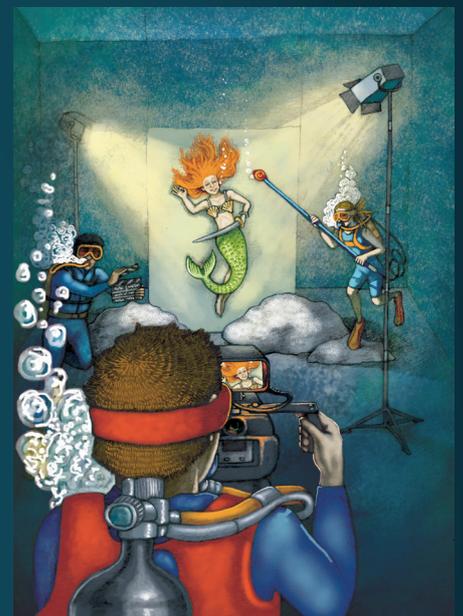
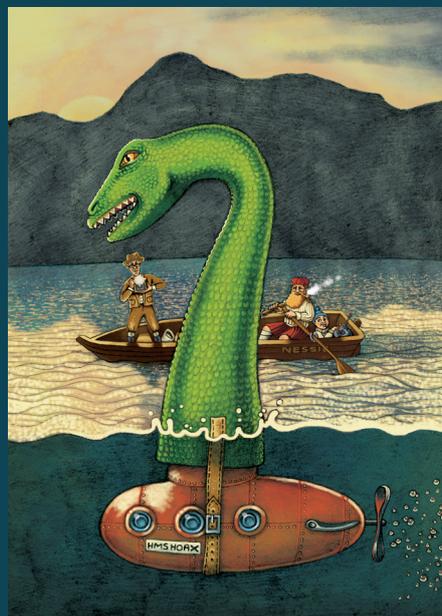
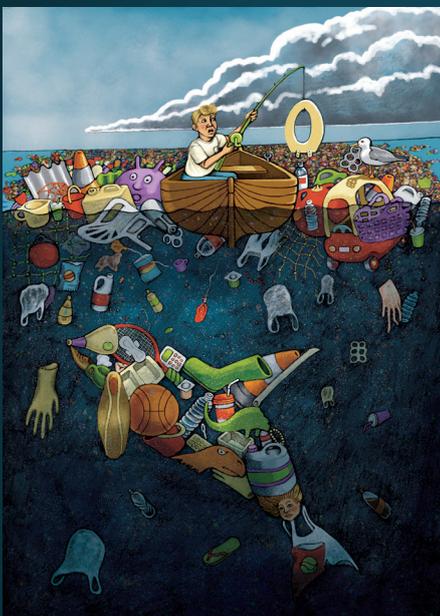
Imagine your house underwater – you would look out of the window (which will be made of very very thick glass!) to see hundreds of sea creatures (including lobsters) and amazing animals! You could even go diving with them as an after school treat! (Remember to always wear thick gloves when handling lobsters!)

Underwater towns and hotels are already being built in some places! But Space travel to Mars will one day be easier and quicker for us non-astronauts too. So, with both options being possible in the future, the only question you have to ask yourself is – would you rather live next door to a lobster or a Martian?



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A collection of stories from our successful children's book *'Can a Lobster be an Archaeologist? Quirky Questions and Fascinating Facts about the Underwater World'*.

This colouring book includes chapters written by authors Bil Loth, Garry and Katie Momber, David Pugh, Ralph Rayner, Martin Sayer and Mike Seares. The stories have been adapted for the younger reader and re-written by SUT Publications Officer Emily Boddy, with illustrations by artist Rachel Hathaway.

