



# International School Challenge!

CLEAN MACHINE  
To the Rescue

SUSTAINABLE DEVELOPMENT GOALS

Little Inventors  
Ingenious Ideas

14 LIFE BELOW WATER



RESOURCE



# What is an invention?

An invention is a new object or way of doing things which didn't exist before; an idea thought up by someone.

Anyone can create an invention, the main thing needed to invent things is lots of ideas. They can be helpful, useful, big or small!

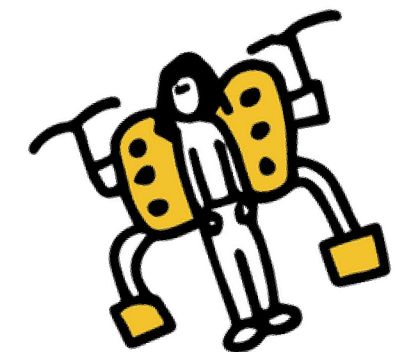
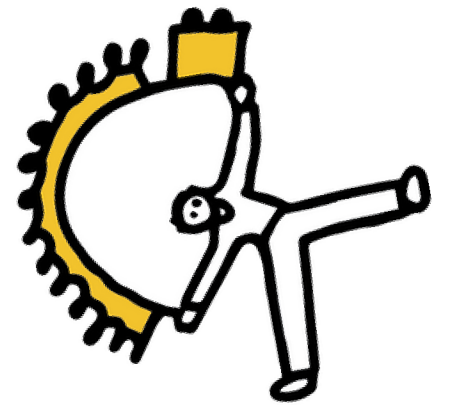




# Who needs inventions?

Everyone - even animals! Think about the first humans who had, well, not very much at all, and now look at the world around you. Who do you think came up with the table, a fridge and a watch?

Everything in the world had to be invented at some point! Coming up with inventions is one of the most natural things that humans (and some animals) do – it's how we learn to adapt to our environment, how we solve problems around us.





# Discussion

Can you name some well-known inventions?

Can you think of things which are difficult to do now, and how they might be easier to do in the future?

Think about 'ordinary' objects? Why were they invented?

Think about 2030 and how the world might have changed. What do you think will be different in everyday life?

Inventions are used to solve problems; can you think about problems or things that could be made more interesting or fun, now and in the future?



# Activity 1



Do 'Problem Detection  
Comic'

Find it in the ACTIVITIES pack ➡



# What are Sustainable Development Goals?

They were agreed by all United Nations Member States in 2015 to help achieve peace and prosperity for us and our planet, now and into the future.

There are 17 Sustainable Development Goals (SDGs), which are an urgent call for action by everybody.





Find out more  
about SDGs

Click to  
watch  
this video

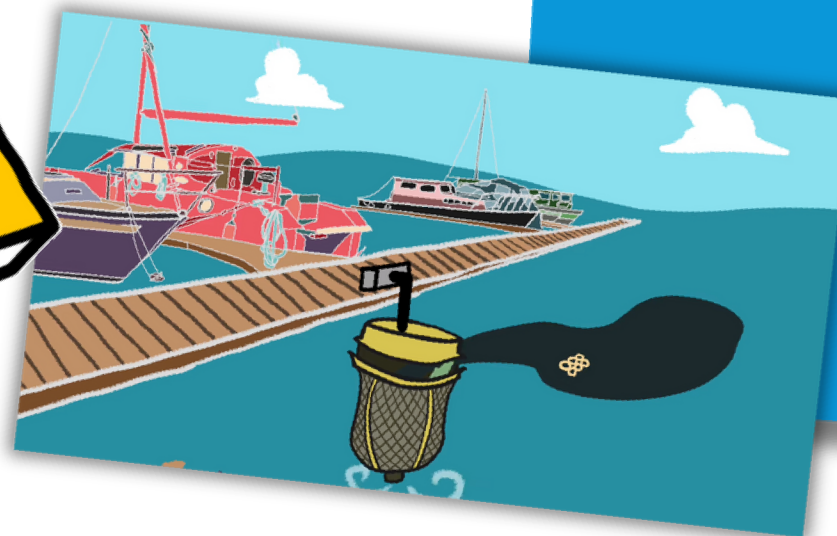


# This Challenge

**For this challenge, we will focus on SDG 14: LIFE BELOW WATER.**

We need to look after our oceans and seas, protecting marine life so underwater worlds can stay healthy and full of life.

[Click to watch this video](#)





# Activity 2

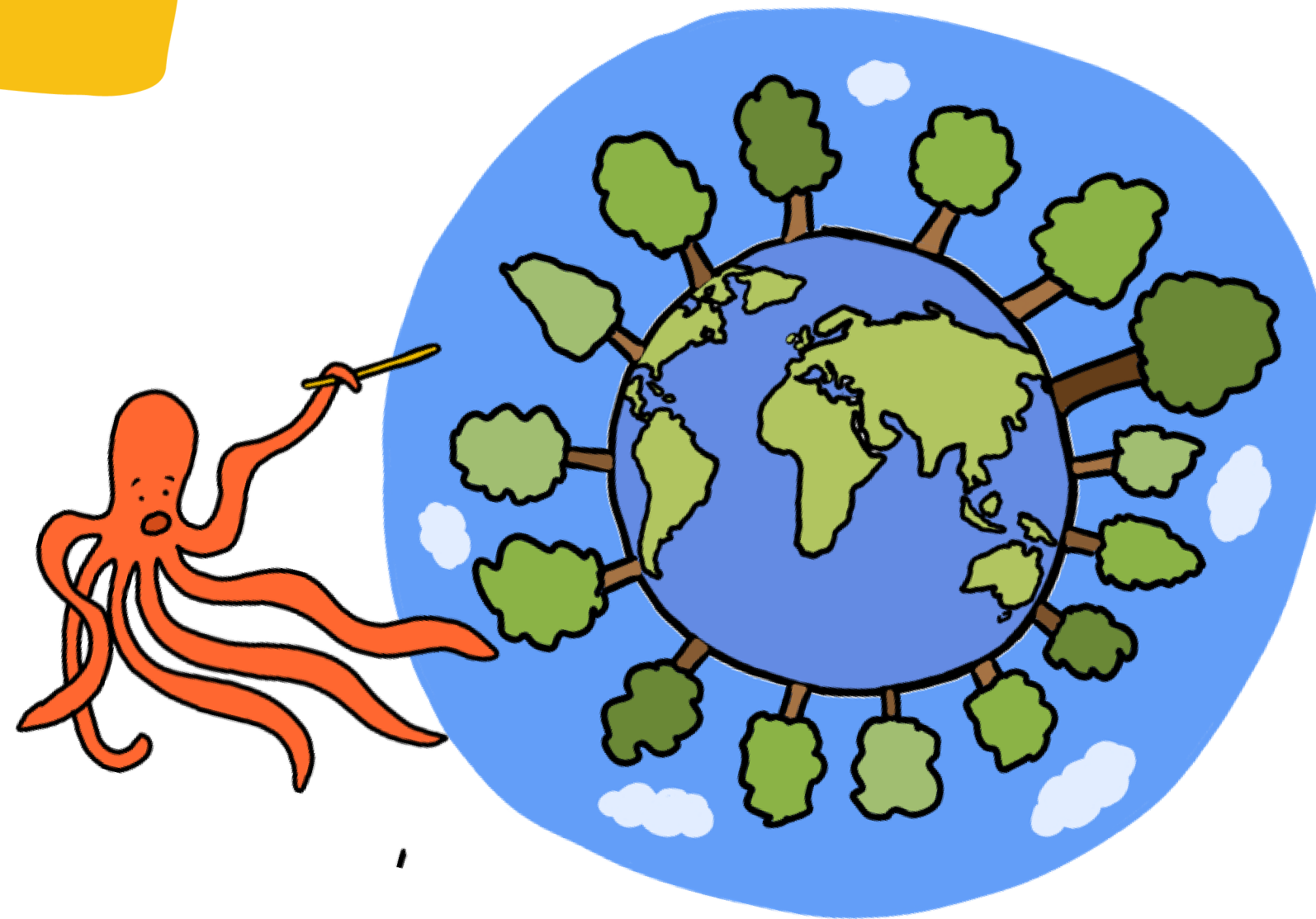


Do 'Sea Animal  
Profiler'

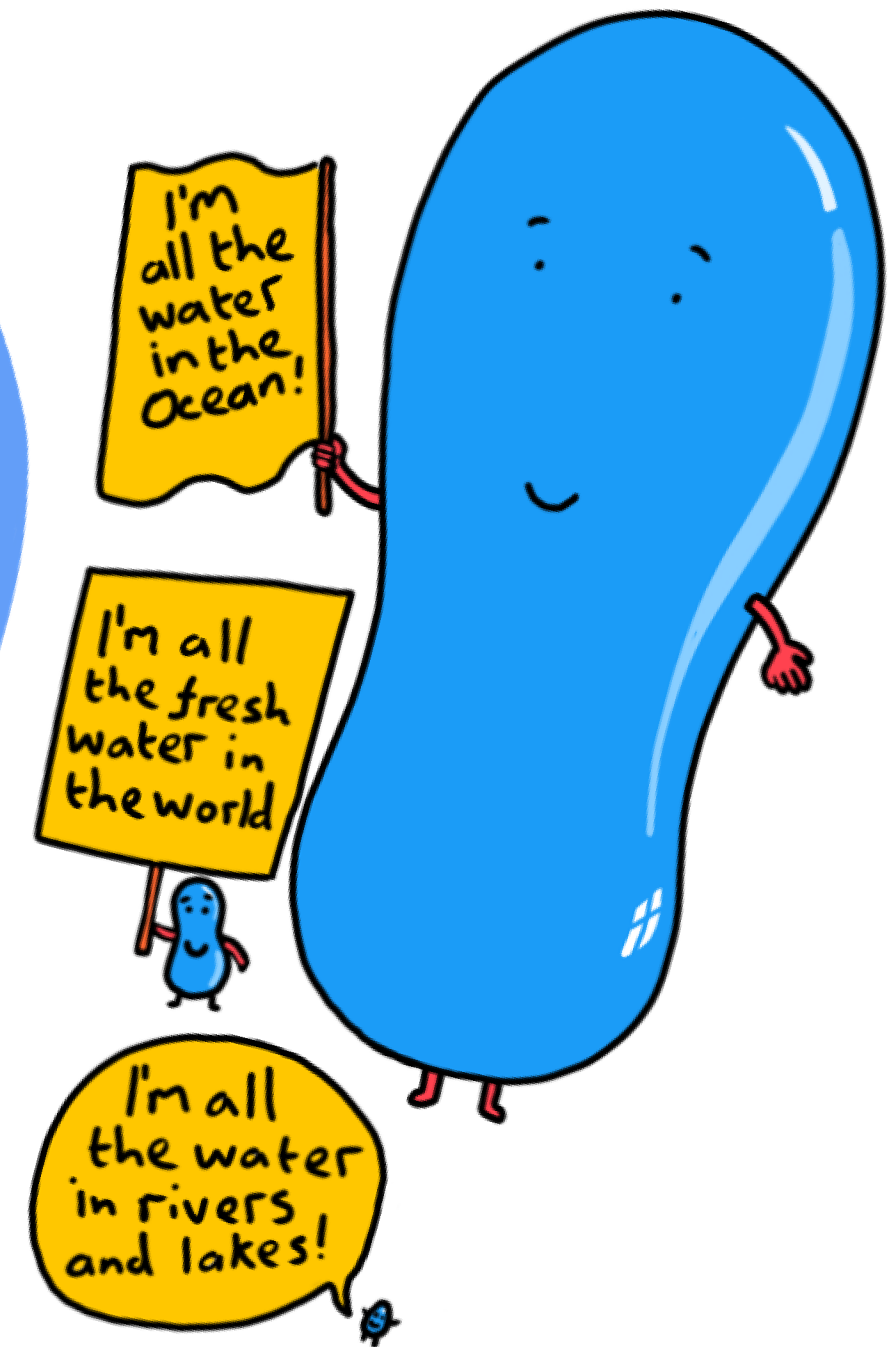
Find it in the ACTIVITIES pack ➡

# Welcome to Water-World!

Earth is unlike any other planet we know. It's the only one with vast amounts of water, covering nearly three-quarters of its surface - which is why it's often called a Water-World.



Water exists as ice, in lakes and rivers, and even in the air as water vapour, but most of it is found in our ocean.

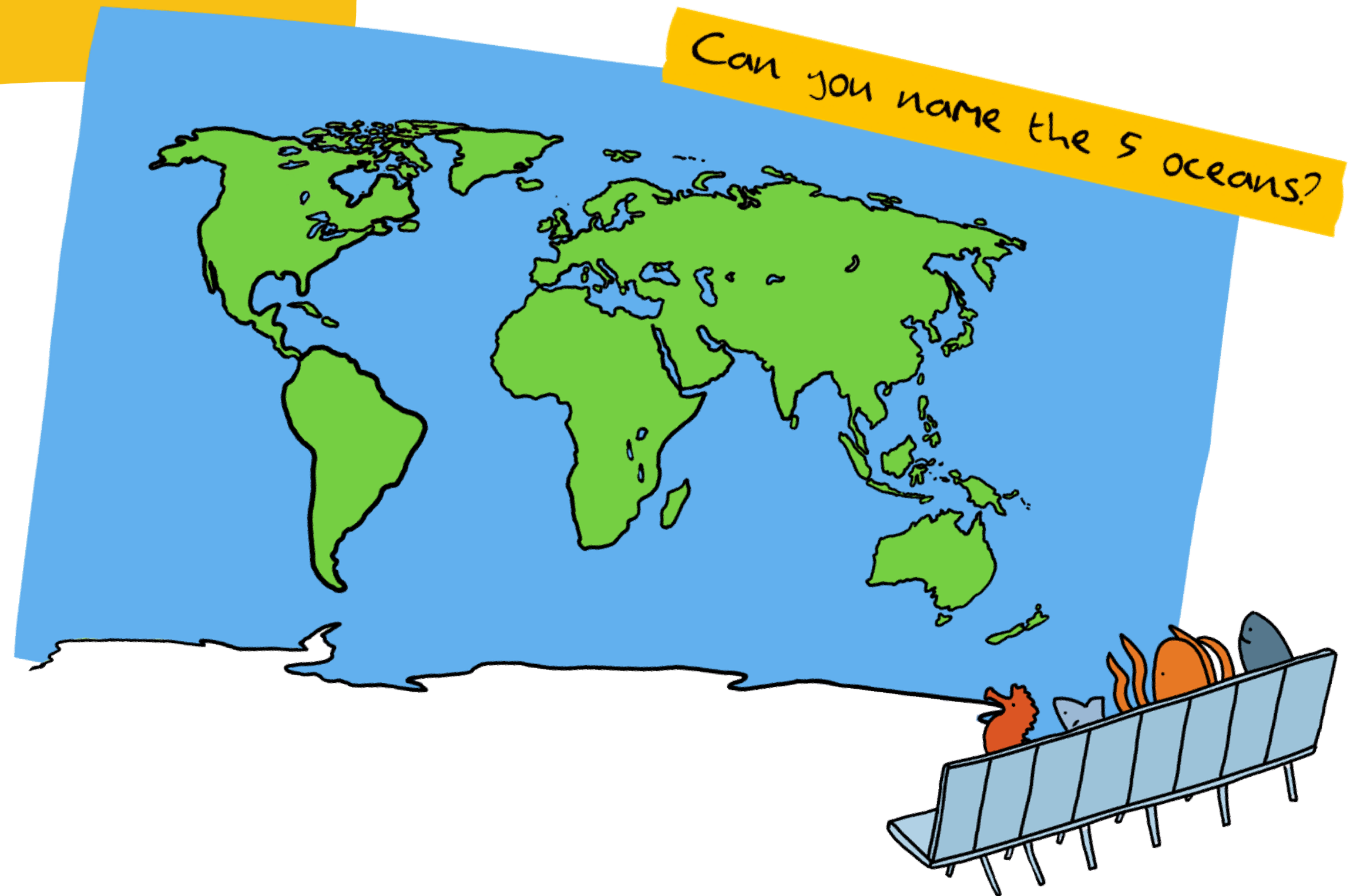




# A World of Oceans - Question!

Did you know there are five oceans and they all join together. Together they are known as 'the World Ocean'.

Can you name them all?  
You'll find out the answers on the next slide!



# A World of Oceans - Answers!

The Pacific Ocean is the world's largest, covering almost 50% of the planet's water surface. The Atlantic Ocean is the second largest and is home to the most fish.

The Arctic Ocean is the smallest but very powerful, staying frozen in winter and helping to cool the Earth.



The other two are the Indian Ocean and the Southern Ocean - though really, they are all one big, mighty ocean.



# Activity 3



Do 'Sea Creature  
Superpower'

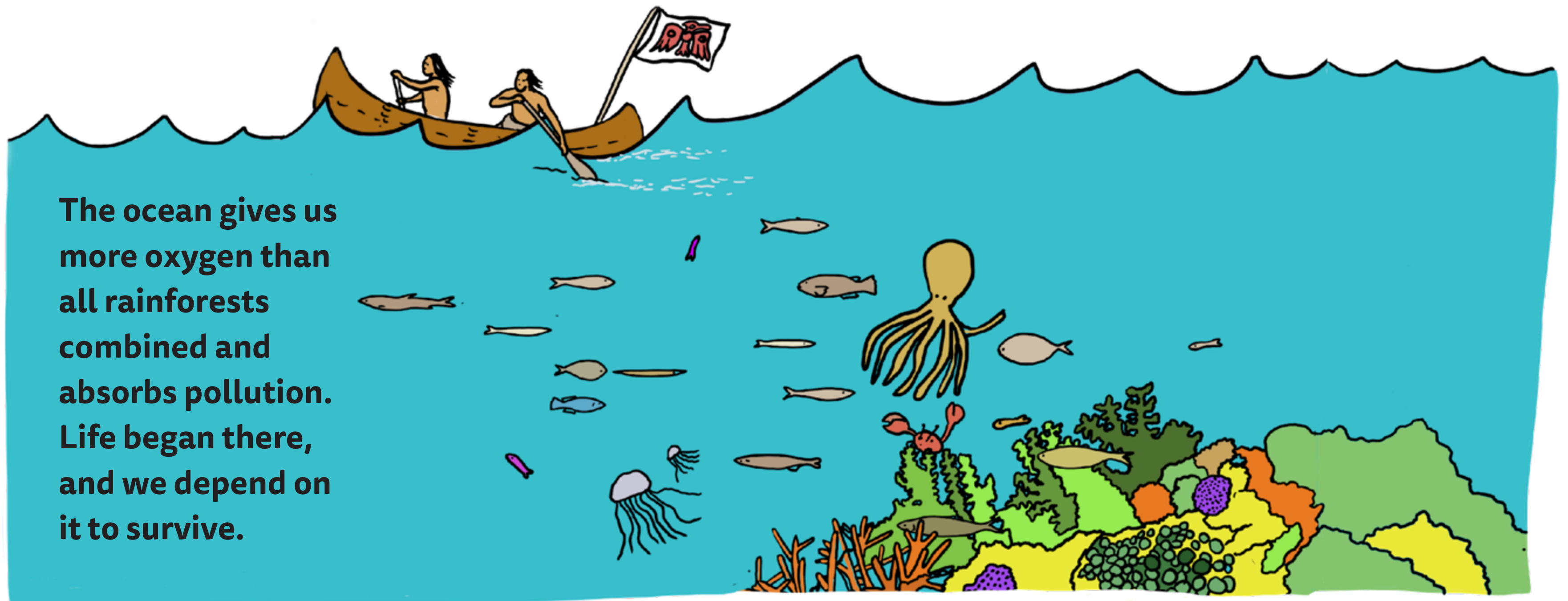
Find it in the ACTIVITIES pack ➡

# Mighty Oceans!

Yet it remains largely unexplored:  
only 5% of the ocean floor and a third  
of marine life are known, with  
millions of species still undiscovered.



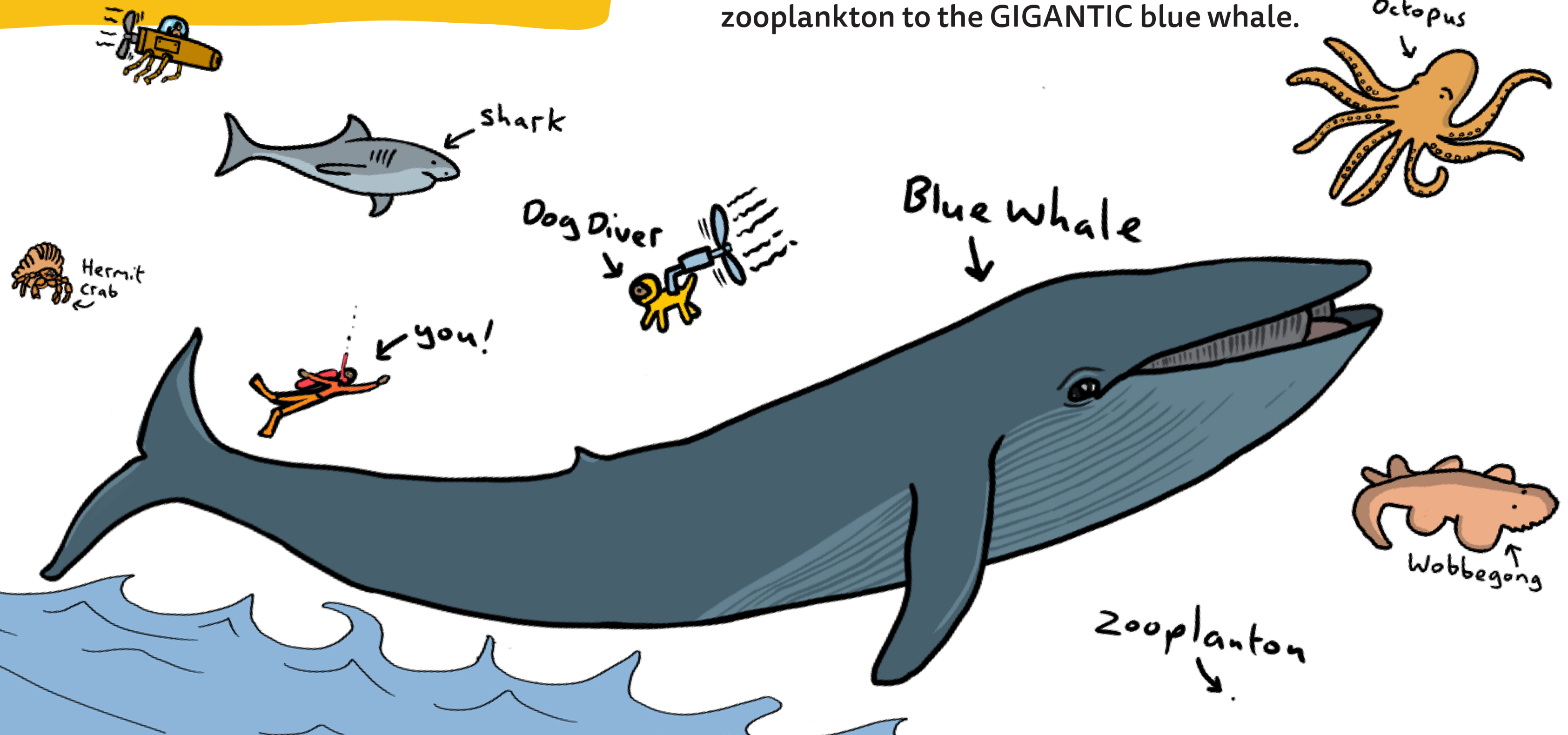
The ocean gives us  
more oxygen than  
all rainforests  
combined and  
absorbs pollution.  
Life began there,  
and we depend on  
it to survive.





# Sea Dragons & Wobbegongs

Beyond sharks and dolphins, the ocean is packed with surprising life. Scientists estimate around one million marine species, discovering 2,000 more each year - from tiny zooplankton to the GIGANTIC blue whale.



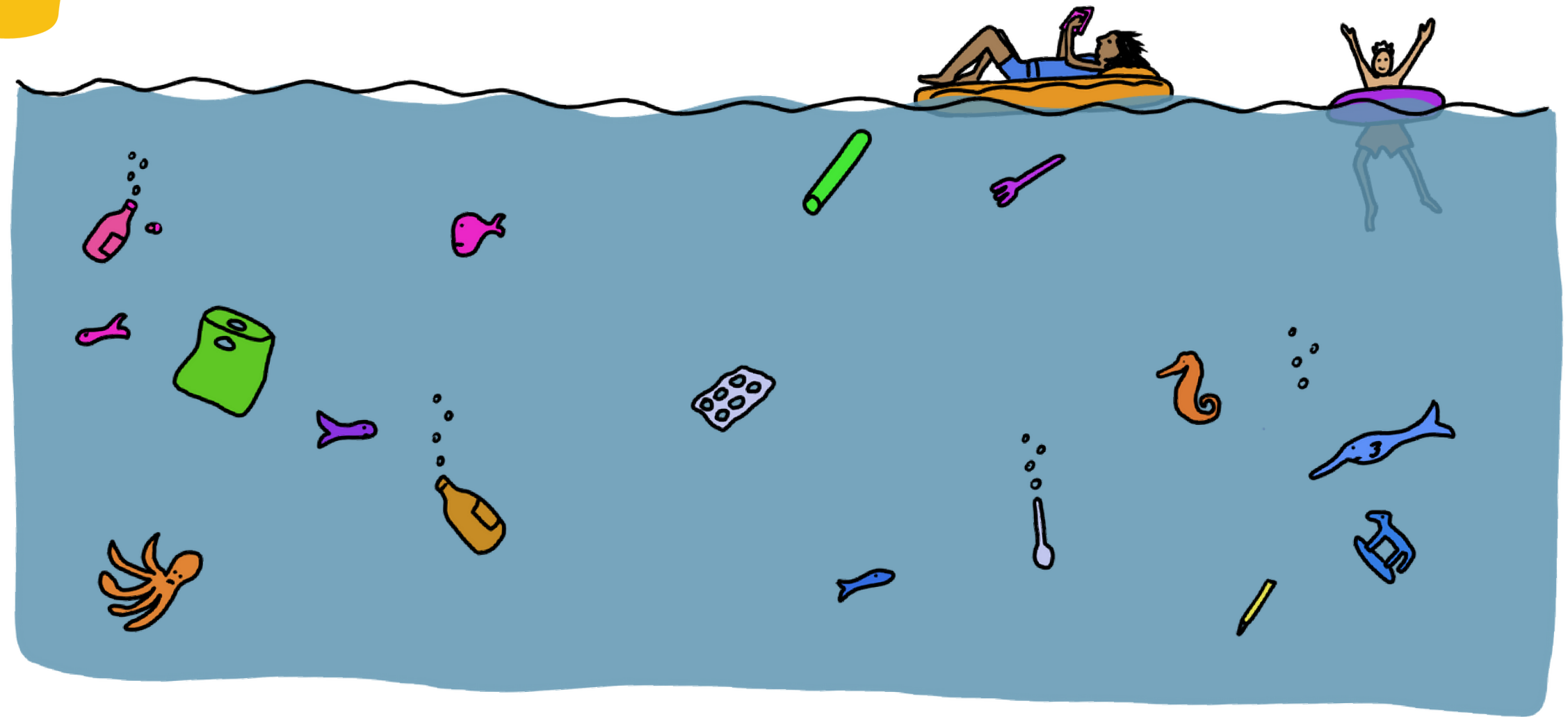
# Ocean Pollution

Dirty water from factories and towns can also make oceans unsafe for marine life.



Every year, huge amounts of plastic and rubbish end up in the ocean.

Sea animals can mistake plastic for food or become tangled in it, which can hurt or even kill them.



We need to stop rubbish and pollution from reaching the ocean by using less plastic and keeping our seas clean

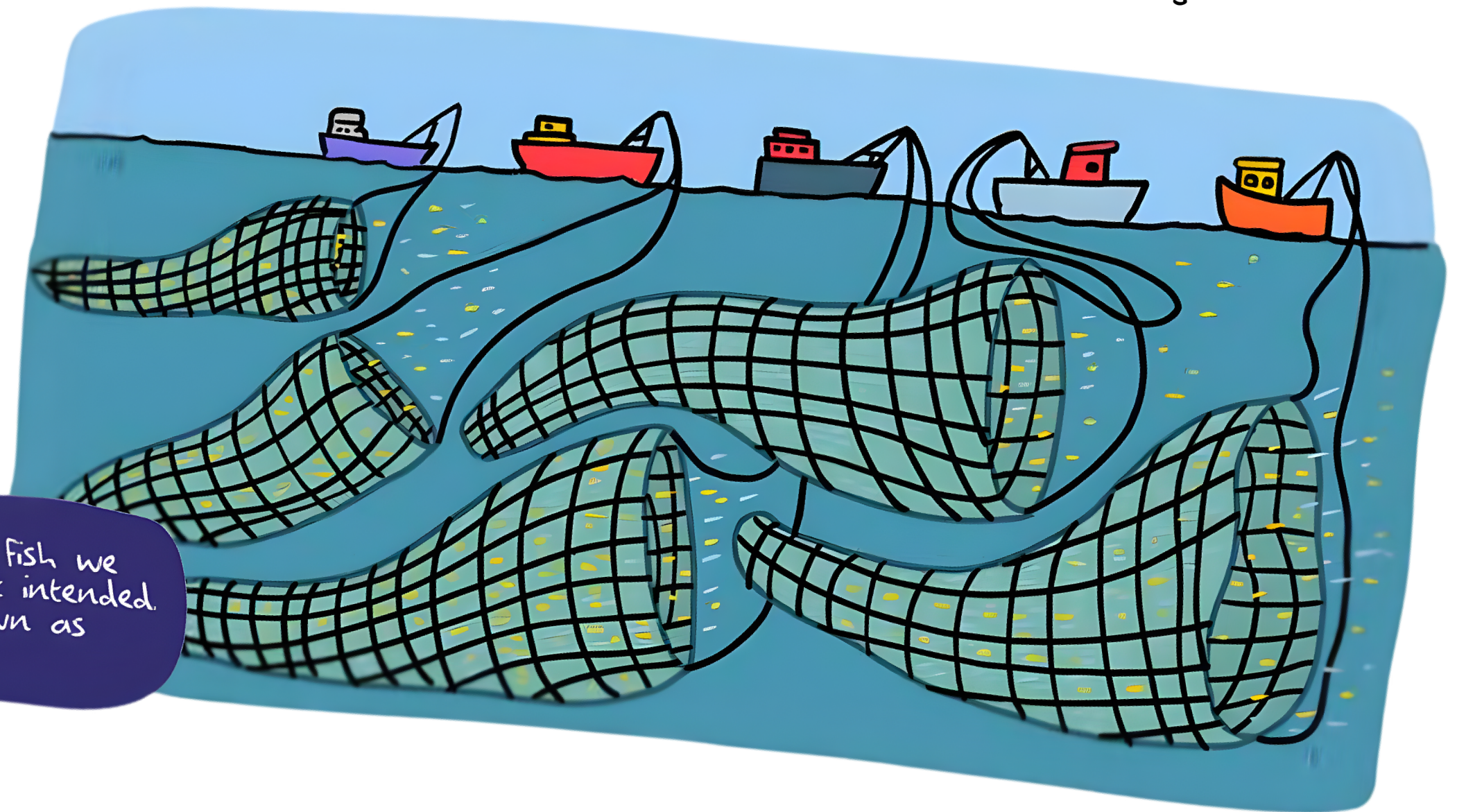


# Too Much Fishing

People around the world rely on fish for food, but sometimes too many fish are caught too quickly.

When this happens, fish don't have enough time to grow and reproduce, and the ocean can fall out of balance.

One in ten fish we catch is not intended. This is known as bycatch.

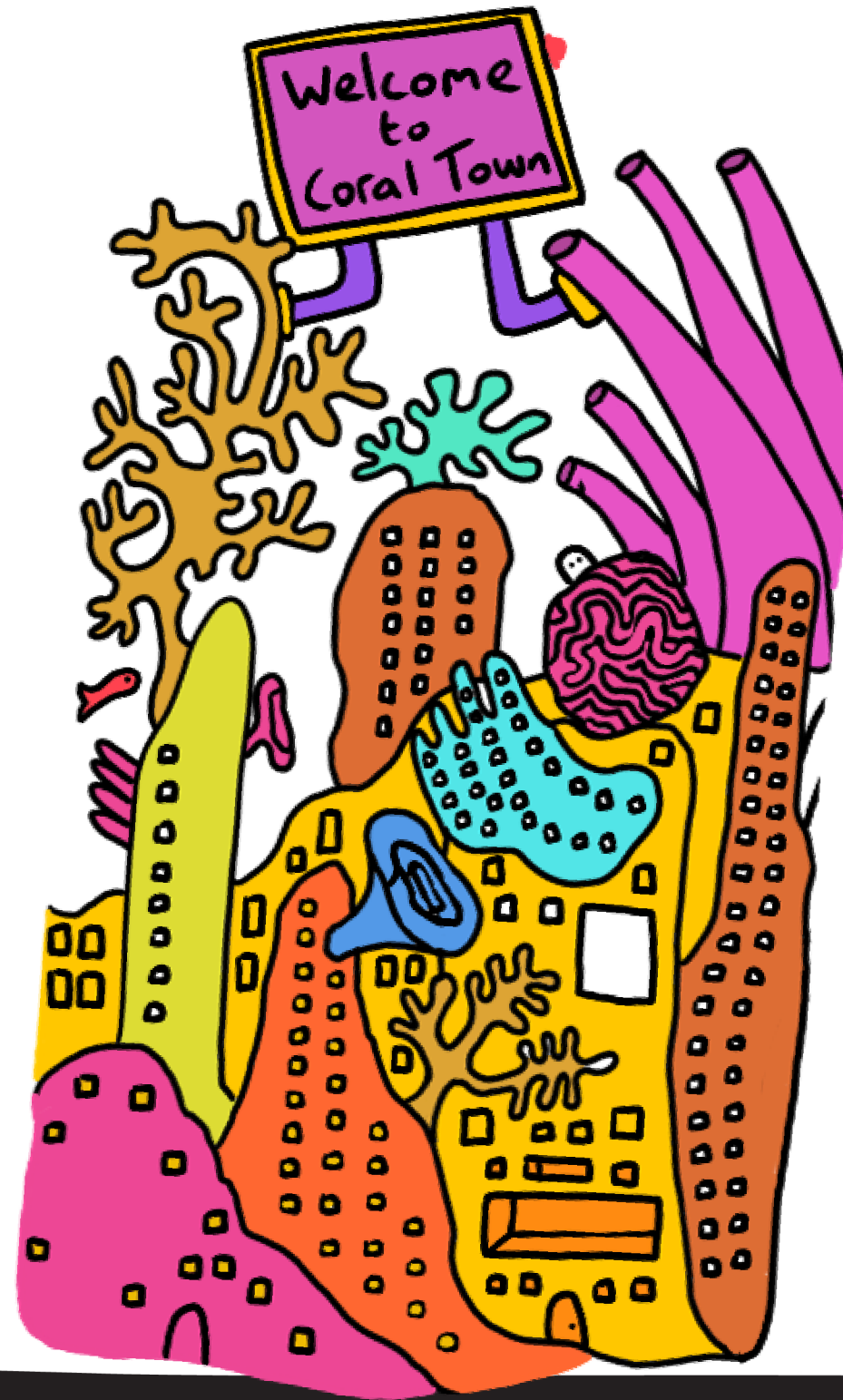


We need to catch fish in a fair and careful way so ocean life has time to recover



# Ocean Homes in Danger

The ocean is full of amazing homes like coral reefs, mangroves and seagrass meadows. These places protect coastlines and give animals safe spaces to live.



Many are being damaged by pollution, warming seas and human activity



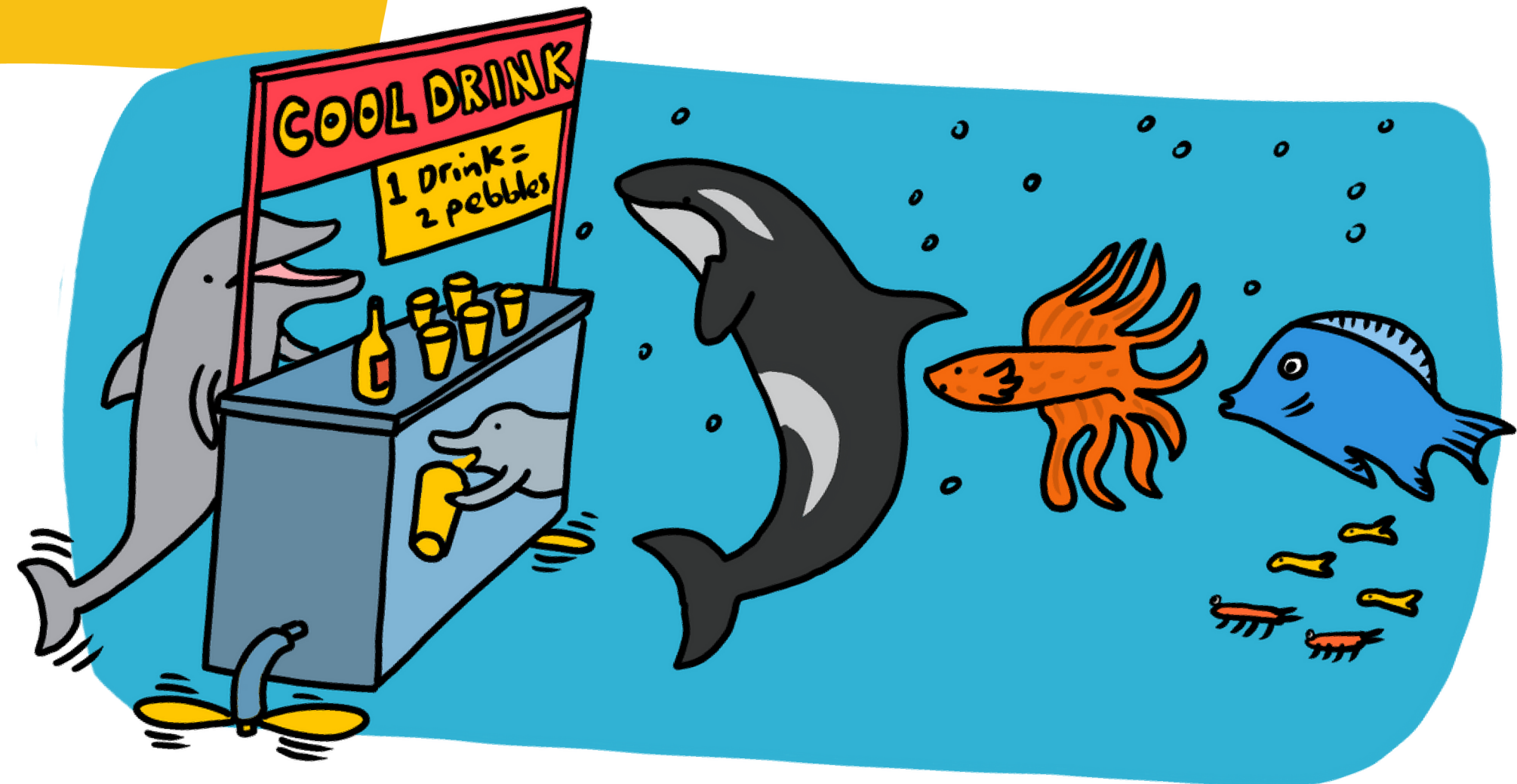
We need to protect and restore ocean habitats so sea creatures have safe places to call home

# Climate Change & the Ocean

The ocean helps protect our planet by soaking up heat and carbon dioxide.

But as the planet warms, oceans are getting hotter and more acidic.

This makes it harder for animals like corals and shellfish to survive.



We need to look after the ocean and reduce climate change so it can keep supporting life on Earth



# A World We're Still Discovering

The ocean covers most of our planet, but we've explored only a small part of it. Scientists believe millions of ocean species are still waiting to be discovered!

Learning more helps us protect the ocean better.



We need to explore, learn about and care for the ocean so we can protect life below water

# Under the Sea

Shallow shores full  
of life and light

Beach/shores



Warm light grows  
food, but little hiding

Sunlight zone



Deeper waters: darker,  
colder, plantless

Twilight zone



No light, crushing  
pressure, little food

Midnight zone

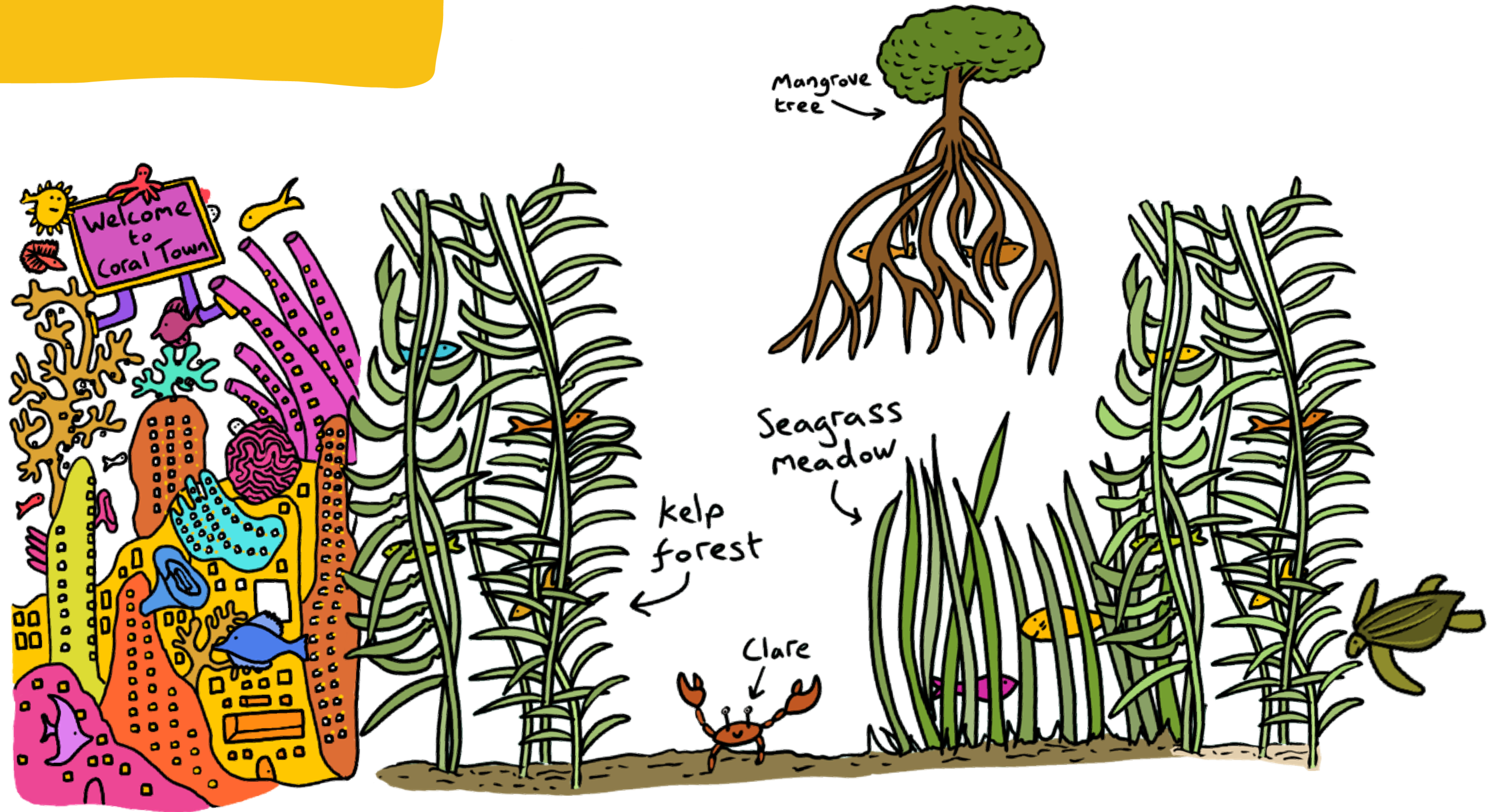




# Cool Places to Live

Ocean habitats are homes for sea life, like mangroves, kelp forests and coral reefs. Coral reefs are alive and packed with tiny corals.

Though they cover less than 1% of the ocean floor, they're home to a quarter of all marine life!





# Sea Life Superpowers

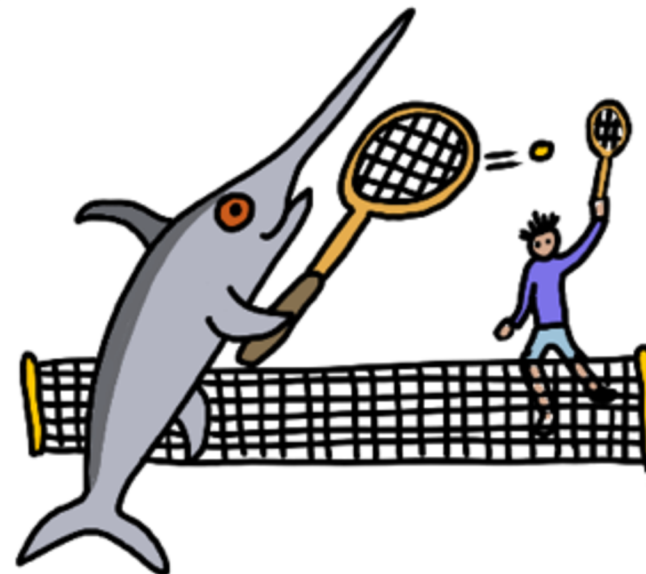
Ocean creatures have evolved over millions of years.

They have developed amazing abilities and clever tricks that help them survive - and inspire us to learn from them.



Whale song can travel as far as 10,000 miles underwater!

Swordfish eyes are as big as tennis balls!



Flounder fish can change colour and pattern so well they can hide on a chess board!!



Dolphins use sound waves to help them see!



Octopuses can taste through their tentacles and squirt ink to scare off predators!

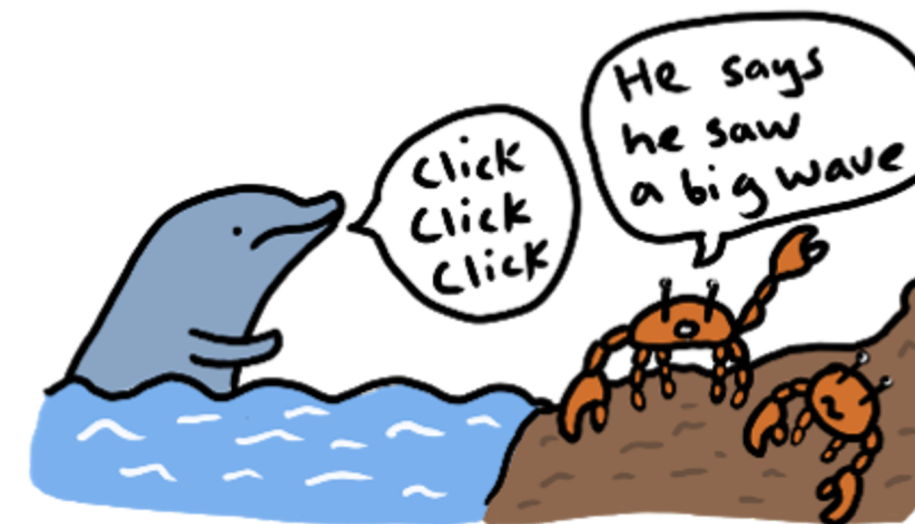
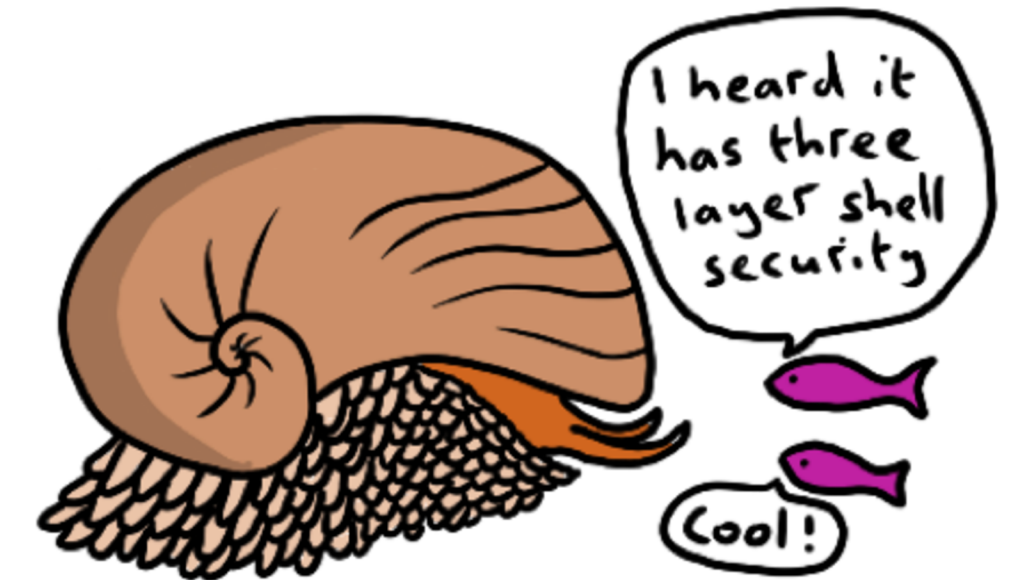
# Invention Inspiration

All of these amazing sea creatures are an endless source of inspiration for inventors!



The incredible ever-changing octopus has inspired camouflage colour-changing robots!

The deep-sea scaly-foot snail has inspired new and improved armour for soldiers with its triple layered shell!



Scientists are working out if can use the clicks dolphins make to tell if a tsunami is coming!

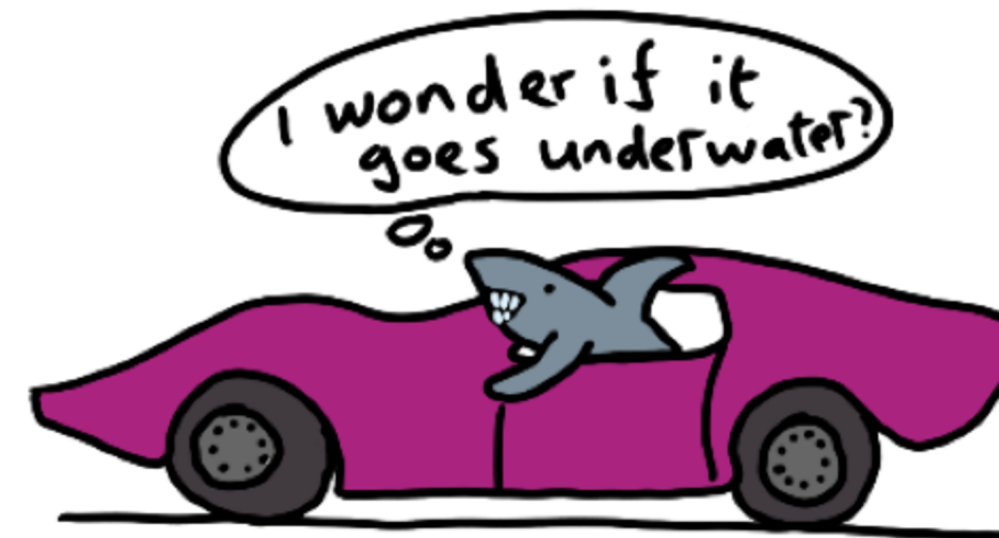


# Invention Inspiration (more...!)

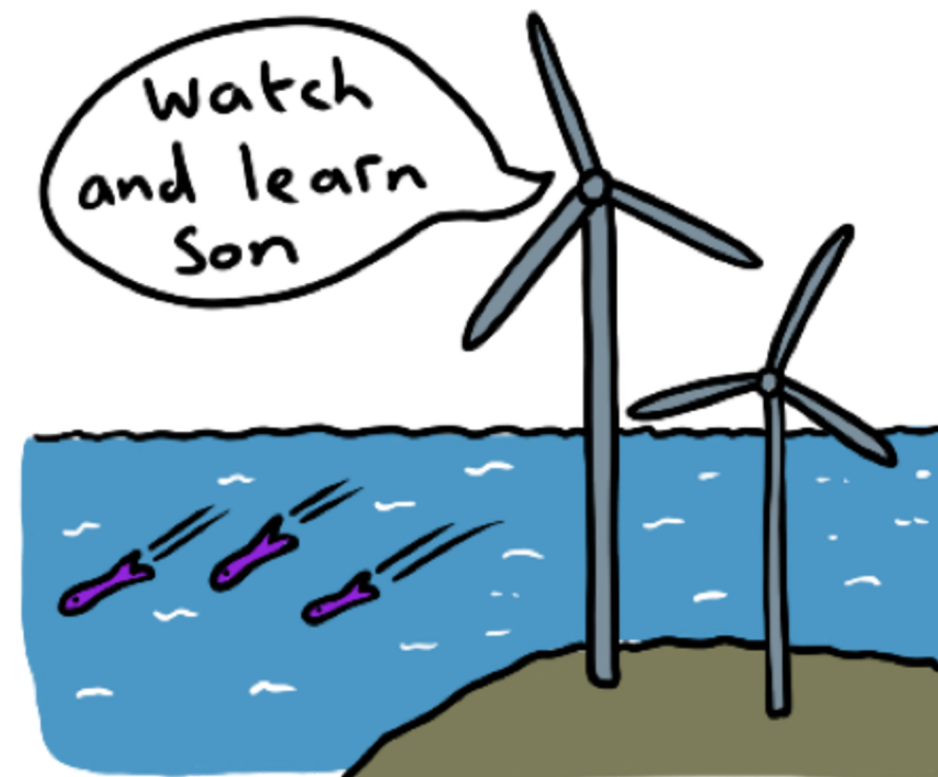
Natural ocean treasures like corals reefs and shells have inspired the designs of buildings too.



Natural ocean treasures like corals reefs and shells have inspired the designs of buildings too.



Many car designs are inspired by fish, like this car known as The Road Shark. Cool or what?!



Schools of fish move together in tight groups, twisting, turning as a team. They are being studied to see if their movement could make wind farms more efficient.



# Activity 4



Do 'What's the Story?'

Find it in the ACTIVITIES pack ➡

## It's in our hands...

We all have a responsibility to protect our oceans. Young people around the world are taking action to care for marine life and make their voices heard.

One person can protect the ocean, and together we can save it.

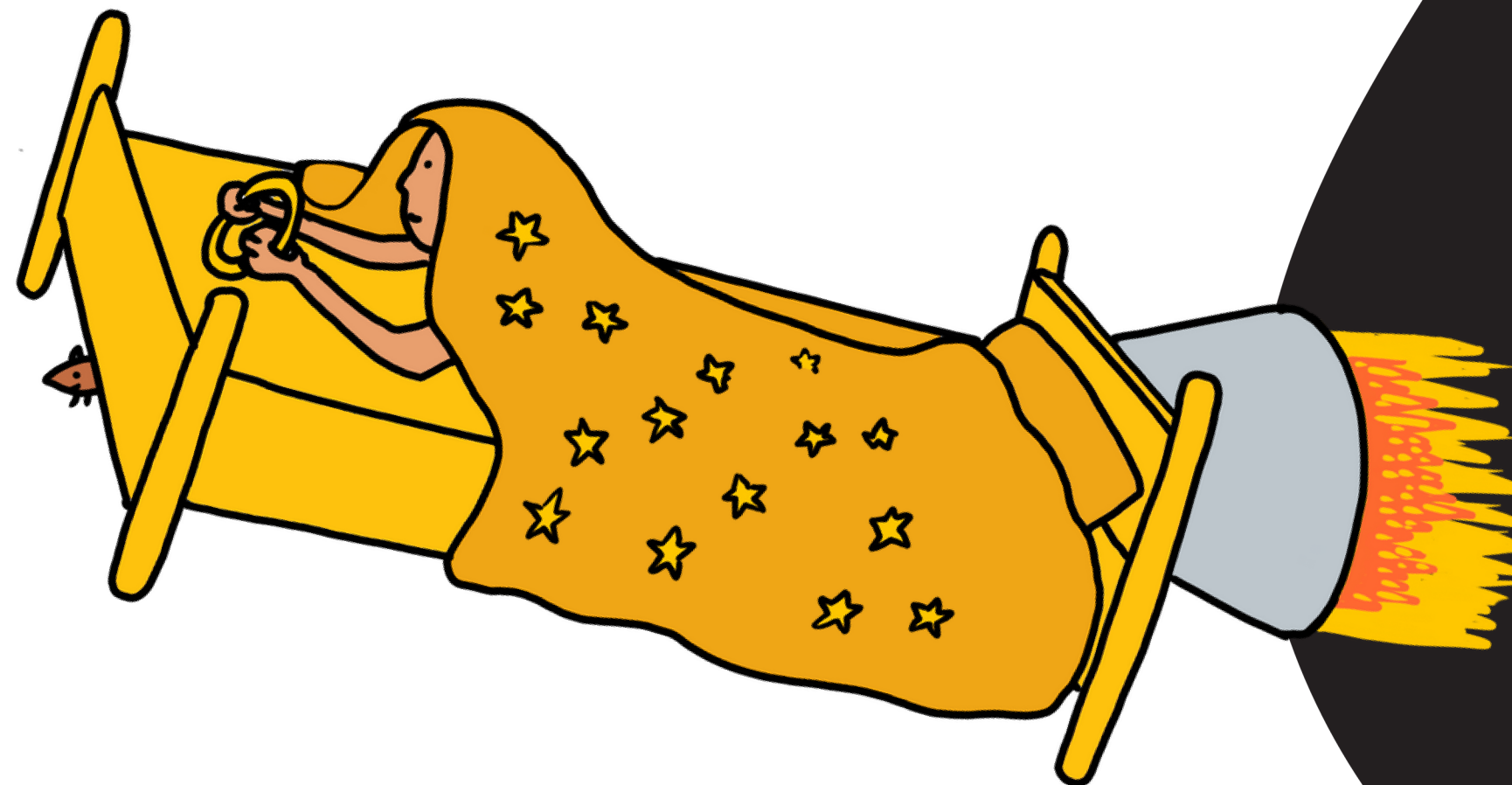


OK, Now I Feel creative!



"We are inventors for the ocean, creating ideas to protect life below water."

**Dominic Wilcox**  
Chief Inventor



Coming up  
with ideas...

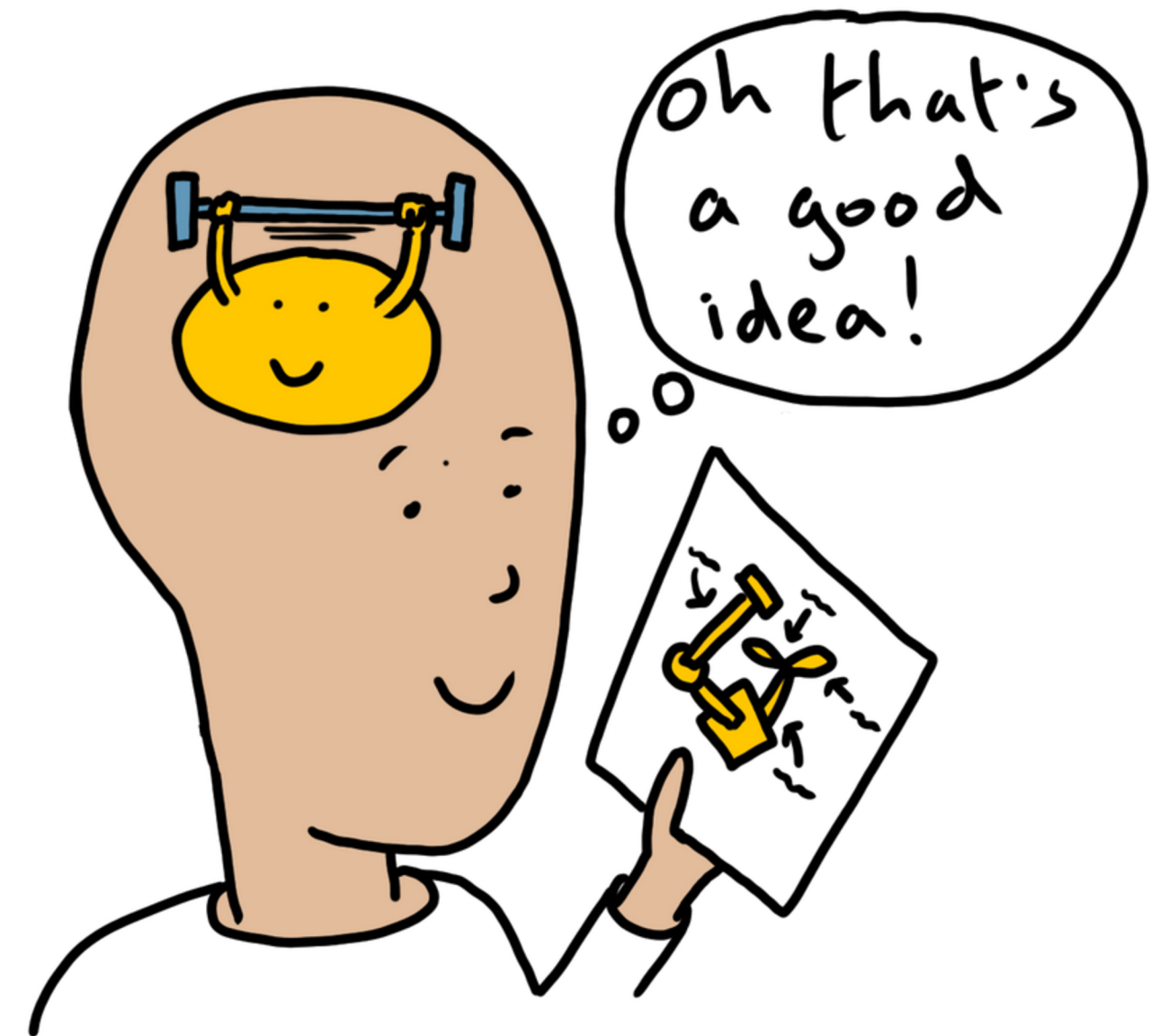




# 1

## Follow the thought

- ➡ Try to stop thinking for a minute. It's pretty much impossible!
- ➡ Our brains are constantly taking in information and working out what to do with it.
- ➡ Trust your brain and try to catch a thought, go with it, and see where it takes you!



# 2

## Who needs your help?

- Thinking about who your invention is for is a great place to start.
- It could be for someone in your family or an animal you spot while you're out and about.
- Imagine what they like, dislike, what they might find difficult or boring - how can you help them?





3

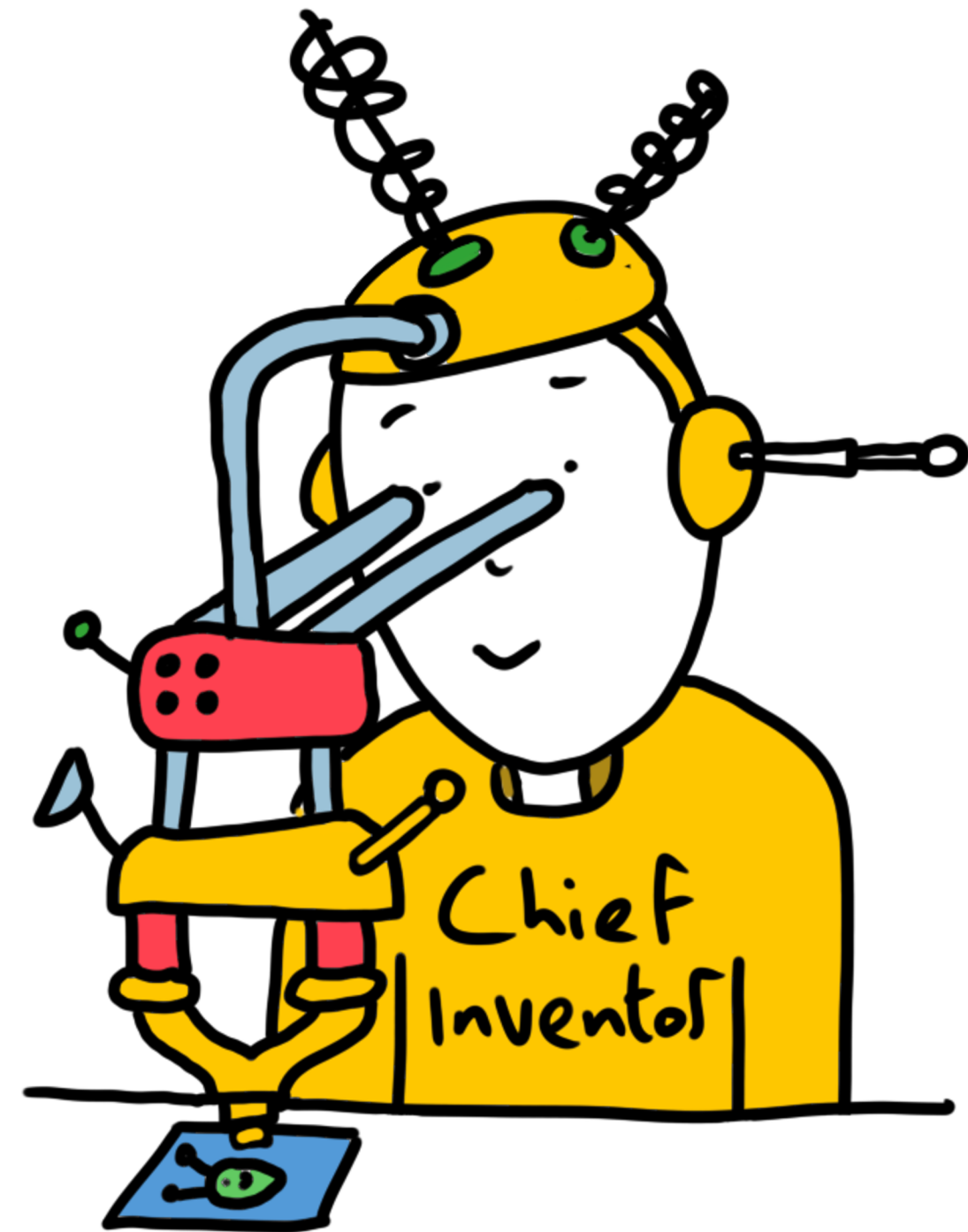
No problem too small



It might be how to help a snail go faster, how to water a cactus, or how to protect a ladybird (ladybug) from the rain.



No problem is too small to capture your inventive imagination!



# 4

## No limits!



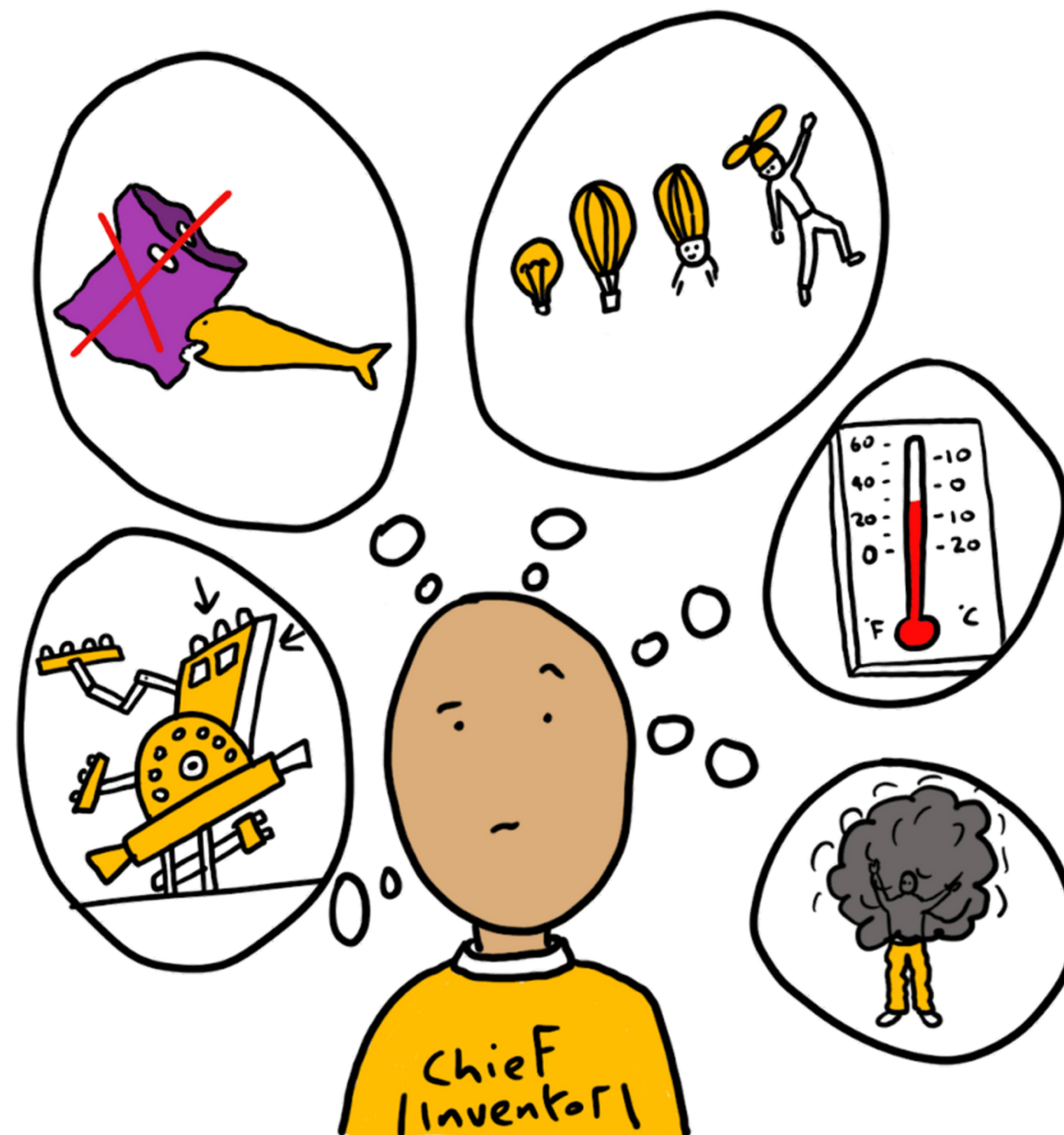
And of course, the opposite is also true - there is no problem too big to have a go at either!



If you worry about how to reduce the pollution in the atmosphere or how to make travel faster, safer and non-polluting, then have a go.



We need all kinds of ideas to help our planet be sustainable!



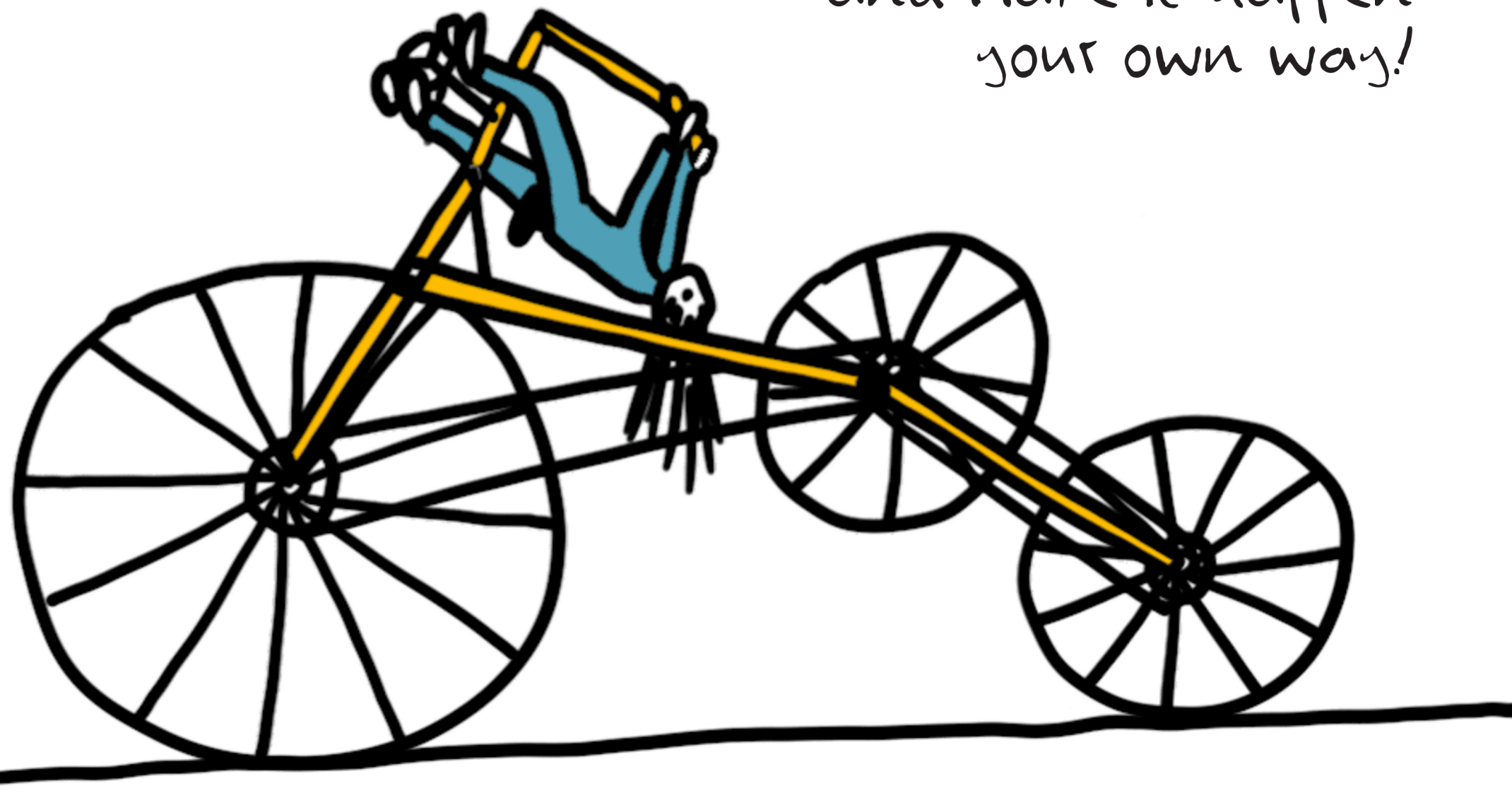


# 5

## Break the rules

New inventions happen when we try to think or do things differently - in other words, when we break the rules.

So forget how things are supposed to work and make it happen your own way!





NEVER GIVE UP!



The more  
you do it, the  
better you  
will become  
at thinking  
creatively.



keep  
thinking

Don't  
give up!

Amazing  
idea



Even if your first idea  
doesn't work, it can lead  
to better ideas. Each try  
takes you closer to an  
amazing idea.

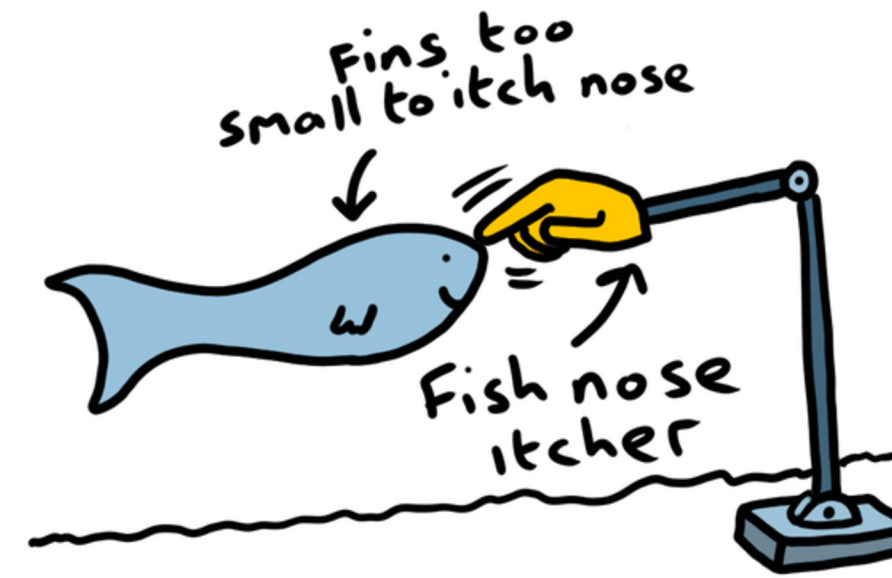


# 7

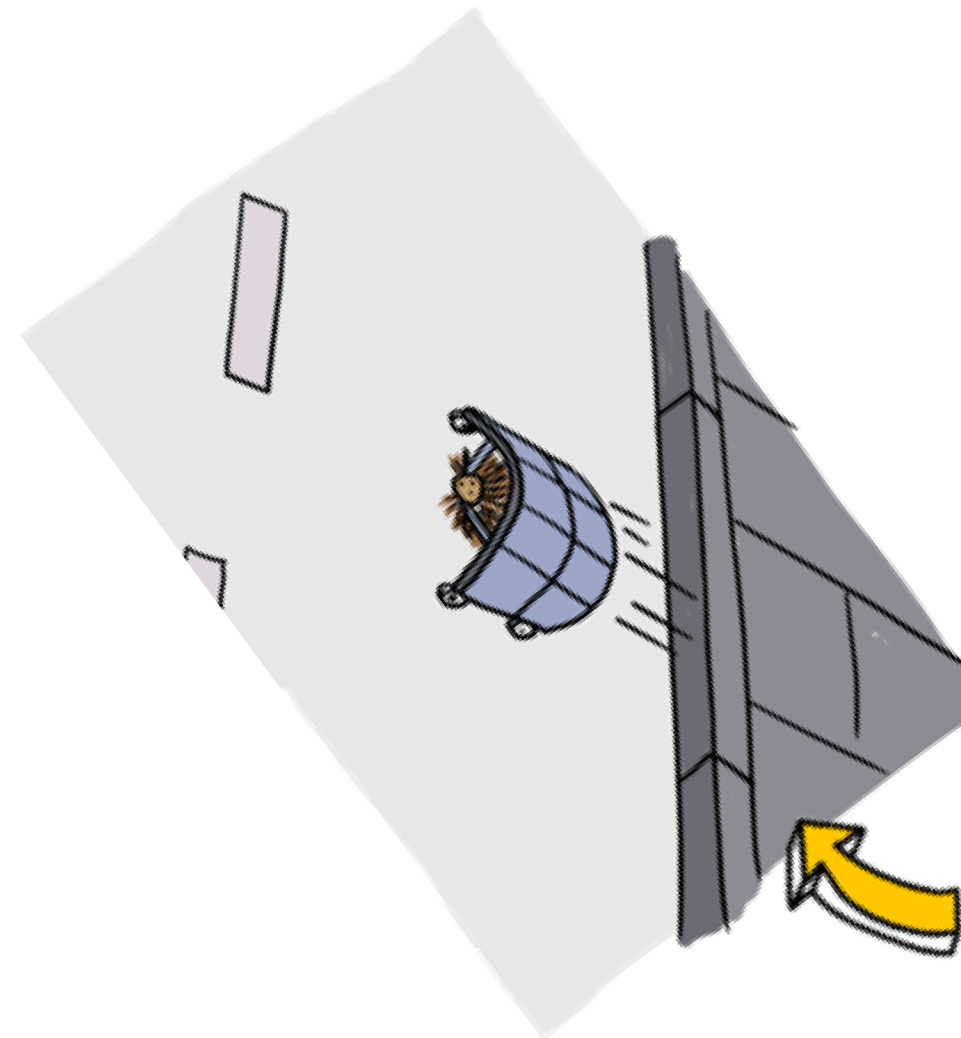
## Bonkers is BRILLIANT!

Here are some bonkers ideas from Dominic, our Chief Inventor.

Dominic loves to draw to get the ideas out of his brain and onto paper. Sometimes he doesn't even know what they'll be until he starts drawing but putting pen to paper is the first step to inventing!



Little  
Inventors  
Ingenious Ideas



Hedgehog road  
crossing device





See for yourself

Click to  
watch  
this video





# Activity 5

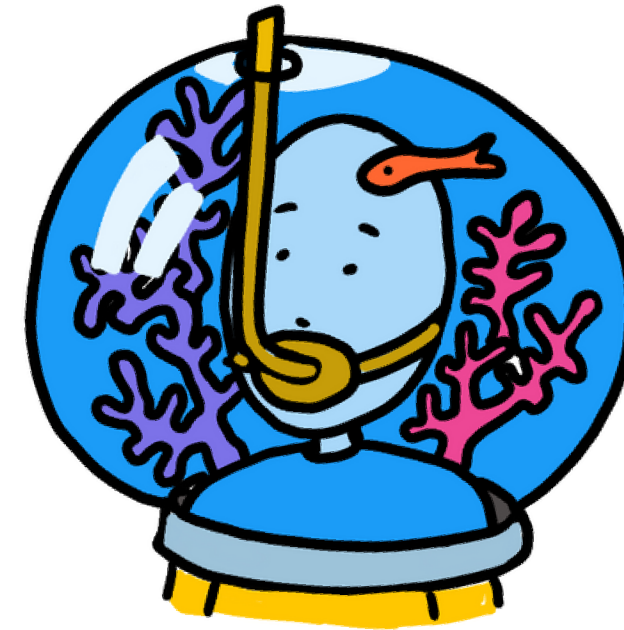


Do 'Mini Challenge  
Cards'

Find it in the ACTIVITIES pack ➡

# THE MAIN CHALLENGE!

What can you  
invent to help  
protect life below  
water?



Imagining  
what it's like  
to be a fish  
helps give  
me ideas!

Use the Invention Drawing  
Sheet in the Activity Pack!

