

PLASTIC
SUCKS!

YOU can make a difference

Dougie Poynter

MACMILLAN



First published 2019 by Macmillan Children's Books
an imprint of Pan Macmillan
The Smithson, 6-9 Briseot Street, London EC1M 5NR
Associated companies throughout the world
www.panmacmillan.com

ISBN 978-1-5290-1937-7

Text copyright © Dougie Poynter 2019
Illustrations © Macmillan Children's Books

The right of Dougie Poynter to be identified as the author of this work has been asserted by him in accordance with the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of the publisher.

Pan Macmillan does not have any control over, or any responsibility for, any author or third-party websites referred to in or on this book.

1 3 5 7 9 8 6 4 2

This book has been printed with vegetable inks on FSC papers and boards.
The cover has been finished with an oil based coating.

A CIP catalogue record for this book is available from the British Library.

Design: Janene Spencer
Editorial: Emma Young and Mike Scott

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior consent in any form of binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

Picture Credits: page 4 Shutterstock / 20 & 32 5 Gyres / 26 & 27 Huffington Post / 57 Thomas Wood / 58 Will West / 61 Land Rover / 66 Shutterstock / 88 & 91 Kate Arnell / 111 Naturalist Dara / 113 Emmanuel Lubezki / 130 Blue Ollis / 135 & 137 Scot Boston / 143 & 144 CanO Water / 147 Mother and Tongue / 158 James Rabson / 161 WWF / 171 Tom Fletcher / 172 Dougie Poynter



THIS BOOK IS DEDICATED TO
Sir David Attenborough.

The most awesome human who has ever lived.

CONTENTS

	Introduction	1
1	History of Plastic – It's Not All Bad	37
2	What's the Problem?	45
3	Let's Do Something About It!	65
4	The Culprit Line-up	115
5	Smells Like Entrepreneurial Spirit	139
6	Be Like the Bees	165
	Meet the Experts	176
	Glossary	182
	About the Author & Acknowledgements	184





**OUR BEAUTIFUL
BLUE PLANET**

HAS BEEN GOING STRONG FOR

OVER 4 BILLION YEARS

(OLDER THAN YOUR GREAT-GRANDMOTHER)

**BUT NOW IT DESPERATELY NEEDS OUR HELP.
I TRIED CALLING THE AVENGERS BUT THEY ARE
BUSY SO IT'S UP TO US TO SAVE IT,
AND GUESS WHAT?**

**WE TOTALLY
HAVE THE POWER
TO DO IT!**

Hi! My name
is Dougie.

I'm from the same (I think) awesome blue planet as you: Earth. I've always thought this giant ball of rock and gas was amazing, even when I was a kid. In between jumping around in my bedroom, playing guitar (badly at the time) and skateboarding, I used to find myself glued to the TV watching nature programmes, climbing trees, observing ants that were farming aphids in the garden and breeding lizards (OK, those last two are kinda weird). I guess you could say I'm a HUGE fan of Earth.



And the thing is, Earth is in trouble. You've probably heard all this stuff before, right? I know I have.

If you're like me, then you're often left feeling confused. Why aren't the grown-ups sorting it out? Is it actually true?

CLIMATE CHANGE!

ARGHHHH!!!

**THE ICE CAPS
ARE MELTING!**

ARGHHHH!!!

DEFORESTATION!

ARGHHHH!!!

How on Earth could I help? I'm just one person out of 7.7 BILLION people on the planet! There is a lot of information flying around out there, especially now with so many different social media platforms, so it's hard to know what's really going on – and some of the info is terrifying!

'If only there was a book that pointed us in a simple and correct direction of CHANGE so we could save the world AND still have time to play football and do cool ninja chops before bed,' I hear you say. Well, ladies and gentlemen, boys and girls, cats and dogs . . . YOU'RE ALREADY READING IT!

Just by being a tad more aware of your surroundings you are helping out in a HUGE way. Somewhere along mankind's very rad evolution we picked up more bad habits than we did rubbish. Humans are very, very intelligent creatures. We went from inventing the wheel to landing on the Moon in just the blink of an eye in Earth's history. If we spill our dinner while eating in front of the TV and make a mess on the living-room floor, we usually take a tiny bit of time to clear it up. We don't want to live in our own rubbish and make our parents angry, right?

Sometimes we even change our behaviours to prevent that mess happening again - for example, by using a TV dinner tray (best invention since the wheel). If we look at our problems a little like that (Earth being our living-room and Mother



Nature being our parents), then it shouldn't be too hard to clean up some of the mess and change our behaviour without changing too much of our lifestyle. While I've been writing this book, I've been lucky enough to speak to some REALLY cool people who have told me so much about plastic pollution and what we can do to stop it. I've talked to people who've founded charities and people who have started businesses, as well as bloggers and scientists, who all have the same goal - to help protect the environment. And they all agree that . . .

that's where YOU come in.

**YOU CAN MAKE
A DIFFERENCE.**

SOME COOL THINGS

ABOUT THE PLANET

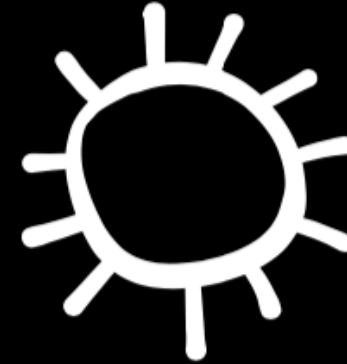
AND WHY IT

NEEDS OUR HELP

Still with me?

Cool. OK, this book is called *PLASTIC SUCKS!* but before we go into that rubbish – get the joke? – let's get into the right frame of mind. Try this. I would like you to take a second to think about our planet.

Imagine the lush green rainforests and the amazing range of wildlife living in them. Giant white waterfalls as tall as skyscrapers. Scorching deserts with huge rolling sand dunes that stretch for miles. The freezing cold polar ice caps where, even in the coldest place on Earth, life has found a way (I stole that line from *Jurassic Park*) and the gigantic blue oceans that control our climate and where we are still discovering new life. In fact, 80 per cent of our oceans are still unmapped!



EXPERT BOX

HOW DO OCEANS CONTROL THE CLIMATE?

Oceans absorb excess heat from the sun. Acting a bit like a conveyor belt, their currents bring warm water and rain from the equator to the North and South Poles, and cold water from the Poles back to the equator. This spreads the heat around the world, keeping hot countries cooler and cold countries warmer.



Now imagine all the nature you encounter at home, either in your garden or on the way to school. Even in the busiest cities and towns, nature can still be seen casually just doing its thing - all you have to do is open your eyes to it. Every living thing on Earth and in the oceans - big and small, from the crawling ant to the leaping antelope - works in delicate balance (I stole that line from *The Lion King*).

Here's an example: take a deep breath; now take another. Did you know that half of the oxygen on Earth is produced by phytoplankton? What's that, you ask? Well, phytoplankton are tiny single-celled plants found in the ocean that sit way down at the very bottom of the food chain (see next page). Around 50 per cent of the oxygen on the planet comes from those little dudes - so that second breath you took is all down to them.

OUR PLANET IS PRETTY AWESOME, RIGHT?

THE AQUATIC

FOODWEB

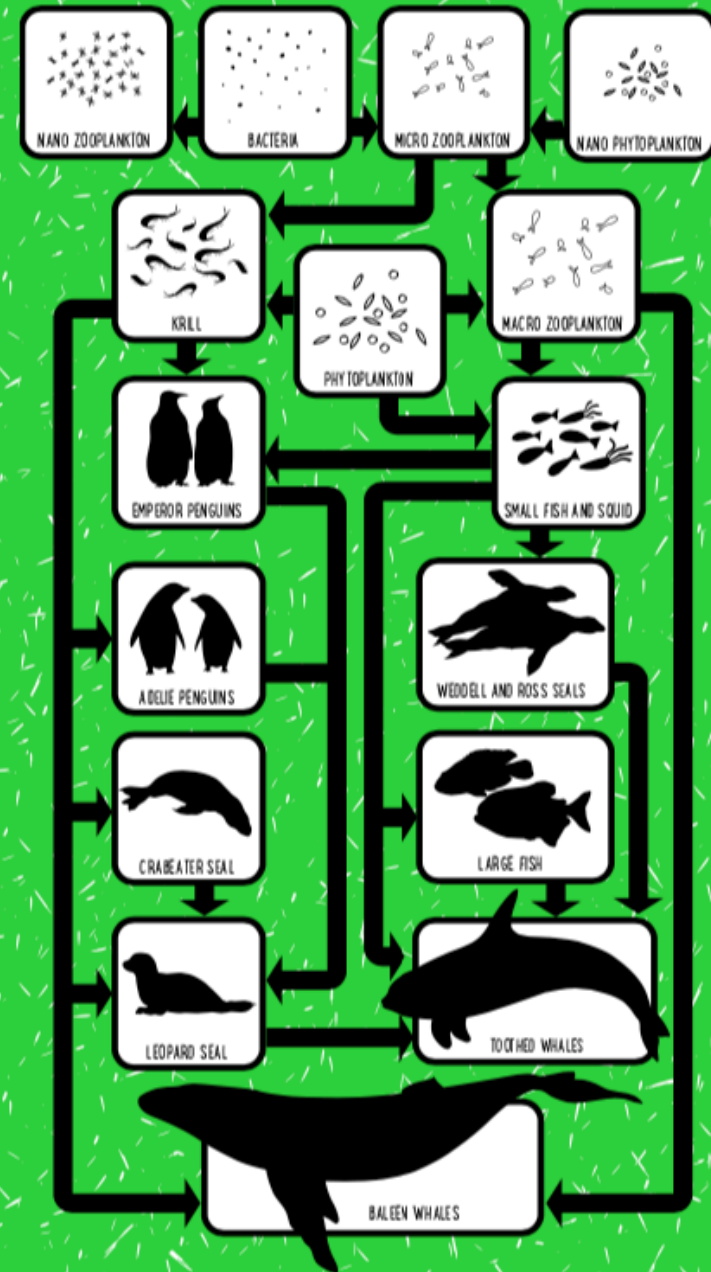
EXPERT BOX

WHAT ARE PHYTOPLANKTON?

Phytoplankton are plant-like microscopic organisms that live in watery environments, both salty and fresh. As you can see from the diagram on the opposite page, they are really important in the aquatic food web, feeding everything from microscopic plankton to enormous whales. Small fish and invertebrates also graze on them, and then those smaller animals are eaten by bigger ones.

Like land plants, phytoplankton have chlorophyll to capture sunlight, and they use photosynthesis to turn it into chemical energy. They consume carbon dioxide and release oxygen. Much of the air we breathe comes from phytoplankton and they are being harmed by plastic blocking out light and tiny plastic particles in the water affecting the food chain. If we want to survive as a human race we need to **SAVE THE PHYTOPLANKTON** by reducing the plastic in the oceans.

FOLLOW THE ARROWS TO SEE HOW EVERYTHING IS CONNECTED



PLANET EARTH BLOWS
MY MIND EVERY DAY.

In my opinion, planet Earth is the best happy accident to ever happen in the universe. Latest studies suggest that water was first on this Earth around 4.6 billion years ago. This, combined with the fact that our sun is the perfect distance away (see opposite), and a mixture of ice ages and volcanic gases (Earth farts) that create chemical reactions, means that somehow life happened.

That's the short version. OK, that's the very short version. But the planet has gone through some radical changes over the last billions of years for us to be able to climb up out of the water and slowly evolve into the amazing creatures we are today.



12

EXPERT BOX

WHAT IS THE GOLDILOCKS ZONE?

There are a few key factors that allow a planet to support life. The most important one is the presence of water. This is determined by the planet's distance from its star (so in Earth's case, the sun). If a planet does exist in a star's habitable zone - the Goldilocks Zone - and atmospheric conditions allow for liquid water to be present, then life may form.

Planets that are closer to the sun than us, like Venus, are unable to host life because they're too hot. Liquid water therefore can't exist on these planets. Other planets are too far from the sun, which means they are so cold that only water in the form of ice exists. Or the planet may even be made entirely of gas, like Neptune and Uranus. Earth, fortunately for us, is the perfect Goldilocks distance from the sun: not too far, not too close. Just right.



13

5 SCARY FACTS ABOUT OUR PLANET

1 OUR FORESTS ARE UNDER SERIOUS THREAT.

Thirty-one per cent of the Earth is covered in life-giving forests. These green areas of the world breathe in the carbon dioxide that we breathe out, and in return they produce the oxygen that we need to survive. So, as you can imagine, the more forests that are cut down, the less oxygen we have. And let's not forget about the amount of animals (more than half the species we know of) that live in these forests and are left without homes whenever we destroy their habitat.

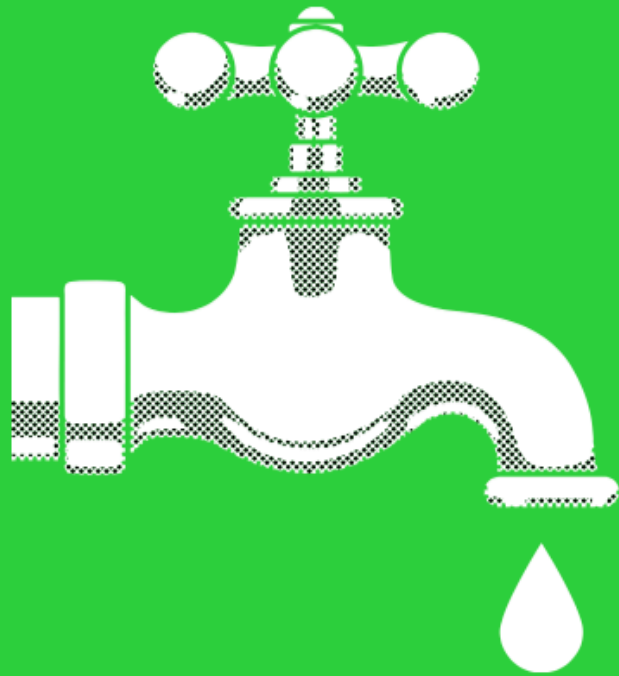


2 ANIMALS AND PLANTS ARE DISAPPEARING AT RECORD RATES.

And it's not just the big ones that are under threat, like tigers and rhinos, but also unseen yet vital insects like dung beetles and earthworms, as well fish and coral reefs in the oceans. That's not just a tragedy in itself, but it can change whole ecosystems. If you don't have lions, for example, then the zebra and gazelle populations explode and they eat all the grass and turn huge parts of Africa into deserts.

3 YOU'VE PROBABLY HEARD THAT THE CLIMATE IS CHANGING AND IS GETTING WARMER ALL THE TIME.

You might think that sounds great because there will be more sunny days, but, in fact, it is leading to big problems like rising sea levels, more droughts and more floods, more disease and more wildfires. It's younger people who are going to feel the worst effects of climate change. That's why thousands of kids around the world have been going on school strike - to tell the grown-ups to hurry up and start sorting it out!



4 THERE'S A REASON WHY EARTH IS KNOWN AS THE BLUE PLANET.

Most of it is water. That water is vital to all life and it's one of the most important reasons that we're here. However, most of it is seawater and not available to us. Only 3 per cent of it is fresh water that we can drink, and we're not taking enough care of the water that we *do* have. Most of it goes into growing crops, which is great, but it is often used wastefully so we need to be smarter about how we use it. More than a billion people don't have access to clean water and many cities around the world are running short.

5 OUR AIR IS POLLUTED.

We all take for granted the ability to get around in cars, buses, trains and planes, as well as the stuff that we use that's produced in factories around the world. But all these machines pump pollution into the atmosphere and that is bad for our health. It makes it difficult to breathe and causes all sorts of other serious problems too. On top of that, this pollution contributes to climate change and makes it harder to grow food.

So let's recap. The forests that give over 80 per cent of our plants and animals their homes are being cut down, at a rate of 60 football pitches a minute. The forests are cut down to create farmland and more space for people to live in, and for paper and wood. SCARY STUFF RIGHT? I had heard all that before too, but there was never really a SOLUTION. It seemed like it was just 'hey, isn't the planet beautiful? Well, it's being destroyed. OK bye'.

