

Published in 2018 by Ruby Tuesday Books Ltd.

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Editor: Mark J. Sachner
Designer: Emma Randall
Production: John Lingham

Photo credits:
Alamy: 20 (bottom), 22 (top), 27 (bottom); Cosmographics: 17 (top); Evoware: 29 (top right), 29 (centre); FLPA: 21, 30–31; Getty Images: 26; Istock Photo: 23 (bottom); Nature Picture Library: 5 (top), 11 (top); OceanwideImages/Gary Bell: 16 (top); Ruby Tuesday Books: 13, 14, 18; Shutterstock: Cover, 1–2, 4, 5 (bottom), 6–7, 8–9, 10, 11 (bottom), 12, 15, 17 (bottom), 19, 20 (top), 22 (bottom), 23 (top), 24–25, 27 (top), 28, 29 (top left), 31 (bottom); Skipping Rocks Lab: 29 (bottom); WashedAshore.org: 30 (bottom).

British Library Cataloguing in Publication Data (CIP) is available for this title.

ISBN 978-1-78856-022-1

Printed in Poland by L&C Printing Group

www.rubytuesdaybooks.com



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Words shown in **bold** in the text are explained in the glossary.

The download button shows there are free worksheets or other resources available. Go to:
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A Plastic Problem

We all use plastic every day. Some plastic objects make our lives safer or more fun.



But sometimes plastic is used to make things we don't actually need.

The BIG problem with plastic is that when people throw it away, it doesn't disappear.

In fact, almost every piece of plastic that's ever been made is still on Earth somewhere.



When plastic is thrown away, it often ends up in the ocean.



Up to 13 million tonnes of plastic enters the world's oceans each year. That's the same as a dumper truck of rubbish every minute of every day!



It's time to solve the problem of plastic **pollution** and everyone can help!

What Is Plastic?

Plastic is a material that's produced in factories. It is made from oil, coal, gas, **chemicals** and other materials.

Plastic objects can be made in any shape or colour.









Some fabrics, such as polyester, are made from plastics.



These tiny beads are pellets of plastic, known as **nurdles**. In factories, the pellets are heated and melted. Then the melted plastic can be shaped into different objects.



Plastic can be used to make long-lasting parts for computers, cars and planes.



Car seats and seatbelts contain plastic.

It can even be used to make plastic bones for people who have been badly injured.



However, not all plastic objects are made to be used again and again.



What kinds of plastic objects do you think might only be used for a short time?

Single-Use Plastic

Many plastic objects are made to be used once and then thrown away. They are called single-use plastics.

Shampoo bottle



Cotton buds



Plastic bag





Ketchup sachet

Straws

Cling film



Some single-use plastics may only be used for a few minutes!

Plastic balloon and string



Plastic, or polystyrene, box



Plastic cutlery

Water bottle



Cup



Crisp packet



Many single-use plastics are used to package food and drink.



Foods such as potatoes and apples have protective skins. However, many shops sell these foods wrapped in plastic that has to be thrown away.





Why do you think some shops sell potatoes and apples packaged in single-use plastic?



Let's Explore!

Check out the plastic in your home or classroom.

Can you find the following plastic objects?

- *3 things that are made to be used again and again.*
- *3 things that are single use and will soon be thrown away.*

Why Is Plastic a Problem?

A piece of single-use plastic is sometimes used for just a few hours. But after it's thrown away, it may be around forever!

If you bury an apple in the ground it **biodegrades**, or rots away, in a few months.



A biodegrading apple

If you bury a plastic bottle in the ground, it doesn't biodegrade.

In time, a plastic bottle may crack and crumble, but it will still exist as tiny pieces.



Plastic bottles on the seabed

Most of the plastic we throw away is still out there somewhere, polluting our world!



Be a Scientist!

Let's investigate how materials biodegrade in soil.

Gather your equipment:

- An apple core
- A small piece of cardboard
- A small piece of thin plastic
- A small trowel
- 3 large pebbles
- A waterproof marker pen
- A small patch of garden soil
- A notebook and pen



1. Write the words Apple, Cardboard and Plastic on the three pebbles with the marker.
2. Dig three small holes about 10 cm deep in the soil and put one material in each.
3. Fill in the holes and place a pebble on top to mark the spot. Leave the materials buried for four weeks.

How do you think each material will look after four weeks? Record your predictions in your notebook.

4. After four weeks dig up your materials.

Did your predictions match what happened?

If you wish, you can bury your materials again to see what happens next.

(At the end of the experiment, dig up the plastic and **recycle** it or throw it away.)

Plastics in Landfill

When people throw away plastic it can end up in **landfill**.

A landfill is a big hole in the ground where rubbish is buried.

Many wild animals visit landfills to find food. Sometimes they get tangled in plastic rubbish. They may even eat plastic, thinking it's food.



What Happens at a Landfill?



In a landfill plastics and other kinds of rubbish release chemicals that mix with rainwater.

If the protective plastic sheets in the hole split, **toxic** liquids can soak into the soil.

Then this pollution may trickle under the ground and flow into streams, rivers and the ocean.



How do you think plastic that's thrown away ends up in the ocean?