



Physical Changes

Chemical Sciences



Written for the Australian Curriculum: Science

Sienna Osborne | Randall Hall | Richard John

AUSTRALIAN CURRICULUM: SCIENCE

Strand:	Science Understanding, Science as a Human Endeavour
Sub-strand:	Chemical Sciences
Descriptor:	Everyday materials can be <i>physically</i> changed in a variety of ways Compare observations with those of others

SCIENCE WORDS

Physical changes, melting, solid, liquid, vapour, steam

INFORMATION FOR PARENTS OR CAREGIVER

Helping your child learn to read is a rewarding and enjoyable experience for both you and your child. Here are some ways you can help your child with their reading.

BEFORE READING

- Introduce the book; read the title and look at the picture on the front cover. Ask what the book might be about. Look through the book and talk about the pictures.
- Ask your child if they know about physical changes.
- Refer to the science words. Discuss each word and its meaning. These words will appear in the book.

DURING READING

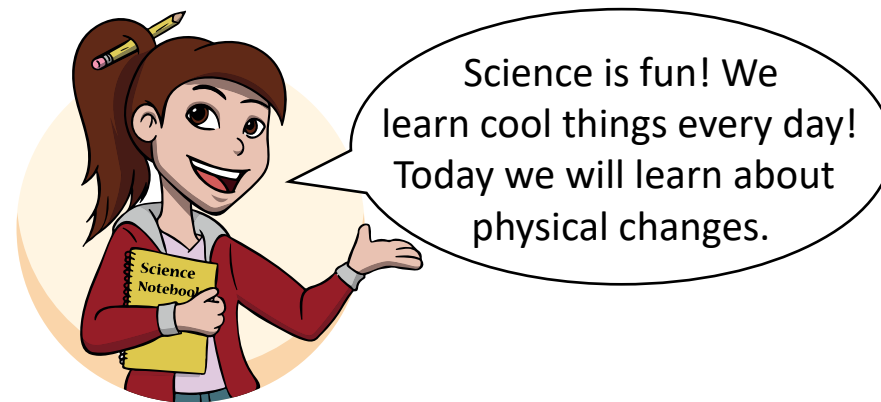
- At this level, your child should attempt to read their home reader on their own. There may be words they are unsure of. Encourage them to break these words down into their individual sounds, blending them from left to right.
- Stop your child on the pages where Suzie the Scientist appears. Discuss the science vocabulary and interesting information presented.

SCIENCE CONCEPTS IN THIS BOOK

Materials (or matter) can be changed in two ways: via physical changes and/or via chemical changes. Chemical changes of matter (or chemical reactions) involve one or more types of matter being changed to different types of matter—*new substances are formed in chemical changes*. Examples include the burning of natural gas, the digestion of food, the rusting of steel and the growth of plants via photosynthesis.

Early in the *Australian Curriculum: Science* your child will learn about **physical changes** of matter. Cutting, bending, stretching or squashing materials to change their size or shape are examples of physical changes of matter—*no new substances are formed with physical changes of matter*.

One of the most important physical changes involves a **change in state**. When ice in the *solid* state melts to form water in the *liquid* state this is a physical change—no new substances are formed. When water in the *liquid* state evaporates to form water vapour in the *gas* state this is also a physical change. Ice, water and water vapour are the same material but in different states—i.e. the **solid**, **liquid** and **gas** states respectively.



Physical Changes



Written for the Australian Curriculum: Science

Sienna Osborne | Randall Hall | Richard John

“It’s my Mum’s birthday today,”
said Locky.

“Will you help me make her
breakfast in bed?” he asked
Suzie.

“Yes,” said Suzie. “Let’s go to
the kitchen.”



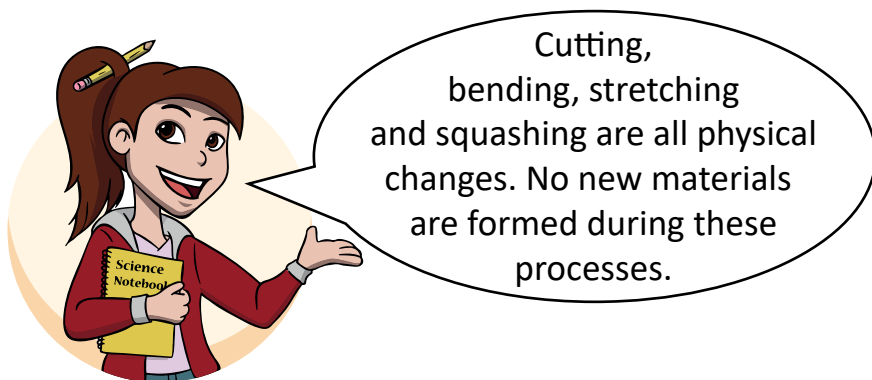
“Mum loves fruit,” said Locky.

“Let’s cut up apples, bananas and strawberries,” said Suzie.

“Look,” said Locky, “the fruit is all in pieces!”

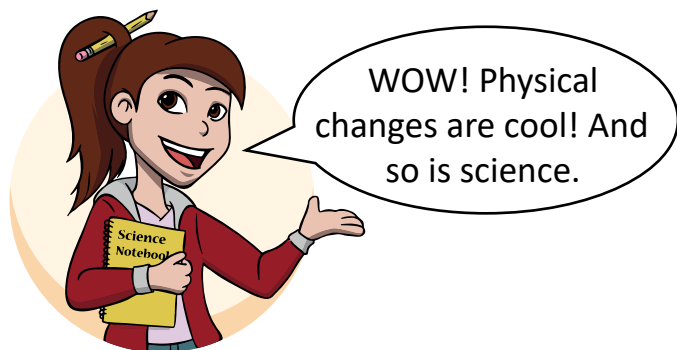
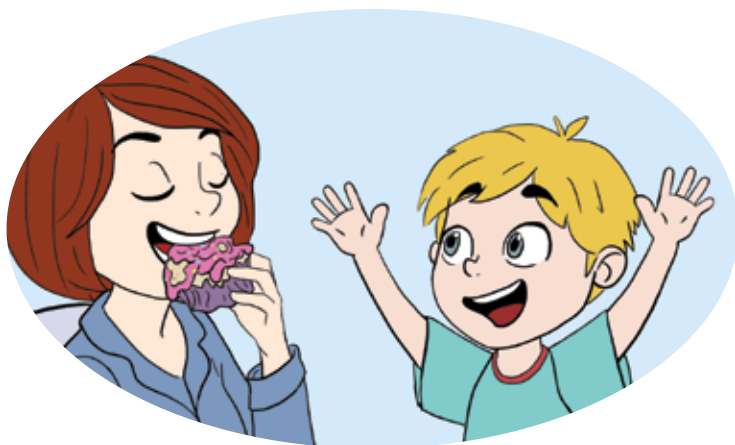
“Yes,” said Suzie. “The fruit has been cut up, but it’s still fruit.”

“It’s a physical change!”



“Don’t worry Locky,” said his mum. “It’s squashed, but it’s still cake,” she said, taking a big bite.

“It’s had a physical change!” said Locky.



AFTER READING

Ask your child what the book was about and encourage them to re-tell it in the order in which it appeared.

Discuss the following with your child to assist in understanding the content of the book:

- Can you describe one physical change in this book?
- Why do you think the butter melted on the toast? Why do you think the candle wax melted?
- When water boils it changes to steam. What do you think would happen if we put water in the freezer?
- Have you ever made breakfast in bed for someone?

First published in Australia in 2017
Publicious Pty Ltd

Copyright © Sienna Osborne, Randall Hall, Richard John 2017

Reproduction and communication

Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the Act no part of this book may be reproduced, stored in a retrieval system, communicated or transmitted in any form or by any means without prior written permission. Inquiries should be addressed to the publisher

National Library of Australia Cataloguing-in-Publication data:

Osborne, Sienna; Hall, Randall; John, Richard

Physical Changes

ISBN: 978-0-6481833-3-4

Printed in Australia

Acknowledgements

Series Illustrators: Gemma Duffill, Sam Dunn, Carissa Harris, James Elms

Series Graphic Artist: Sam Dunn

Series Consultants: Samantha Hutchinson, Gayle Brent

Consultant: Gayle Brent

Images: Shutterstock

Community Partners

The authors gratefully acknowledge the support of the following people and organisations for their assistance in the production and distribution of this series:

Jock and Beverly McIlwain, Mermaid Waters, Queensland, Australia

Griffith University, Queensland, Australia

Rotary International, Australia, District 9640

P&Cs Queensland



Physical Changes

Chemical Sciences

In this book Suzie the Scientist helps us learn about physical changes. We learn that when materials are cut or squashed to change their size and shape a physical change has occurred. Suzie also shows us that melting and dissolving materials are other example of physical changes.

Australian Curriculum: All books in the 'Suzie the Scientist' series are written for the *Australian Curriculum: Science* and align directly to what children learn in the classroom. This book addresses the learning outcome "Everyday materials can be physically changed in a variety of ways" from the Chemical Sciences sub-strand.



WOW!
Physical changes
are cool! And so is
science.

PARENTS, READ ALONG WITH SUZIE!

*Throughout this book Suzie the Scientist tells us interesting scientific facts. Use these pages to encourage further interest and discussion about **physical changes** with your child.*

Suggested Reading Level:



PM 14–16 Fountas & Pinnell H–I



ISBN 978-0-6481833-3-4



9 780648 183334 >

Publicious Pty Ltd | Gold Coast, Australia
www.suziethescientist.com.au