



Things that move

Physical Sciences



Written for the Australian Curriculum: Science

Sienna Osborne | Randall Hall | Richard John

AUSTRALIAN CURRICULUM: SCIENCE

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| Strand: | Science Understanding, Science Inquiry Skills |
| Sub-strand: | Physical Sciences |
| Descriptor: | The way objects move depends on a variety of factors, including their size and shape Science involves observing and describing events |

SCIENCE WORDS

Size, shape, up, down, push, pull, move, heavy

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 and ask what factors make it easy to move some objects and what factors make it difficult to move other objects.
- Refer to the science words. Discuss each word and its meaning. These words will appear in the book.

DURING READING

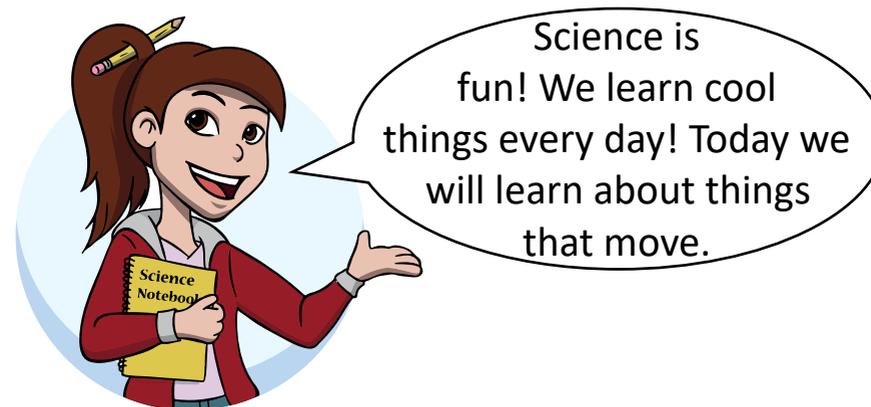
- Ensure the book is being held correctly and your child is tracking the words from left to right across the page.
- Encourage your child to look at the pictures for clues if they are unsure of a word.
- Should your child need help to decode a word, break it down into its individual sounds, and blend them together from left to right.

SCIENCE CONCEPTS IN THIS BOOK

Early in the *Australian Curriculum: Science* students are introduced to push and pull forces as a way of moving objects or stopping objects. “Unseen” forces such as gravity and friction are also introduced. Students quickly learn that size, shape and mass (or weight) are factors that influence the movement of objects.

This book introduces many of these concepts with pictorial representations of gravity (e.g. ball up, ball down), friction (e.g. the box does not roll or slide easily) and even Newton’s 2nd Law of Motion: *the acceleration of an object is directly proportional to the net force applied and inversely proportional to the object’s mass*. Newton’s 2nd Law is sometimes shown as a mathematical relationship: $F = ma$, where F is the net force applied, m is the mass of the object and a is the resultant acceleration.

In other words, the heavier something is (or the greater mass it has) the more force is required to move it to any appreciable extent. In addition, any opposing forces, such as friction, will add to the force necessary to move the object (in this case, a box).



Things that move

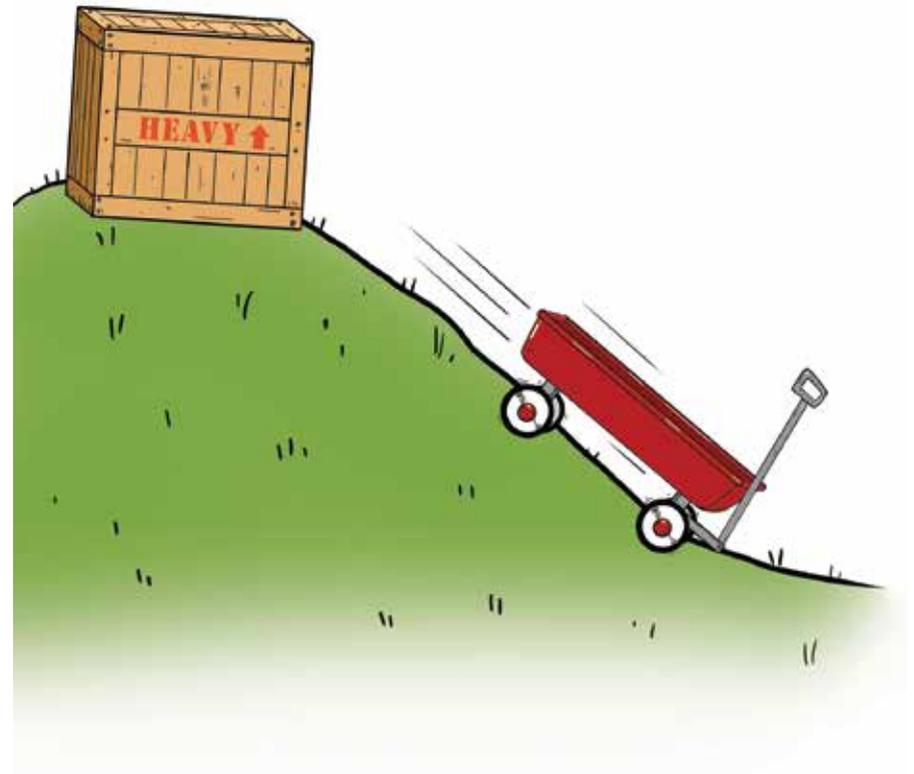


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The cart can roll down
the hill.

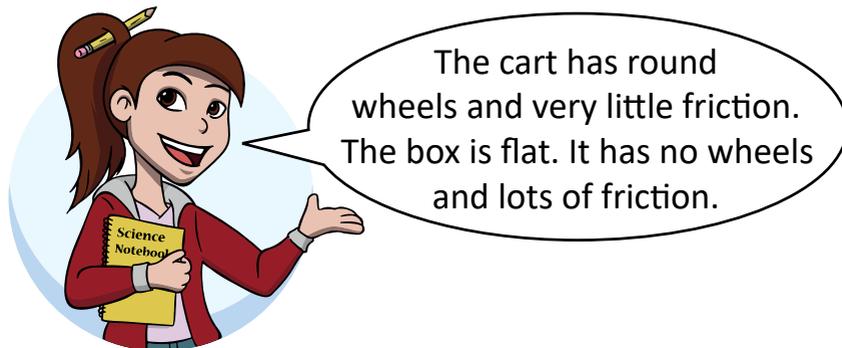
The box can not roll
down the hill.



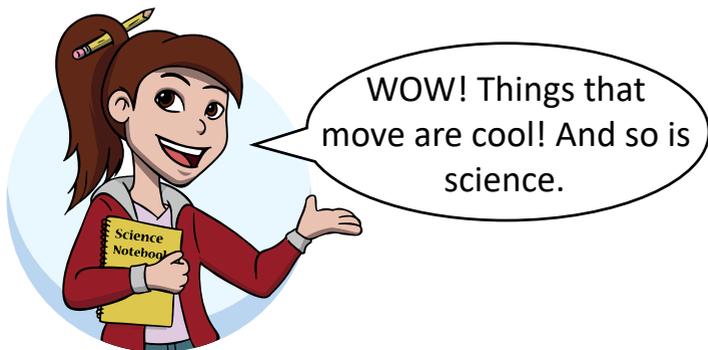
I can **push** the cart.

I can not **push** the
box.

The box is too heavy.



It depends on their size and shape.



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:

- Which object has wheels—the cart or the box?
- Which object is easiest to move—the cart or the box? Why?
- A truck has wheels. Do you think it would be easy to push a truck? Why or why not?
- What toys do you have that are easy to move?

First published in Australia in 2017
Publicious Pty Ltd

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National Library of Australia Cataloguing-in-Publication data:

Osborne, Sienna; Hall, Randall; John, Richard

Things that move

ISBN: 978-0-6481832-3-5

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

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



Things that move

Physical Sciences

In this book Suzie the Scientist helps us learn about how things move. Some things are easy to move by pushing or pulling. We can even throw some things in the air easily. But other things are hard to push, pull or throw. Suzie shows us that being able to move things depends on their size, shape and weight. She also shows us how to move things that are heavy.

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 "The way objects move depends on a variety of factors, including their size and shape" from the Physical Sciences sub-strand.



WOW! Things that move 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 **how things move** with your child.

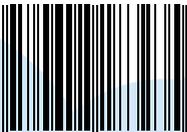
Suggested Reading Level:



PM 4-6, Fountas & Pinnell C-D



ISBN 978-0-6481832-3-5



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