



3D objects

Scott Makes a Robot

Measurement and Geometry



Written for the Australian Curriculum: Mathematics

Sara MacDonald | Randall Hall | Richard John

AUSTRALIAN CURRICULUM: MATHEMATICS

Strand:	Measurement and Geometry
Sub-strand:	Shape
Descriptor:	Describe the features of three-dimensional objects

MATHS WORDS

Shape, three-dimensional, 3D, cube, cylinder, sphere, cone, rectangular prism, face, edge, corner, equal, solid

INFORMATION FOR PARENTS OR CAREGIVERS

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 pictures. Ask your child if they know about 3D objects.
- Refer to the maths words above. Discuss each word and its meaning. These words will appear in this 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 Millie the Mathematician appears. Discuss the maths vocabulary and interesting information presented.

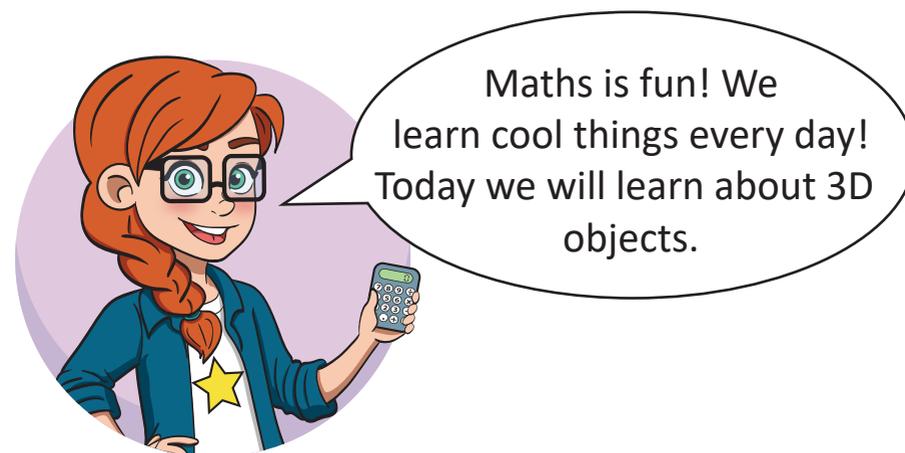
MATHS CONCEPTS IN THIS BOOK

In the early stages of the *Australian Curriculum: Mathematics*, students learn to differentiate between two-dimensional (2D) *shapes* and three-dimensional (3D) *objects*. A 2D shape is characterised by its length and breadth. A 3D object is characterised by its length, breadth *and* depth. Any geometrical object that has three dimensions is referred to as a 3D object or as a 'solid' object.

3D objects typically have a 2D shape as their base. For example: a cube has a square as its base; a rectangular prism has a rectangle as its base; and cylinders and cones have circles as their base.

When we describe the features of 3D objects, we use the number of faces, edges and corners as characterising features. Corners (sometimes referred to as vertices) are where lines meet. Faces and edges can be straight or curved.

At this stage of learning, students should become familiar with cubes, rectangular prisms, spheres, cones, cylinders, square pyramids and triangular pyramids.



Scott Makes a Robot



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Scott loves to draw pictures using different types of shapes. He has a big book where he keeps all his best drawings.

Using shapes, Scott draws trains, rockets, boats and dinosaurs, but he likes to draw robots the most.

Scott draws robots using triangles, circles, squares and rectangles.



Millie the Mathematician looks at Scott's book.

"What a great robot," she says.

"Did you know we can make a robot out of 3D objects so it looks just like your drawing?" she adds. "If it's a 3D robot we can pick it up, move it and play with it!"

"Can we try?" asks Scott.

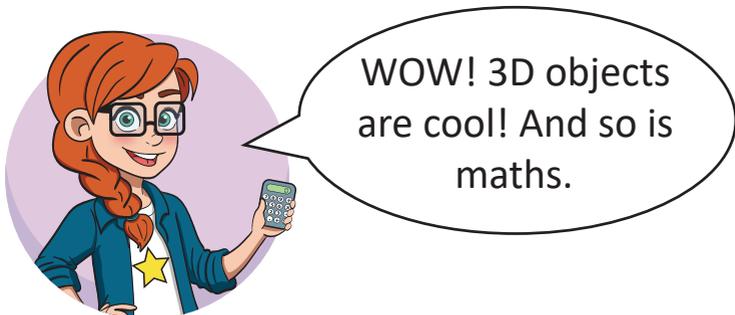
"Yes," says Millie. "Let's find some 3D objects to build our robot."



3D is a name given to objects with three dimensions. Objects with three dimensions have height, width and depth.

“What a great robot we have made,”
says Millie.

“It’s perfect!” agrees Scott.



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 them to understand the content of the book.

- Which 3D object has all edges the same length?
- Which 3D objects in the book have the same number of faces, but a different number of edges?
- Why do you think 3D objects are sometimes called solid objects?
- What 3D objects could you use to make a toy car?

First published in Australia in 2018
Griffith University

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National Library of Australia Cataloguing-in-Publication data:

MacDonald, Sara; Hall, Randall; John, Richard

Scott Makes a Robot

ISBN: 978-0-6484080-2-4

Printed in Australia

Acknowledgements

Series Illustrators: Carissa Harris, James Elms, Gemma Duffill

Series Graphic Artist: Carissa Harris

Cover Design: Sam Dunn

Series Consultants: Samantha Hutchinson, Gayle Brent, John Robertson

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

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Scott Makes a Robot

Measurement and Geometry

Book 22 of 24

In this book Millie the Mathematician helps us learn to recognise and identify three-dimensional (3D) objects. As Scott builds a robot from common, every-day items, we learn the characteristic features of different 3D objects and identify them by the number of faces, edges and corners they have. We also learn that 3D objects differ from 2D shapes by having 'depth' as well as length and breadth.

Australian Curriculum: All books in the 'Millie the Mathematician' series are written for the *Australian Curriculum: Mathematics* and align directly to what children learn in the classroom. This book addresses content from the *Measurement and Geometry* strand within the *Shape* sub-strand. The specific Australian Curriculum content descriptor addressed is: "Describe the features of three-dimensional objects."

PARENTS, READ ALONG WITH MILLIE!



WOW! 3D objects are cool! And so is maths.

Throughout this book Millie the Mathematician tells us interesting mathematical facts. Use these prompts to encourage further interest and discussion about **three-dimensional objects** with your child.

Suggested Reading Level:



PM 20-24, Fountas and Pinnell K-O

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ISBN 978-0-6464080-2-4



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