

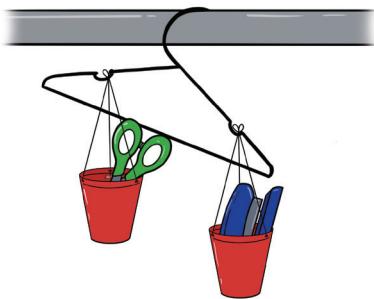
Millie the Mathematician says

Let's learn about...

Comparing masses

Which is Heavier?

Measurement and Geometry



Written for the Australian Curriculum: Mathematics

Sara MacDonald | Randall Hall | Richard John

AUSTRALIAN CURRICULUM: MATHEMATICS

Strand:	Measurement and Geometry
Sub-strand:	Using units of measurement
Descriptor:	Compare masses of objects using balance scales

MATHS WORDS

Heavier, balance scales, compare, mass, length, equal, predict, prediction, level, measure

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 are familiar with the masses of objects and how to work out which is heavier using balance scales.
- Refer to the maths words above. Discuss each word and its meaning. These words will appear in this book.

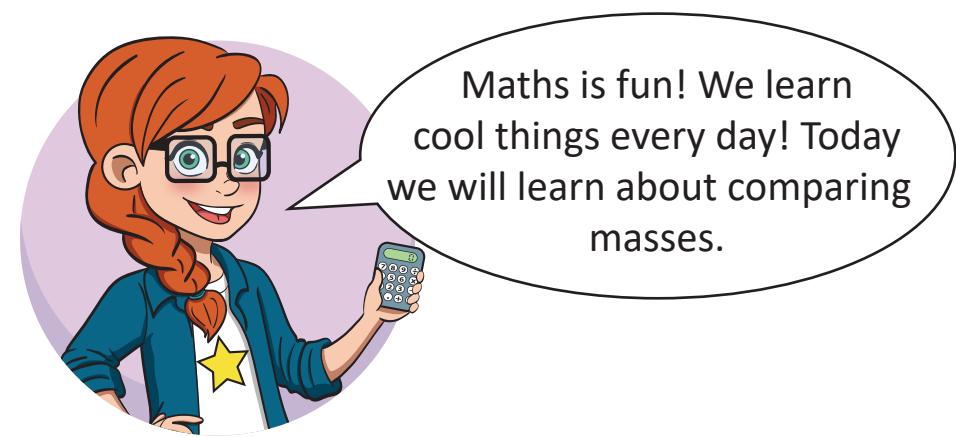
DURING READING

- At this level, your child should attempt to read their home reader on their own. They may be unsure of some words. 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.

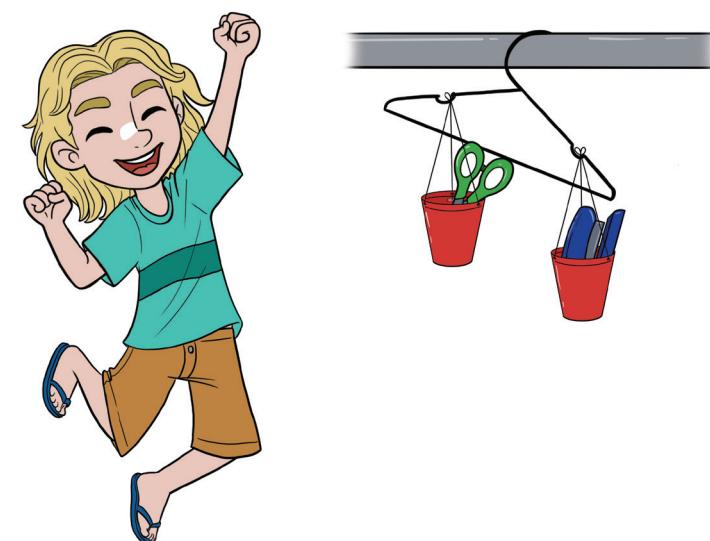
MATHS CONCEPTS IN THIS BOOK

This book addresses the *Measurement and Geometry* strand of the *Australian Curriculum: Mathematics*. In this strand, students are introduced to a range of physical quantities including length, mass, temperature and **time**. Each of these are quantified using **units of measurement** (e.g. metres or centimetres for length; kilograms or grams for mass).

In the early stages of the Australian Curriculum, students are required to compare the relative masses of everyday objects to determine which, of a pair of objects, is heavier. The mass of an object is related to the amount of matter the object contains and is proportional to how **heavy** it is. The heaviness of an object can be determined using mass (or weight) scales. One set of mass scales that students become familiar with are called **balance scales**. Balance scales work like a see-saw. They generally have a beam balanced around a central fulcrum with two pans (or cups/buckets etc.) at the end of the beam that can hold the objects to be measured. The heavier object (or the one with the greatest mass) will go down relative to the other object – in much the same way as a see-saw. In this way, the relative masses of two objects can be easily compared.



Which is Heavier?



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Ms Evans is Sid's teacher. She gives Sid a homework challenge.

"Which is heavier?" asks Ms Evans.

"This pair of scissors or this stapler?"

"Hmmm..." says Sid. "I'm not sure."

"That's the challenge!" says Ms Evans.

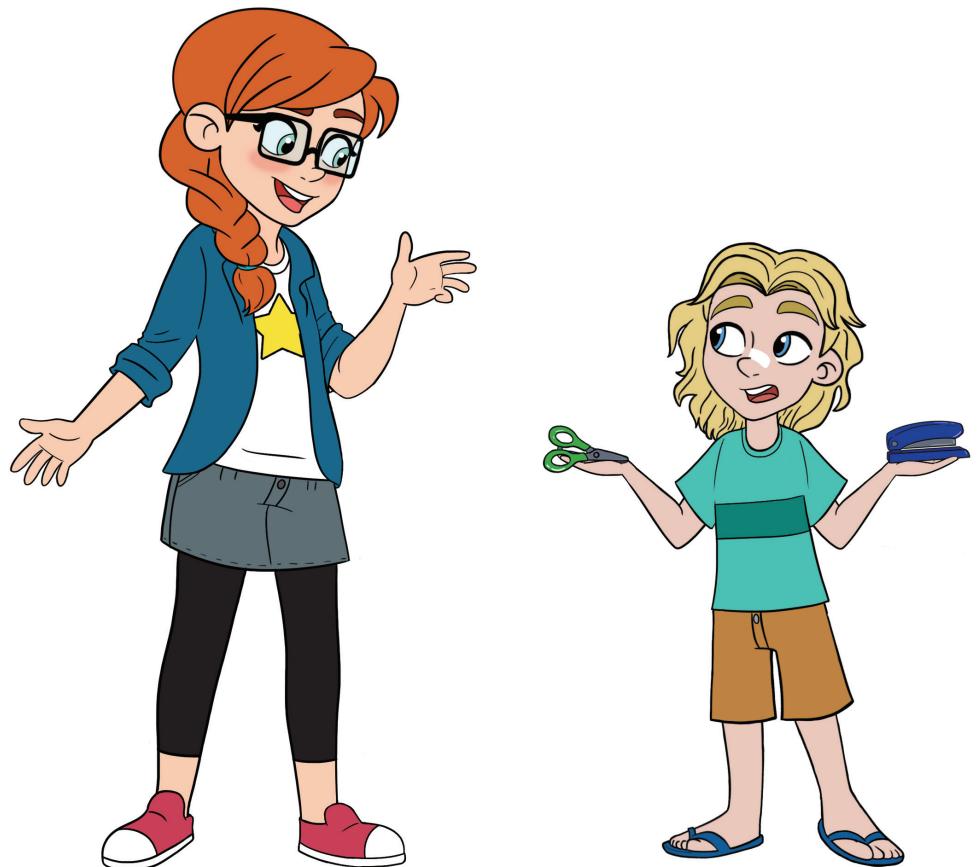
"Work out a way to find out which is heavier."



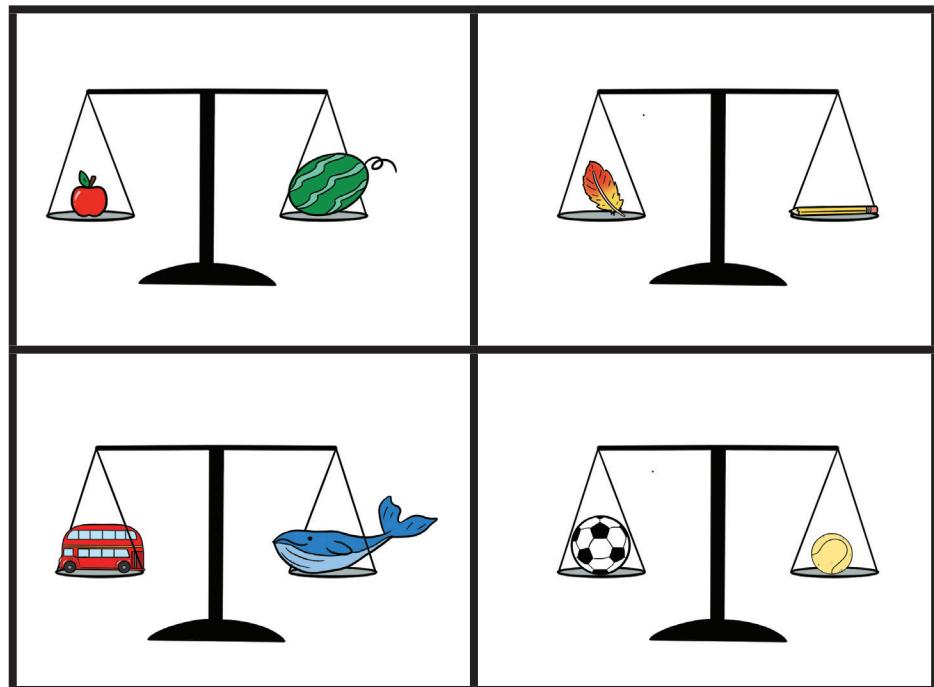
Sid asks Millie the Mathematician for help.

"I need to work out which is heavier," says Sid. "This pair of scissors or this stapler? Can you please help me?" he asks.

"Of course," says Millie. "I like challenges. This should be fun!" she adds.



Which of these pairs of objects do you think is heavier?



WOW! Comparing masses is cool! And so is maths.

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.

- What materials did Sid and Millie need to make their balance scales?
- Can you remember the steps Sid and Millie used to make the balance scales?
- Why do you think the teacher chose scissors and a stapler to compare?
- If you made some balance scales, what would you weigh?

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Which is Heavier?

Measurement and Geometry

Book 18 of 24

In this book, Millie the Mathematician helps us learn about measuring mass. She helps Sid to build a set of balance scales to compare the masses of everyday objects to work out which object is heavier. Sid also makes predictions about which object will be heavier and what will happen when objects are placed in the balance scales.

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 *Using units of measurement* sub-strand. The specific Australian Curriculum content descriptor addressed is: "Compare masses of objects using balance scales."

PARENTS, READ ALONG WITH MILLIE!

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

Suggested Reading Level:



PM 16-20, Fountas and Pinnell I-K



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