Extension Opportunities
PR1ME Scholastic

This resource outlines extension opportunities that are available for teachers using Ministry-funded maths resources from PR1ME Scholastic. This resource is designed to support teachers to focus on deepening the maths knowledge of confident learners within their year level.

Visit Tāhūrangi for more information about ordering Ministry-funded maths resources.

Ordering Ministry-funded maths resources

Guidance for teaching to the year level

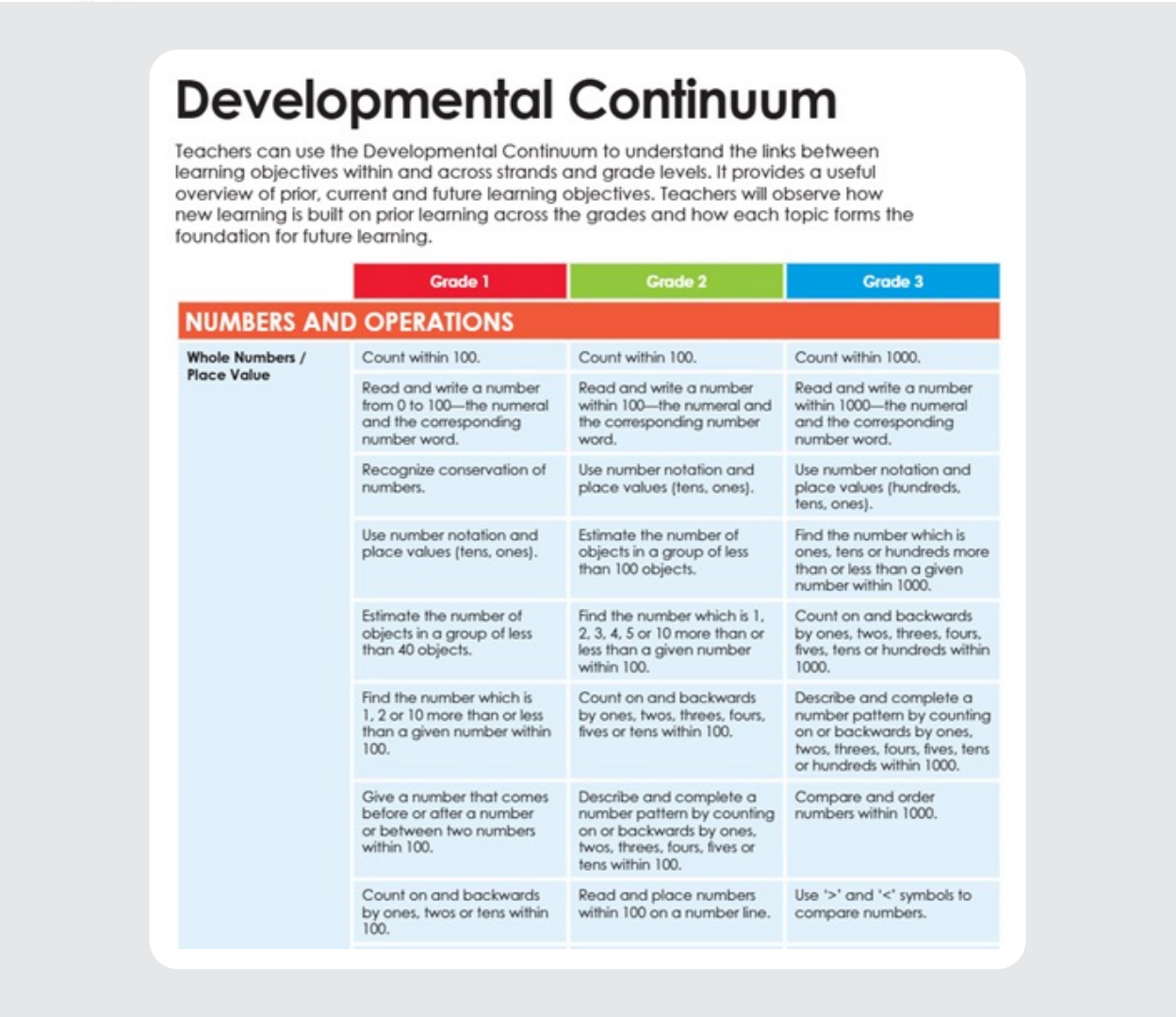
Extending students is not about accelerating confident learners beyond their year level.

Extension is about stretching and growing confident learners by offering more depth at their year level. Deep learning builds flexible, creative, and independent mathematical thinkers – traits that last well beyond the current year level.

When confident maths learners are extended, they develop the ability to transfer knowledge to new and unfamiliar contexts, tackle problems in multiple ways, communicate reasoning clearly and make meaningful mathematical connections.

Developmental Continuum opportunities for extension

PR1ME's opportunities for extension are available at the front of each Teacher Guide in the 'Developmental Continuum' section. Here is an example of what this looks like in the book. It shows how teachers can Extend or Enable students across mathematical concepts. See next page.



Developmental Continuum

Teachers can use the Developmental Continuum to understand the links between learning objectives within and across strands and grade levels. It provides a useful overview of prior, current and future learning objectives. Teachers will observe how new learning is built on prior learning across the grades and how each topic forms the foundation for future learning.

	Grade 1	Grade 2	Grade 3
NUMBERS AND OPERATIONS			
Whole Numbers / Place Value	Count within 100.	Count within 100.	Count within 1000.
	Read and write a number from 0 to 100—the numeral and the corresponding number word.	Read and write a number within 100—the numeral and the corresponding number word.	Read and write a number within 1000—the numeral and the corresponding number word.
	Recognize conservation of numbers.	Use number notation and place values (tens, ones).	Use number notation and place values (hundreds, tens, ones).
	Use number notation and place values (tens, ones).	Estimate the number of objects in a group of less than 100 objects.	Find the number which is ones, tens or hundreds more than or less than a given number within 1000.
	Estimate the number of objects in a group of less than 40 objects.	Find the number which is 1, 2, 3, 4, 5 or 10 more than or less than a given number within 100.	Count on and backwards by ones, twos, threes, fours, fives, tens or hundreds within 1000.
	Find the number which is 1, 2 or 10 more than or less than a given number within 100.	Count on and backwards by ones, twos, threes, fours, fives or tens within 100.	Describe and complete a number pattern by counting on or backwards by ones, twos, threes, fours, fives, tens or hundreds within 1000.
	Give a number that comes before or after a number or between two numbers within 100.	Describe and complete a number pattern by counting on or backwards by ones, twos, threes, fours, fives or tens within 100.	Compare and order numbers within 1000.
	Count on and backwards by ones, twos or tens within 100.	Read and place numbers within 100 on a number line.	Use '>' and '<' symbols to compare numbers.

Books 1-6 (in physical books and MATH PRO) in each chapter of learning:

- UPAC+ (The 'Plus' in UPAC+ offers an opportunity for extension)
- Mind Stretcher
- Think About It
- Create Your Own
- Explore
- Word Problems
- 2x Mission Possible (per book)

The following are examples of what some of the extension activities listed above look like in PR1ME resources:

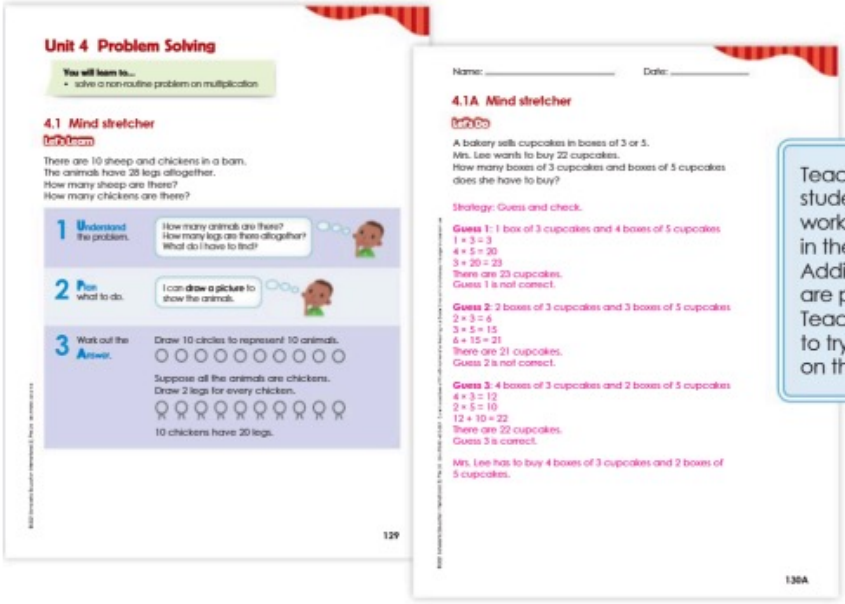
EXPLORE

Justin and Carrie collected metal cans for a recycling project. Justin collected 2.4 kilograms of metal cans. He collected 0.33 kilogram more metal cans than Carrie. What was the total mass of the metal cans collected?

How can we solve this problem? Discuss in your group and fill in columns 1 and 2.

1. What I already know that will help me solve the problem	2. What I need to find out and learn	3. What I have learned

Mind stretchers are specially crafted problems that require students to apply concepts and skills to unusual or complex problem situations and solve the problems using heuristics and higher order thinking skills. Students learn how to select, innovate and compare their strategies.



Unit 4 Problem Solving

You will learn to...
- solve a non-routine problem on multiplication

4.1 Mind stretcher

Let's Learn

There are 10 sheep and chickens in a barn.
The animals have 28 legs altogether.
How many sheep are there?
How many chickens are there?

1 Understand the problem. — How many animals are there? How many legs are there altogether? What do I have to find?

2 Plan what to do. — I can draw a picture to show the animals.

3 Work out the Answer. — Draw 10 circles to represent 10 animals.

Suppose all the animals are chickens.
Draw 2 legs for every chicken.

10 chickens have 20 legs.

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Name: _____ Date: _____

4.1A Mind stretcher

Let's Do

A bakery sells cupcakes in boxes of 3 or 5.
Mrs. Lee wants to buy 22 cupcakes.
How many boxes of 3 cupcakes and boxes of 5 cupcakes does she have to buy?

Strategy: Guess and check.

Guess 1: 1 box of 3 cupcakes and 4 boxes of 5 cupcakes
1 × 3 = 3
4 × 5 = 20
3 + 20 = 23
There are 23 cupcakes.
Guess 1 is not correct.

Guess 2: 2 boxes of 3 cupcakes and 3 boxes of 5 cupcakes
2 × 3 = 6
3 × 5 = 15
6 + 15 = 21
There are 21 cupcakes.
Guess 2 is not correct.

Guess 3: 4 boxes of 3 cupcakes and 2 boxes of 5 cupcakes
4 × 3 = 12
2 × 5 = 10
12 + 10 = 22
There are 22 cupcakes.
Guess 3 is correct.

Mrs. Lee has to buy 4 boxes of 3 cupcakes and 2 boxes of 5 cupcakes.

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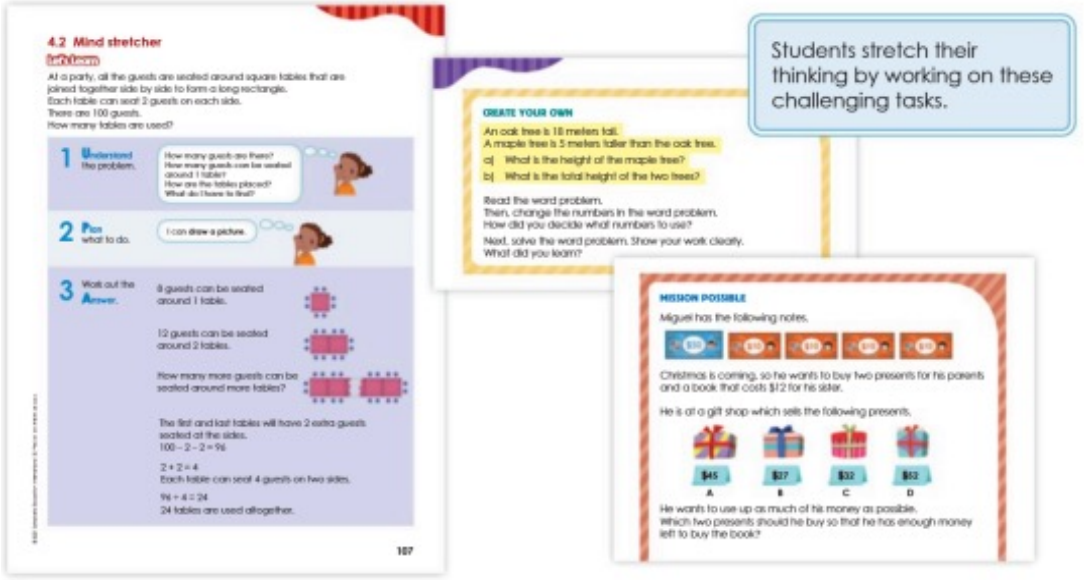
Teachers will guide students through the worked out examples in the coursebooks. Additional mind stretchers are provided in the Teaching Hub for students to try out such questions on their own.

Continued on the next page...

Mind Stretcher, **Create Your Own** and **Mission Possible** immerse students in problem solving tasks at various levels of difficulty.

pages T17–T18



Every lesson is designed to develop deep conceptual understanding and procedural fluency in every student.

CREATE YOUR OWN

Kim planted e pots of chilli plants. After she gave away _____ pots of chilli plants, there were _____ pots of chilli plants left. How many pots of chilli plants did Kim plant?

Read the word problem. Write the missing numbers.
How did you decide what numbers to use?

Next, solve the word problem. Show your work clearly.
What did you learn?

Books 4–6 (in physical books and MATH PRO):

- 2 x Mathematical Modelling

Books 1–6 (Math PRO only) – found at the end of each chapter of learning:

- Mind Stretcher (extension)
- Mathematical Journalling