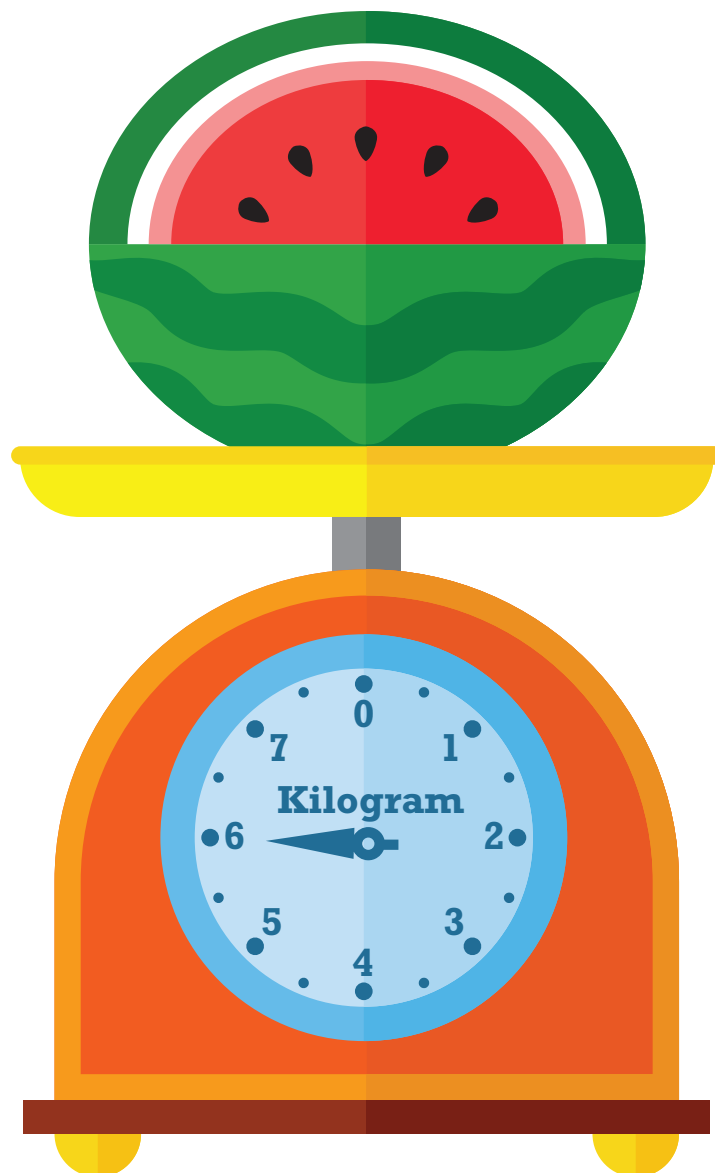


Maths Plus

Australian Curriculum

Help students build their skills, develop understanding and make connections over time



Practise, master, assess

MATHS PLUS AT A GLANCE

TEACHING AND LEARNING APPROACH

- Spiralling, also known as 'spacing'
- Supports practice and consolidation

HOW?

Students explore and revisit mathematical concepts over time, building their skills, developing understanding and making connections.

WHAT SORT OF ACTIVITIES ARE INCLUDED?

- learning, practice and consolidation activities
- problem-solving tasks
- extra support and extension activities
- mental and homework activities

LEARNING OUTCOME

The spiralling approach helps students develop robust recall of information, consolidating learning and increasing their mathematical fluency.

STUDENT RESOURCES

- Student Books
- Student Dashboards
- Assessment Books
- Mental and Homework Books

TEACHER RESOURCES

Teacher Books

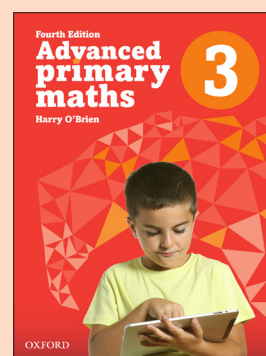
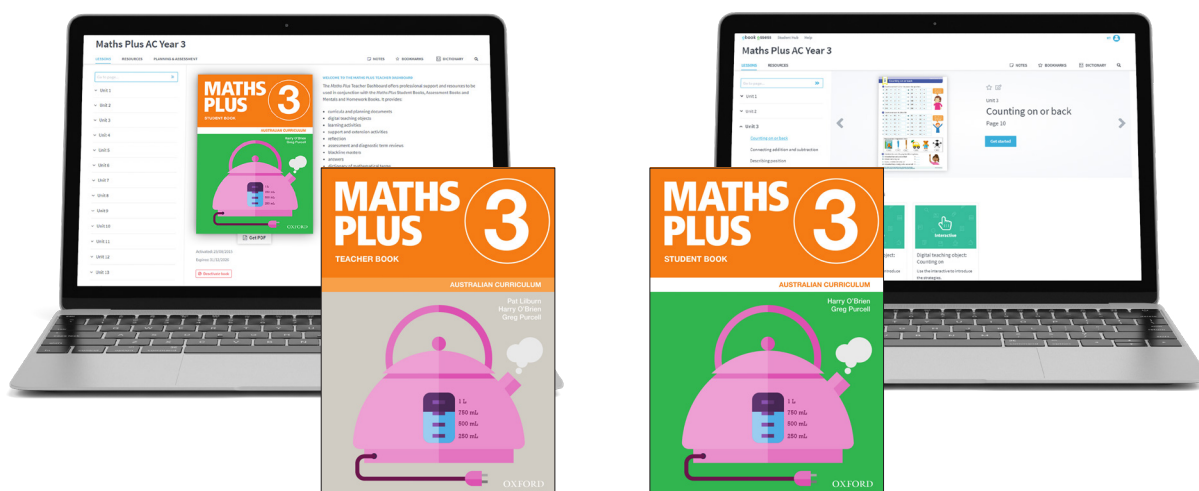
Teacher Dashboard, which provides online access to a wealth of resources and support material for Foundation to Year 6, including:

- **Teaching resources**
 - interactive teaching tools to introduce concepts
 - blackline masters and investigations
 - lesson plans and learning support
 - potential difficulties video tutorials
- **Planning and assessment material**
 - curricula and planning documents
 - assessment tests and diagnostic term reviews
 - dictionary of mathematical terms
 - answers

CURRICULUM ALIGNMENT

The series is fully aligned with the Australian Curriculum: Mathematics – Number and Algebra, Measurement and Geometry, and Statistics and Probability.

What does *Maths Plus* look like in the classroom?



1

Plan and implement teaching

Use the Teacher Dashboard or Teacher Book to access lesson plans and learning support, including explicit references to the Student Books.

2

Practise

The Student Books and Student Dashboards provide multiple problem-solving opportunities for the students to explore and practise mathematical concepts.

4

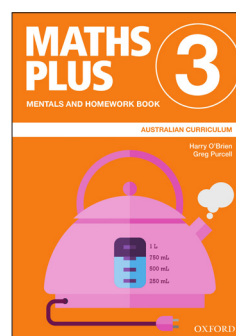
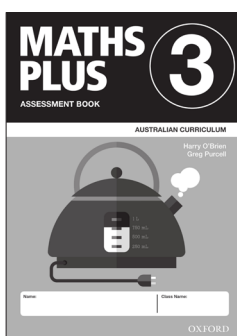
Assess the results

Use the post-tests to measure student growth and report on competency and understanding.

3

Master

The Mentals and Homework Books allow students to practise their skills, consolidate understanding and increase fluency.



Challenge and extend

Advanced Primary Maths is an accelerated program of mathematics that can be used in conjunction with *Math Plus*.

It engages and extends students in Years 3 to 6, and supports the effective teaching of mathematics through problem solving and open-ended learning in real-world contexts.

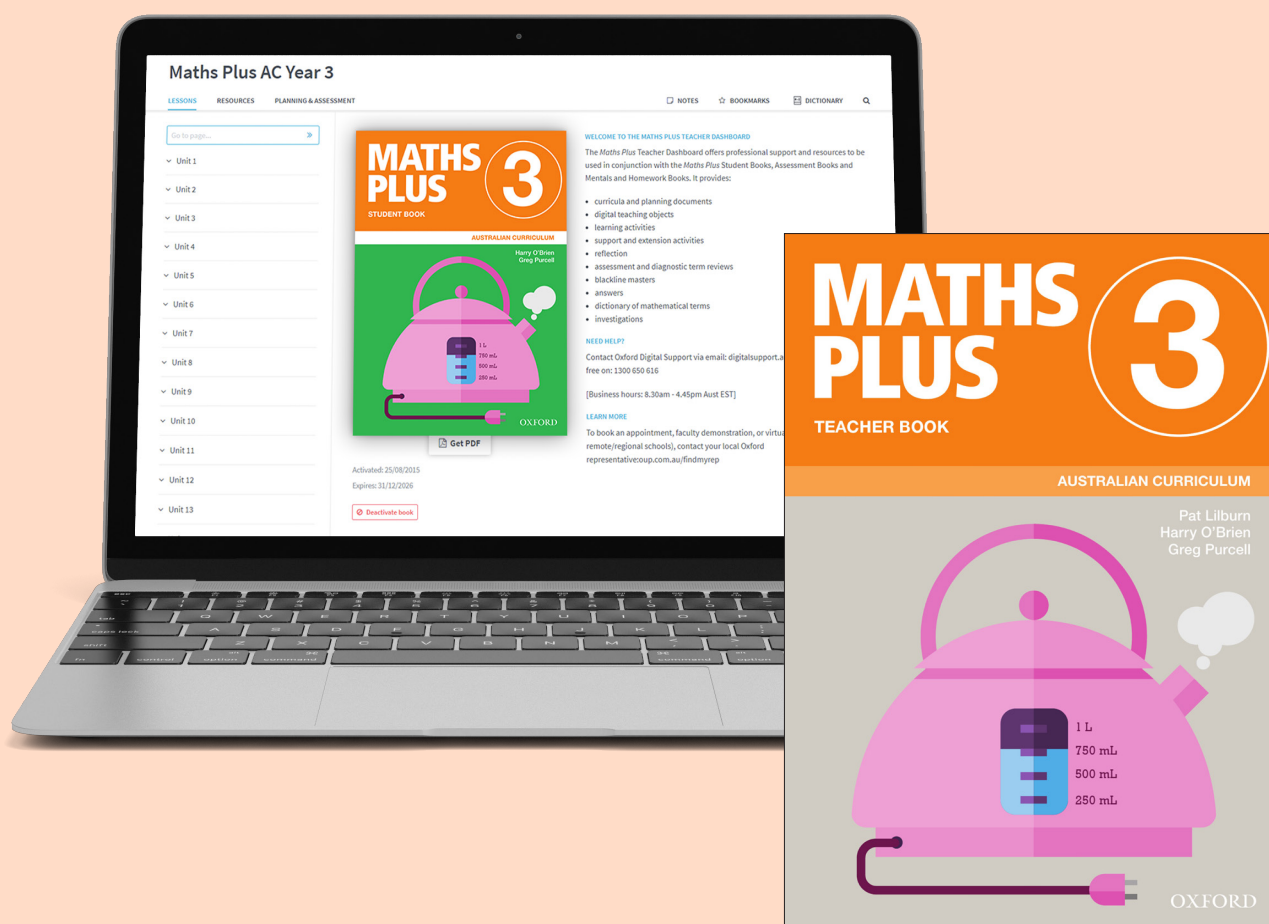
See pages 22–25.

STEP 1

Plan and implement teaching

RESOURCES

Teacher Book and Teacher Dashboard



Refer to the *Maths Plus Teacher Book* for curriculum links, direct instruction and links to the Teacher Dashboard, Mentals and Homework Books and *Advanced Primary Maths*.

Use the *Maths Plus Teacher Dashboard* to access a wealth of additional teaching and learning resources such as interactive teaching tools, videos, blackline masters, investigations, answers and more!

Links to corresponding *Maths Plus* resources for every unit

Teaching notes from the *Maths Plus 3* Teacher Book

unit 2

Subtraction

Student Book



Mentals and Homework Book



Advanced Primary Maths



Australian Curriculum

ACMNA055 Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (Fluency) [CCT] [N]

Lesson focus

Use mental strategies when subtracting

Materials

- a large number line (0–20) drawn in chalk on the floor
- rulers
- dice
- MAB materials

Getting started

Direct instruction

Revise the method for using a number line to subtract. Write $15 - 6$ on the board and choose a student to stand on number 15 on a large number line drawn in chalk on the floor. As the student moves back to show subtracting 6 on that number line, the other students count back 6, until the student on the number line reaches 9. Write ' $= 9$ ' next to $15 - 6$. Repeat this for other subtractions.

Refer to the Teacher Dashboard for resources such as the digital teaching object 'Mental subtraction strategies', which can be used to introduce different subtraction strategies, and the Potential Difficulties video 'Subtraction written strategies'.

Learning activities

Learning activities

- 1 Show students how they can use their rulers as number lines. Give them some subtractions to work out and choose some students to demonstrate their method.
- 2 Brainstorm all the words the class can think of related to subtraction. List these on the board or a chart.
Discuss these words and their meanings. Ask students to create a problem situation using each of the words.
Discuss and solve each of the suggested problem situations. Decide whether subtraction was the best operation to use each time.
- 3 In pairs, students can play a subtraction game. Both students start with 30. In turn, they toss a dice and subtract the number thrown from 30. Play continues, with students continuing to subtract until one student reaches zero. That student is the winner. Allow students to use their ruler as a number line if they wish.
- 4 Give out MAB materials. Ask students to use the longs and small cubes to model various numbers and then subtract 10 by taking away one long. They should say what the answer is (for example, $17 - 10 = 7$).

Support activities

- Work with students to model subtraction with a number line. Encourage students to draw an arc on the number line to represent each number that is subtracted (for example, $15 - 7 = 8$).



Extension activities

- Students write subtraction problems using the various words for subtraction.
- Ask students to write an explanation about how to use MAB materials in the subtraction of larger numbers.

Link to Teacher Dashboard

Reflection

Tell students a subtraction problem (for example, 17 minus 8) and ask them to solve it. Make time for as many students as possible to share the mental strategy they used.

Advanced Primary Maths

Ask students to share their tips for remembering facts, such as linking subtraction with known facts.

Assessment

- Can students solve simple subtraction problems?
- Which students require the support of MAB materials or number lines to solve the situations?
- Can students associate various words with subtraction and create subtraction problems that involve those words?
- The Assessment Book is best used for end-of-year assessment; however, appropriate questions from page 6 can be used to find out any facts that students are having difficulty with and target these with further activities.

Link to Advanced Primary Maths

Term planners

TERM 1 SUGGESTED PLANNER

WEEK	UNIT	PAGES	Number & Algebra	Measurement & Geometry	Statistics & Probability
1	1	2–5	Addition facts to $9 + 9$. Find a pattern in an addition grid. Add single-digit numbers with materials. Use arrays for skip counting patterns. Skip count to find a total. Skip count to complete patterns.	Identify prisms and cylinders. Match 3D objects with their names. Measure items using centimetres. Draw lines to exact centimetres.	
2	2	6–9	Subtraction facts to 20. Missing numbers in subtractions. Model odd and even numbers. Find patterns in odd and even numbers.	Draw lines of symmetry on shapes. Complete drawings of symmetrical shapes. Compare informal areas. Make like areas. Compare area units.	
3	3	10–13	Count on or back for addition or subtraction. Addition and subtraction as inverse operations.	Describe the position of objects. Follow directions to place items in a grid.	Use tally marks to record survey results. Interpret a column graph.
4	4	14–17	Subtraction facts from addition. Write and solve word problems and number sentences. Use mental strategies and arrays to multiply by 2.	Identify faces, edges and corners of pyramids. Describe a pyramid. Measure and estimate the length of leaves and objects in centimetres.	
5	5	18–21	Extend addition facts. Complete addition grids to find addition patterns. Model and write three-digit numbers. Order three-digit numbers.	Identify vertical and horizontal lines.	
6	6	22–25	Expand three-digit numbers. Use $>$ or $<$ to compare numbers. Use mental strategies to multiply by 5.	Use a grid to locate and give positions.	Interpret column graphs. Construct a column graph.
7	7	26–29	Write and solve division number sentences. Use the 'jump' strategy to solve addition of two-digit numbers. Expand numbers to 5000.	Capacity using informal units. Choose appropriate measuring units.	
8	8	30–33	Extend subtraction facts. Introduce numerator and denominator. Identify and model unit fractions of shapes and collections.	Match sets of faces to 3D objects. Develop strategies to calculate area.	
9	9	34–37	Use the split strategy to add two-digit numbers. Solve problems using the split strategy. Learn to trade in a two-digit algorithm.	Identify quarter to and quarter past on a clock face. Add hands to illustrate various times.	Interpret and construct picture graphs.
10		38–39	Diagnostic review 1		

Australian Curriculum

[illegible][illegible]

Teacher Dashboard

Start your lesson by navigating to a page on the Lessons tab

Teaching notes and resources from the Maths Plus 3 Teacher Dashboard

OxfordOWL Library School admin Help

Maths Plus AC Year 3

LESSONS RESOURCES PLANNING & ASSESSMENT

Go to page...

Unit 1

Unit 2

Subtraction

Odd and even numbers

Symmetry

Informal units

Unit 3

Unit 6

Unit 7

Unit 8

Unit 9

Unit 10

Unit 11

Unit 14

Unit 15

Unit 16

Unit 17

Unit 18

Unit 19

Unit 20

Unit 21

Unit 22

Unit 23

Unit 24

Unit 25

Unit 26

Unit 27

Unit 28

Unit 29

Unit 30

Unit 31

Unit 32

Unit 33

Unit 34

Unit 35

Acknowledgements

Unit 2

Subtraction

Page 6

Get started

Other resources

Video

Subtraction written strategies: Subtraction ...

Use the video to explore potential difficulties around this topic.

Teacher notes

Teacher notes: Unit 2, Subtraction

Download the teacher notes for p. 6.

Interactive

Digital teaching object: Mental subtraction ...

Use the interactive to introduce different subtraction strategies.

Potential Difficulties video tutorial

Projectable Student Book pages for whole-class and small-group teaching

Interactive teaching tool for whole-class learning

Downloadable Teacher Notes

Learning activities

- Show students how they can use their rulers as number lines. Give them some subtractions to work out and choose some students to demonstrate their method.
- Brainstorm all the words the class can think of related to subtraction. List these on the board or a chart. Discuss these words and their meanings. Ask students to create a problem situation using each of the words. Discuss and solve each of the suggested problem situations. Decide whether subtraction was the best operation to use each time.
- In pairs, students can play a subtraction game. Both students start with 30. In turn, they toss a dice and subtract the number thrown from 30. Play continues, with students continuing to subtract until one student reaches zero. That student is the winner. Allow students to use their ruler as a number line if they wish.
- Give out MAB materials. Ask students to use the longs and small cubes to model various numbers and then subtract 10 by taking away one long. They should say what the answer is (for example, $17 - 10 = 7$).

Support activities

→ Work with students to model subtraction with a number line. Encourage students to draw an arc on the number line to represent each number that is subtracted (for example, $15 - 7 = 8$).

Extension activities

→ Students write subtraction problems using the various words for subtraction.

→ Ask students to write an explanation about how to use MAB materials in the subtraction of larger numbers.

Reflection

Tell students a subtraction problem (for example, 17 minus 8) and ask them to solve it. Make time for as many students as possible to share the mental strategy they used.

Advanced Primary Maths

Ask students to share their tips for remembering subtraction facts, such as linking subtraction with known addition facts.

Assessment

→ Can students solve simple subtraction situations?

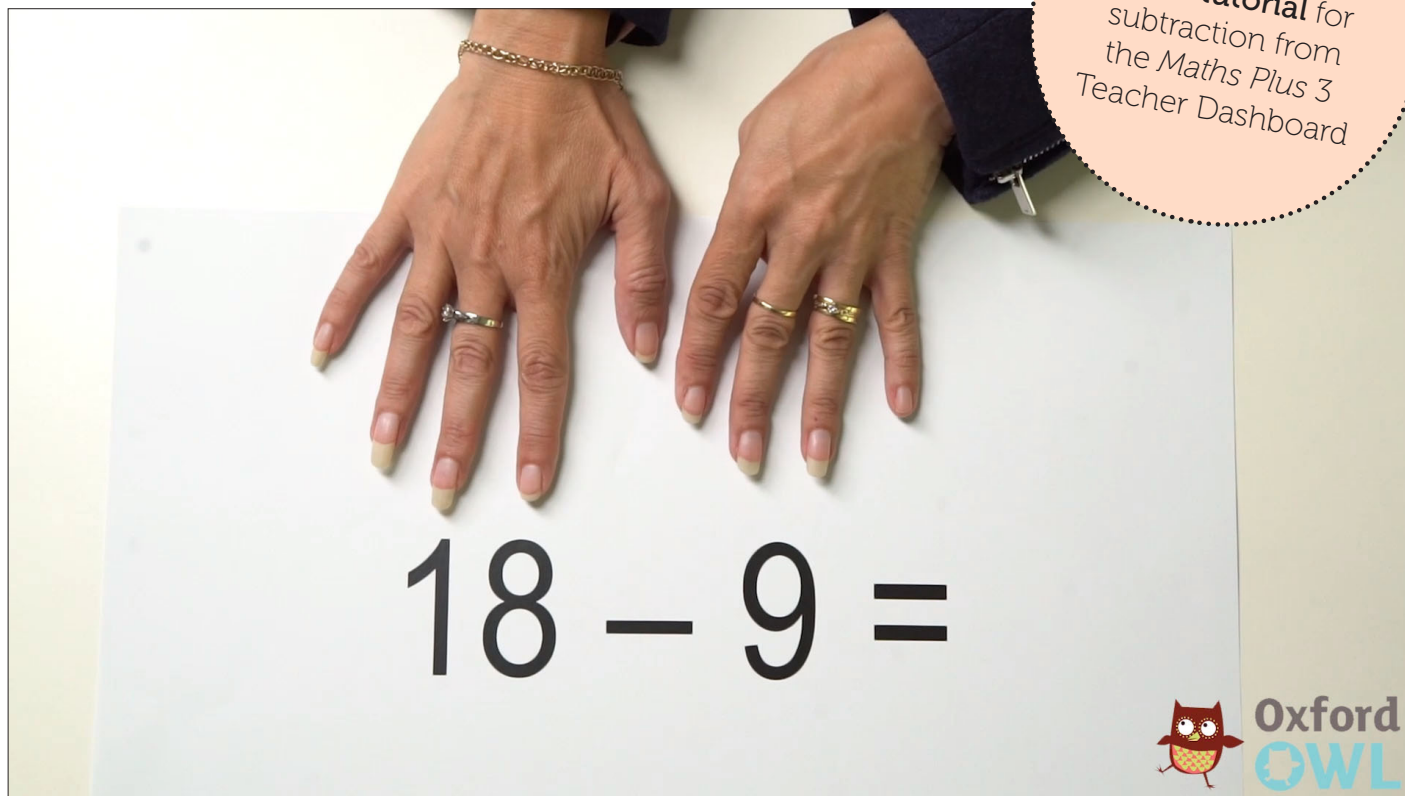
→ Which students require the support of MAB materials or number lines to solve the situations?

→ Can students associate various words with subtraction and create subtraction problems that involve those words?

→ The Assessment Book is best used for end-of-year assessment; however, appropriate questions from page 6 can be used to find out any facts that students are having difficulty with and target these with further activities.

Teacher Dashboard

Potential Difficulties
video tutorial for
subtraction from
the Maths Plus 3
Teacher Dashboard



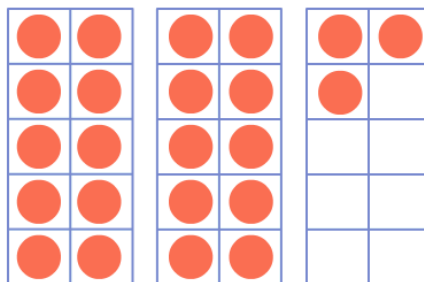
Interactive
teaching tool for
subtraction from
the Maths Plus 3
Teacher Dashboard

Subtraction strategies



10 COUNTING UP TO FRIENDLY NUMBERS

Break apart the smaller number in the equation into two numbers. Subtracting one of these numbers will get the larger number to a 10. Cover the counters with a cross to show this. Now subtract the remaining number, again covering with the cross. Select numbers from the drop-down lists to show the subtraction fact.



$$23 - 5 = 23 - \text{ } - \text{ } = \text{ }$$

CHECK ANSWER

CHANGE

Teacher Dashboard

Access all teaching and learning resources for Year 3 on the Resources tab

Teaching and learning resources from the Maths Plus 3 Teacher Dashboard

Maths Plus AC Year 3

LESSONSRESOURCESPLANNING & ASSESSMENT

NOTESBOOKMARKS

Resources

Unit 1
Addition facts to 9 + 9 [View topic](#)

Assessment

Assessment Book page 5
Download the topic assessment page.

Assessment

Assessment Book page 6
Download the topic assessment page.

Unit 1
Skip counting [View topic](#)

Document

BLM 1: Hundreds chart
Students can use the BLM as described in the Learning Activities.

Assessment

Assessment Book page 7
Download the topic assessment page.

Assessment

Assessment Book page 8
Download the topic assessment page.

Unit 1
Three-dimensional objects [View topic](#)

Interactive

Digital Teaching Object: 3D objects
Use the interactive to introduce the key mathematical concept.

Assessment

Assessment Book page 16
Download the topic assessment page.

Unit 1
Centimetres [View topic](#)

Document

BLM 2: 1-cm dot paper and grid paper
Students can use the BLM as described in the Learning Activities.

Assessment

Assessment Book page 12
Download the topic assessment page.

Assessment

Assessment Book page 13
Download the topic assessment page.

Assessment

Assessment Book page 14
Download the topic assessment page.

Unit 2
Subtraction [View topic](#)

Interactive

Digital Teaching Object: Mental subtraction ...
Use the interactive to introduce the key mathematical concept.

Video

Subtraction written strategies: Subtraction facts
Use the video to explore potential difficulties around this topic.

Assessment

Assessment Book page 5
Download the topic assessment page.

Assessment

Assessment Book page 6
Download the topic assessment page.

VIEW
Show all

RESOURCE TYPE
☒ Assessment
☒ Blms
☒ Document
☒ Interactive
☒ Video
ApplyClear

Post-tests

Interactive teaching tool for whole-class learning

Potential Difficulties video tutorial

Teacher Dashboard

Access all planning and assessment material for Year 3 on the Planning & Assessment tab

Planning and assessment resources from the Maths Plus 3 Teacher Dashboard

Maths Plus AC Year 3

LESSONS RESOURCES **PLANNING & ASSESSMENT** Curriculum links

NOTES BOOKMARKS

Planning

Planners

Find a Topic chart

Downloadable and printable Blackline masters

Assessment

Assessment and diagnostic review resources

Answers and Dictionary

Answers and dictionary

Investigations

Investigations

Balancing act

Task 1:

Use the pan balances to answer the questions.



How many marbles would be needed to balance an orange?

How many marbles would be needed to balance a dictionary?

How many apples would be needed to balance a maths book?

How many oranges would be needed to balance three dictionaries?

How many marbles would be needed to balance a maths book?

Which is the heaviest item on the scales above?

Explain how you came to this conclusion.

Task 2:

Use the pan balances to work out your own tricky question (Remember, you must know the answer yourself.)

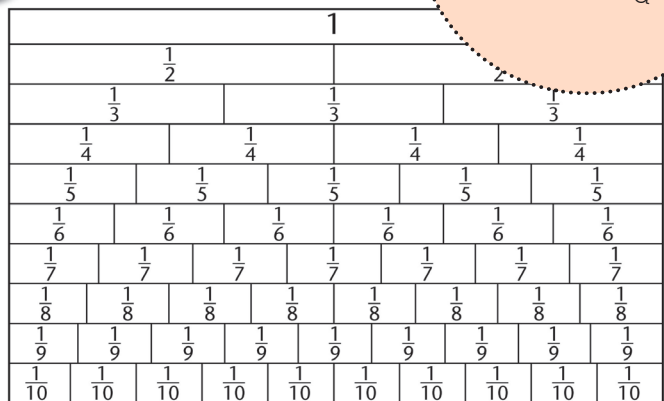
Investigation page
from the Maths Plus 3
Teacher Dashboard

Blackline master
from the Maths
Plus 3 Teacher
Dashboard

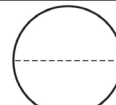
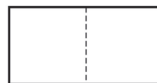
BLM

17

Fraction wall/fraction



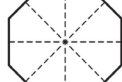
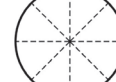
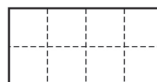
Halves



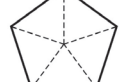
Quarters



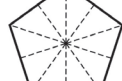
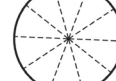
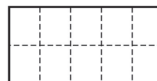
Eighths



Fifths



Tenths



Find a topic

NUMBER AND ALGEBRA

page

Number and place values

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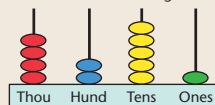
Find a topic page
from the Maths Plus 3
Teacher Dashboard*

Dictionary page
from the Maths Plus 3
Teacher Dashboard*

Dictionary

abacus

An instrument used for calculating.



acute angle

An angle less than 90°.



addition (+)

The operation that finds the sum or total.

am (ante meridiem)

The morning. Any time from midnight to noon, e.g. 7:30 am is 7:30 in the morning.

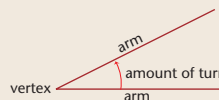
analogue clock

A clock face with numbers 1 to 12, and two hands.



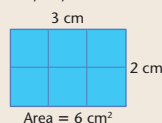
angle

The amount of turn between two arms around a common endpoint (the vertex).



area

The surface covered by any 2D shape. Area can be measured in cm², m², hectares and km².



array

An arrangement of objects or symbols into rows and columns.



ascend

An arrangement, largest.

associative property

A series of numbers can be added in any order without changing the result.

$$\begin{aligned} 5 + 4 + 6 &= 15 \\ 4 + 6 + 5 &= 15 \\ 6 + 5 + 4 &= 15 \end{aligned}$$

A series of numbers can be multiplied in any order without changing the result.

$$\begin{aligned} 5 \times 4 \times 3 &= 60 \\ 4 \times 3 \times 5 &= 60 \\ 3 \times 5 \times 4 &= 60 \end{aligned}$$

axis of symmetry

An imaginary line that divides a shape exactly in half. If a shape is folded along this line, both sides will match.

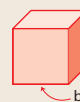


base

The bottom line of a 2D shape.

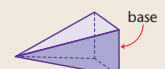


The bottom face of a 3D object.



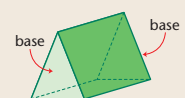
For example:

- pyramids have one base



For example:

- prisms have two bases.



capacity

The amount a container can hold. Capacity can be measured in millilitres (mL), litres (L) and kilolitres (kL).



STEP 2

Practise

RESOURCES

Student Books and Student Dashboards



The *Maths Plus* Student Books and Student Dashboards offer opportunities for spiralled learning and practice, and for students to develop and consolidate skills in understanding, fluency, reasoning and problem solving.

They include:

- four diagnostic term reviews (Years 1–6) to assess concepts and skills
- contextual support and examples
- dictionary (Years 2–6)
- answers (Years 2–6)

Student activity pages are colour-coded and cover the three Australian Curriculum: Mathematics content strands of Number and Algebra, Measurement and Geometry, and Statistics and Probability.

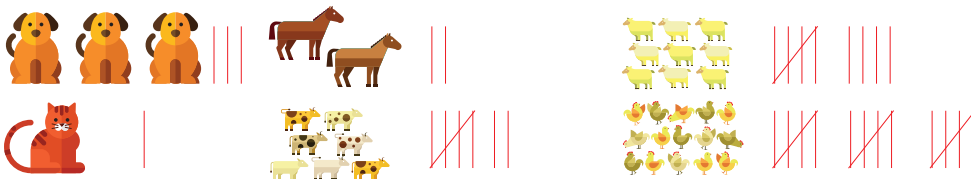
Activity page from the Maths Plus 3 Student Book for Unit 6: Column graphs

REASONING CCT L

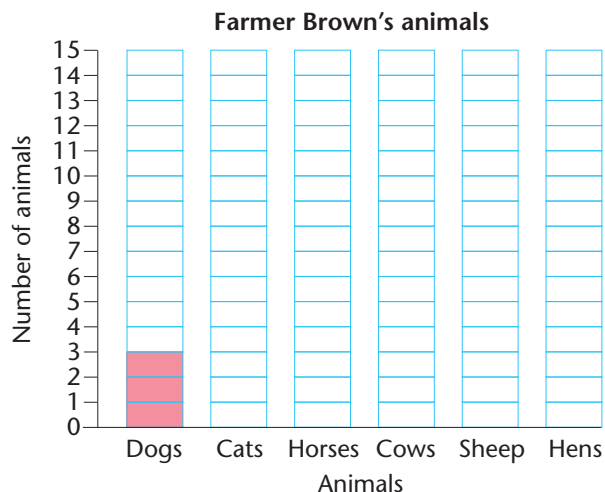
Column graphs

Proficiency strands and general capabilities are included on every page

- 16** Farmer Brown surveyed his animals to see if any were missing.



Construct a column graph to represent the farm animals.



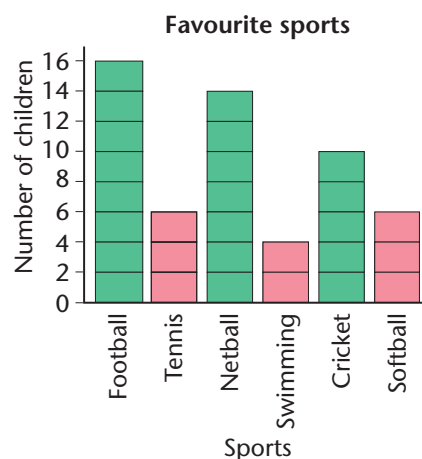
- 17** Categories

- a** Which animals do you think are Farmer Brown's pets?
b Which animals do you think are being bred to sell?

Clear and easy-to-read page design

- 18** Interpret the column graph.

- a** What sports have the same popularity? _____
b How many more children play netball than cricket? _____
c How many more children play football than tennis? _____
d How many children play the two most popular sports? _____
e Do as many children play netball as children who swim and play cricket combined? _____



unit 25

Patterns and non-patterns

UNDERSTANDING

- 1 First write the rule, then complete the pattern up to 8 numbers, then state what the tenth number in each pattern would be.

a Rule

2	4	6	8	10			
---	---	---	---	----	--	--	--

What would be the tenth term? _____

c Rule

4	8	12	16	20			
---	---	----	----	----	--	--	--

What would be the tenth term? _____

b Rule

3	6	9	12	15			
---	---	---	----	----	--	--	--

What would be the tenth term? _____

d Rule

6	12	18	24	30			
---	----	----	----	----	--	--	--

What would be the tenth term? _____

- 2 Add 6 to this group of numbers.

+	6	16	26	36	46	56	66	76	86
6									

What did you learn? _____

- 3 Subtract 6 from this group of numbers.

-	19	29	39	49	59	69	79	89	99
6									

What did you learn? _____

My pattern is
take away 5.
55, 50, 45 ...

Fresh and
engaging
illustrations



- 4 Tick the box for the patterns and put a cross for the non-patterns.

a

3	6	9	12	15	20
---	---	---	----	----	----

☐

f

91	87	83	79	75	71
----	----	----	----	----	----

☐

b

35	45	55	60	75	80
----	----	----	----	----	----

☐

g

1	2	4	8	16	32
---	---	---	---	----	----

☐

c

1	4	8	12	15	20
---	---	---	----	----	----

☐

h

300	400	500	700	600
-----	-----	-----	-----	-----

☐

d

14	17	20	23	26	29
----	----	----	----	----	----

☐

i

135	140	155	165	170
-----	-----	-----	-----	-----

☐

e

10	17	22	30	38	44
----	----	----	----	----	----

☐

j

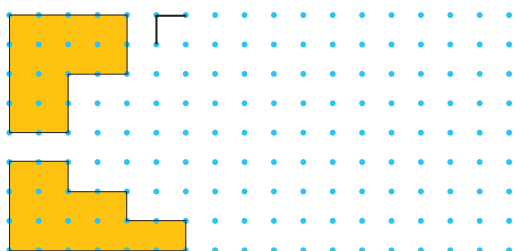
342	344	348	354	350
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☐

Diagnostic review

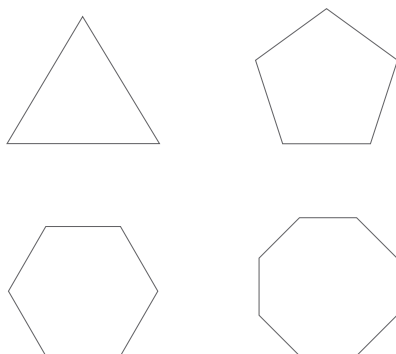
PART 7

Draw congruent copies of these shapes.



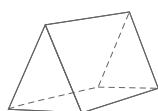
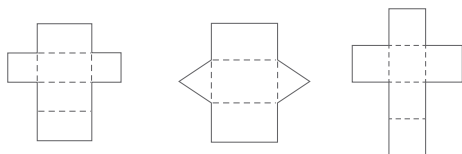
PART 8

Draw lines of symmetry on these regular 2D shapes.

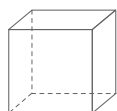


PART 9

Draw a line to match each 3D object to its net.



triangular prism



cube

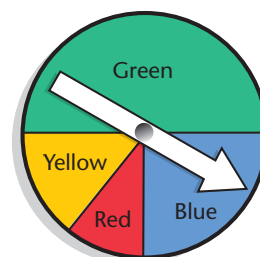


rectangular prism

PART 10

- Which colour is most likely to be spun?

- Is it more likely that blue will be spun than red?



PART 11

Bus Timetable			
Beach St	Bay Rd	Lake St	School
9:30	9:38	9:45	9:56

How many minutes long are these trips?

- From Beach St to Lake St _____
- From Bay Rd to the school _____
- From Beach St to the school _____
- From Lake St to the school _____

PART 12

Record each length measurement as a decimal.

a	1 m 25 cm =	.	m
b	2 m 37 cm =	.	m
c	6 m 49 cm =	.	m

PART 13

Answer the questions.

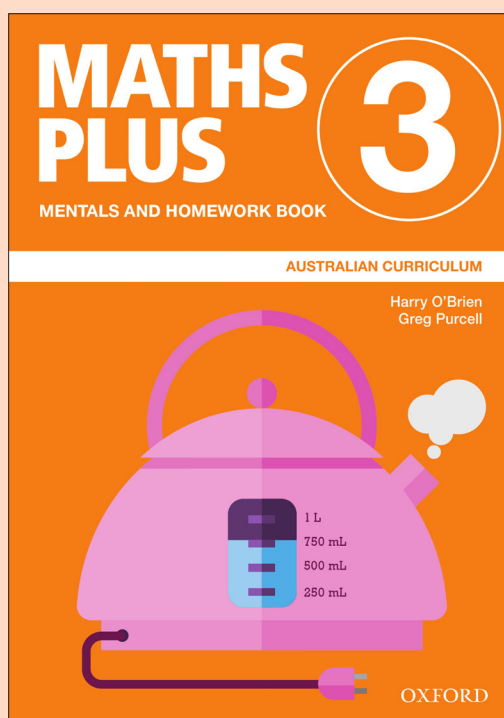
- How many millilitres in 1 litre? _____
- How many centimetres in 1 metre? _____
- How many grams in 1 kilogram? _____
- How many minutes in 1 hour? _____
- How many millilitres in $\frac{1}{2}$ litre? _____

STEP 3

Master

RESOURCES

Mentals and Homework Books



The *Maths Plus Mentals and Homework Books* (Years 1–6) provide opportunities to practise and develop skills and strategies.

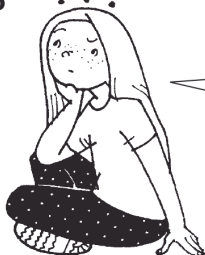
The Mentals and Homework Books:

- provide essential revision and consolidation activities
- directly correspond to the concepts and units of work presented in the Student Books
- link all activities to the three Australian Curriculum: Mathematics strands.

Number and Algebra

SET 1 Basic

- 1 $10 + 4$
- 2 $7 + 6$
- 3 $7 + 7$
- 4 $8 + 5$
- 5 $2 + 12$
- 6 $13 + 4$
- 7 $8 + 7$
- 8 $9 + 5$
- 9 $11 - 2$
- 10 $13 - 2$
- 11 $14 - 2$
- 12 $16 - \square = 14$
- 13 Double 8.
- 14 Half of 16
- 15 ???



Susan had \$6 but Peter had twice as much. How much money did Peter have?

\$

SET 2 Connecting addition and subtraction

Complete these addition facts. Then use the subtraction facts to check your answer.

- | | |
|----------------------|---------------------|
| 1 $6 + 7 = \square$ | $13 - 6 = \square$ |
| 2 $8 + 6 = \square$ | $14 - 8 = \square$ |
| 3 $10 + 9 = \square$ | $19 - 10 = \square$ |
| 4 $12 + 5 = \square$ | $17 - 12 = \square$ |
| 5 $3 + 13 = \square$ | $16 - 3 = \square$ |
| 6 $18 + 2 = \square$ | $20 - 18 = \square$ |
| 7 $9 + 9 = \square$ | $18 - 9 = \square$ |

- 8 Lisa cooked 18 biscuits. If she burnt 7, how many were left?



- 9 Henry bought a dozen apples and gave 5 away. How many apples were left?

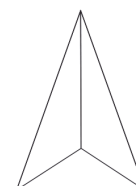
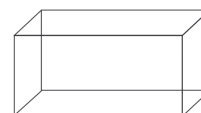
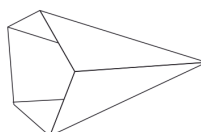
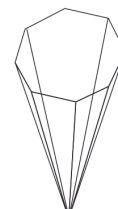
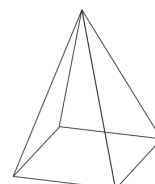
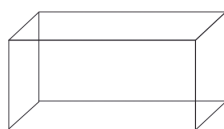


- 10 James saved \$36 but spent \$8. How much did he have left?



Geometry Pyramids

- 1 Shade all pyramids.
- 2 Tick the pyramid whose base is a square.
- 3 Put a cross on the pyramid with 6 corners.

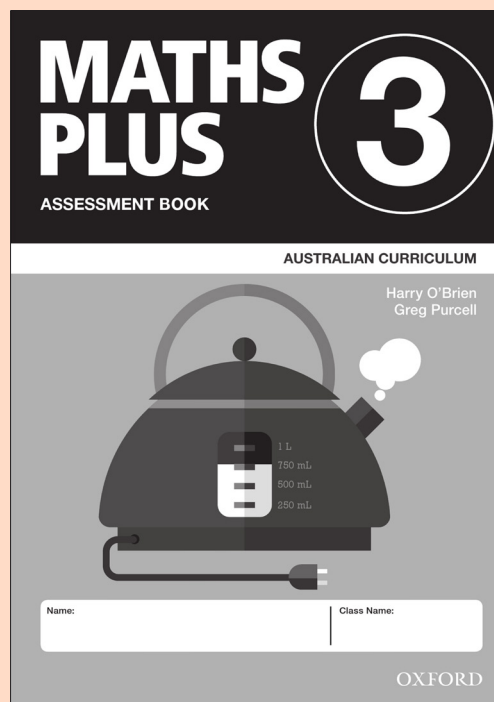


STEP 4

Assess the results

RESOURCES

Assessment Books



The *Maths Plus Assessment Books* provide teachers with an easily administered, yet comprehensive, post-assessment tool. They:

- provide opportunities for teachers to measure student growth
- include short post-tests for each topic
- include a simple marking system that enables easy conversion to percentages.

Each Assessment Book page is a snapshot of work that addresses a specific content description from the Australian Curriculum.

Post-test
from the
Maths Plus 3
Assessment Book

Subtraction



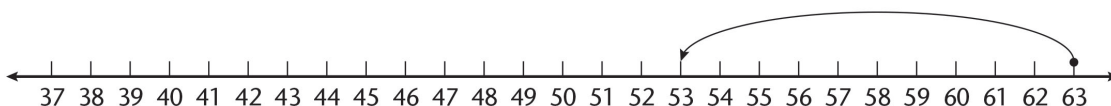
Recognise and explain the connection between addition and subtraction (ACMNA055). Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (ACMNA055).

Answer these subtraction facts.

- | | | | | | | | | |
|----------|-----------|----------------------|----------|------------|----------------------|----------|-------------|----------------------|
| 1 | $9 - 6 =$ | <input type="text"/> | 4 | $11 - 5 =$ | <input type="text"/> | 7 | $13 - 7 =$ | <input type="text"/> |
| 2 | $8 - 5 =$ | <input type="text"/> | 5 | $14 - 6 =$ | <input type="text"/> | 8 | $18 - 13 =$ | <input type="text"/> |
| 3 | $7 - 4 =$ | <input type="text"/> | 6 | $19 - 7 =$ | <input type="text"/> | 9 | $19 - 15 =$ | <input type="text"/> |

- 10** Demonstrate how to solve this subtraction using the jump strategy on the number line. (Subtract the tens, then the ones.) It has been started for you.

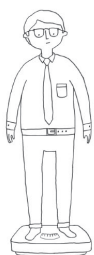
$$63 - 24 =$$



Subtractions can be checked using addition, e.g. $10 - 4 = 6$ can be checked by $6 + 4 = 10$ or $4 + 6 = 10$. Write an addition fact to check the subtractions in the table below. Place a tick or cross in the box to show if the subtractions are correct.

	Subtraction fact		Addition fact
11	$16 - 8 = 8$	<input type="checkbox"/>	
12	$24 - 16 = 8$	<input type="checkbox"/>	
13	$32 - 13 = 18$	<input type="checkbox"/>	

Calculate the differences in mass between:



Bing 88 kg



Fred 64 kg



Toula 45 kg



Sandy 30 kg



Tim 12 kg

- 14** Toula and Sandy _____

- 16** Fred and Sandy _____

- 15** Fred and Tim _____

- 17** Fred and Toula _____

Solve the subtractions.

18

	Tens	Ones
8	3	
-	3	5
<hr/>		
<hr/>		

19

	Hund	Tens	Ones
6	7	4	
-	2	3	1
<hr/>			
<hr/>			

20

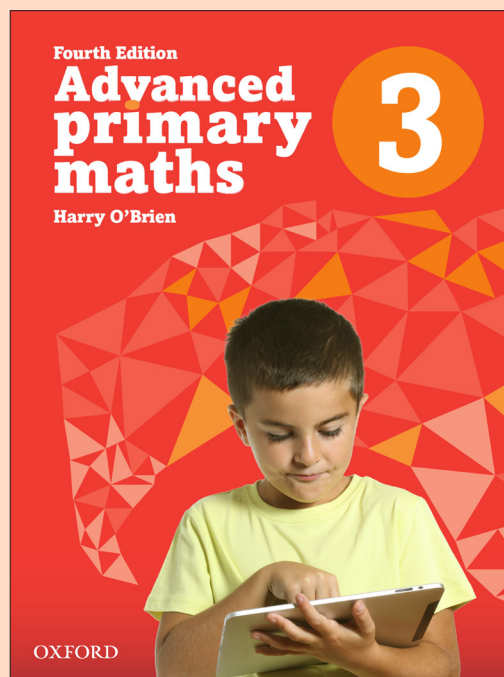
	Hund	Tens	Ones
8	2	6	
-	3	4	3
<hr/>			
<hr/>			

EXTENSION

Challenge and
extend

RESOURCES

Advanced Primary Maths



Advanced Primary Maths is the only advanced mathematics program written specifically for Australian students. It engages and extends students in Years 3 to 6 in line with the Australian Curriculum.

Use the curriculum cross-reference charts, Term Planners and Find a Topic pages to prepare your lessons.

Australian Curriculum cross-reference chart from Advanced Primary Maths 3

Term planner from Advanced Primary Maths 3

AUSTRALIAN CURRICULUM CROSS-REFERENCE CHART																	
UNIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Number and Algebra																	
Number and place value																	
Investigate the conditions required for a number to be odd or even and identify odd and even numbers (ACMNA651)																	
Recognise, model, represent and order numbers to at least 10 000 (ACMNA652)																	
Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA653)																	
Recognise and explain the connection between addition and subtraction (ACMNA654)																	
Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (ACMNA655)																	
Recall multiplication facts of two, three, five and ten and related division facts (ACMNA656)																	
Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (ACMNA657)																	
Fractions and decimals																	
Model and represent unit fractions including $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ and their multiples to a complete whole (ACMNA658)																	
Money and financial mathematics																	
Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (ACMNA659)																	
Patterns and algebra																	
Describe, continue, and create number patterns resulting from performing addition or subtraction (ACMNA660)																	
Measurement and Geometry																	
Using units of measurement																	
Measure, order and compare objects using familiar metric units of length, mass and capacity (ACMMG061)																	
Tell time to the minute and investigate the relationship between units of time (ACMMG062)																	
Shape																	
Make models of three-dimensional objects and describe key features (ACMMG063)																	
Location and transformation																	
Create and interpret simple grid maps to show position and pathways (ACMMG065)																	

TERM 2 SUGGESTED PLANNER

PLANNER

Measurement and Geometry

Statistics and Probability

Number and Algebra

Measurement and Geometry

Statistics and Probability

Number and Algebra

Measurement and Geometry

Statistics and Probability

Number and Algebra

Measurement and Geometry

Statistics and Probability

Number and Algebra

Measurement and Geometry

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Number and Algebra

Measurement and Geometry

Statistics and Probability

FIND A TOPIC

Number and Algebra

Numbers and place value

Odd and even numbers	10
Numbers to 5 digits	2, 14, 58, 80, 154
Counting	62
Rounding numbers	45, 112
Roman numerals	12, 34, 76

Addition and subtraction

Addition	3, 4, 7, 11, 19, 32, 44, 70, 74, 79, 94, 98, 128
Subtraction	6, 15, 32, 48, 53, 61, 96, 108, 116, 121, 130, 163
Addition and subtraction strategies	3, 11, 15, 29, 53, 57
Associative property	52
Connecting addition and subtraction	32, 160
Written addition and subtraction	48, 61, 79, 86, 94, 96
Problem solving	108, 116, 121, 128, 129, 138
	4, 8, 12, 16, 21, 26, 29, 30, 34, 39, 46, 50, 56, 68, 70, 72, 81, 88, 92, 96, 100, 110, 118, 130, 135, 150, 155, 160, 165

Money and financial mathematics

Representing values	28
Australian notes and coins	28, 99
Calculate change	100

Multiplication and division

Strategies	10, 49, 58
Facts	10, 24, 68, 88
Multiplication	10, 24, 66, 90, 95, 134, 143, 163
Division	20, 37, 53, 87, 95, 133, 153, 163
Problem solving	16, 30, 54, 63, 68, 72, 76, 88, 105, 114, 123, 150, 160, 165
Associative property	52

Fractions and decimals

Fractions of a collection	139, 159
Halves, quarters, eighths	25, 75
Thirds, fifths and tenths	33, 75
Ordering fractions	38
Equivalent fractions	147
Fractions on a number line	113
Hundredths	71, 91, 103
Decimals	103, 113, 122, 129
Problem solving	54, 118, 123

Patterns and algebra

Number patterns	10
Subtraction patterns	46, 62, 104, 117, 144, 158
Counting	72, 96, 148, 158
Angles	52
	137, 157

Measurement and Geometry

Length	35, 72, 110
Area	35, 141, 152
Volume and capacity	59, 101, 166
Mass	59, 101, 119, 162
Time	151
Location and transformation	101, 151

Statistics and Probability

Statistics	59, 101, 166
Probability	59, 101, 119, 162
	151
	101, 151

Interpretation

Interpretation	59, 101, 166
	59, 101, 119, 162
	151
	101, 151


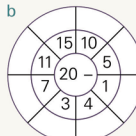
Find a topic page from Advanced Primary Maths 3



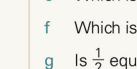
Advanced Primary Maths

Use the Diagnostic Reviews and Answers to assess students' understandings of concepts covered.

DIAGNOSTIC Review 1

PART 1

a  b 

c  +  = 

d

Tens	Ones
3	4
5	3

 e

Tens	Ones
2	6
4	7

 f

Tens	Ones
3	5
4	7

g

Tens	Ones
5	6
2	3

 h

Tens	Ones
7	8
2	5

 i

Tens	Ones
3	9
1	5

PART 2

a $6 \times 2 =$ _____ g $4 \times 5 =$ _____
 b $5 \times 2 =$ _____ h $8 \times 5 =$ _____
 c $7 \times 2 =$ _____ i $9 \times 5 =$ _____
 d $4 \times 2 =$ _____ j $6 \times 10 =$ _____
 e $9 \times 2 =$ _____ k $7 \times 10 =$ _____
 f $8 \times 2 =$ _____ l $5 \times 10 =$ _____

m


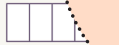


x	1	4	2	5	3	8	9
4							

n Divide 20 among 4. _____
 o Divide 30 among 5. _____

Diagnostic Review
page from Advanced
Primary Maths 3

PART 3

Shade the fractions.

- a  $\frac{1}{2}$ b 
 c  $\frac{1}{4}$ d 
 e Which is larger, $\frac{1}{2}$ or $\frac{1}{4}$? _____
 f Which is larger, $\frac{1}{4}$ or $\frac{1}{8}$? _____
 g Is $\frac{1}{2}$ equal to $\frac{4}{8}$? _____

PART 4

What number is represented on the abacuses?

- a  b  c 

Write the numbers for:

- d twenty-seven. _____
 e one hundred and twenty-six. _____
 f seven hundred and seven. _____
 g Write the largest number you can using the digits 4, 7 and 8. _____
 h Shade the odd numbers.

86	27	131
----	----	-----

PART 5

There are 28 children in class 3T. If there are 4 more boys than girls, how many girls are there?

ANSWERS

UNIT 1

- 1 a 68 d 257
b 245 e 247
c 330 f 325
- 2 a

3	7	4
---	---	---

 b

7	0	1	0
---	---	---	---

c

5	6	3
---	---	---

 d

8	0	1	2
---	---	---	---

e

7	9	1	7
---	---	---	---

 f

8	2	1	7
---	---	---	---
- 3 a 26

27

 b 388

389

 c 390
b 35

36

 c 37 d 440

441

 e 442
c 146

147

 d 148 h 879

880

 i 881
d 249

250

 e 251 i 755

756

 j 757
e 364

365

 f 366 j 258

259

 k 260
- 4 a 256, 291, 307, 356 d 74, 247, 472, 742
b 279, 364, 807, 999 e 507, 605, 607, 705
c 29, 259, 305, 952
- 5 a 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
b 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
c 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
d 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
e 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
f 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
g 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
h 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
i 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
j 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
- 6 Hands on.
- 7 a 47 b 59 c 48 d 70
- 8 467
- 9 a

3	8	1
2	4	6
7	0	5

 b

4	9	2
3	5	7
8	1	6

 c

5	10	3
4	6	8
9	2	7
- 10 a 24 b 16 c 16 d \$11
- 11 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 12 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 13 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 14 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 15 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 16 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 17 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 18 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 19 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 20 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 21 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 22 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 23 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 24 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 25 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 26 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 27 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28
- 28 a 3 b 4 c 5 d 6 e 7 f 8 g 9 h 10 i 11 j 12 k 13 l 14 m 15 n 16 o 17 p 18 q 19 r 20 s 21 t 22 u 23 v 24 w 25 x 26 y 27 z 28

Answers
page from
Advanced
Primary Maths 3

UNIT 23 Number patterns

6 Complete each pattern then write a rule for it.

a

8	12	16	20				
---	----	----	----	--	--	--	--

b

7	10	13	16				
---	----	----	----	--	--	--	--

c

18	22	26	30				
----	----	----	----	--	--	--	--

d

30	35	40	45				
----	----	----	----	--	--	--	--

7 Add 6 to this sequence of numbers.

+	6	16	26	36	46	56	66	76	86
6									

What did you learn about this number sequence? _____

8 Subtract 6 from this sequence of numbers.

-	19	29	39	49	59	69	79	89	99
6									

What did you learn about this number sequence? _____

9 Complete the pattern up to 8 numbers, then state what the tenth number or term would be.

a

2	4	6	8	10			
---	---	---	---	----	--	--	--

What would be the tenth number?

c

14	18	22	26	30			
----	----	----	----	----	--	--	--

What would be the tenth term?

b

3	6	9	12	15			
---	---	---	----	----	--	--	--

What would be the tenth number?

d

16	22	28	34	40			
----	----	----	----	----	--	--	--

What would be the tenth term?

SUPER QUESTION

10 Complete the number patterns.

a

16	32	64		
----	----	----	--	--

b

512	256	128		
-----	-----	-----	--	--

104

Describe, continue and create number patterns resulting from performing

Super Questions for exploring concepts at a higher level

Weekly Testers

Open-ended Challenger questions with multiple solutions

Activity page from Advanced Primary Maths 3 Unit 23: Number patterns

My pattern is take away 5. 55, 50, 45, ...



Students can use the Super Problem Solving pages, with Open-ended Challengers and Weekly Testers, to consolidate and extend their learning.



Super problem solving UNIT 23

11 Answer the number sentences. Always do the work in the brackets first.

a $(3 + 7) \times 2 =$

f $(20 - 6) \div 2 =$

k $5 \times 4 + 3 \times 6 =$

b $2 \times (5 - 3) =$

g $(20 - 13) \times 4 =$

l $6 \times 5 + 20 \div 5 =$

c $2 + 3 \times 5 =$

h $(40 - 20) \div 4 =$

m $2 \times 7 + 26 \div 13 =$

d $4 \times (20 - 10) =$

i $20 \times 2 - 6 =$

n $6 \times 6 - 15 \div 3 =$

e $(13 - 7) \times 5 =$

j $9 \times 5 - 27 =$

o $10 \times 5 - 16 \div 4 =$

12 Solve the problems.

a Taylor scored 58 runs and 38 runs in his first test match. What was his total score?

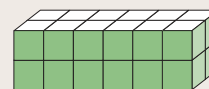
b 5 pizzas cost Mr Brown \$35. How much did each pizza cost if they were all the same price?

WEEKLY TESTER

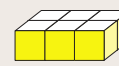
13 Ken and Barby each made a prism. Barby finished her prism and proudly displayed it. Ken was a bit of a slow worker and only finished the first layer of his prism.

a If Ken's prism were to have the same number of blocks as Barby's, how many more layers would it need?

b Design and sketch another prism that is made of 24 cubes.



Barby's model



Ken's model

OPEN-ENDED CHALLENGER

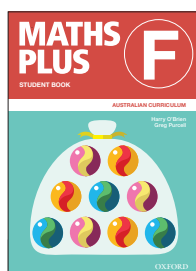
14 Rebecca paid \$15 for her group to enter the zoo. How many children could have been in Rebecca's group if children cost \$1.50 and adults cost \$5.00? Give some examples.

Super Problem Solving page from Advanced Primary Maths 3 Unit 23

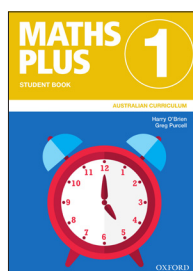
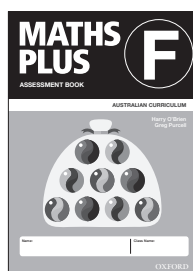
Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents

Explore the Full Suite

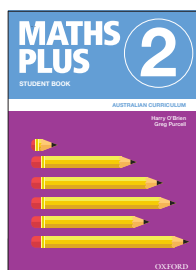
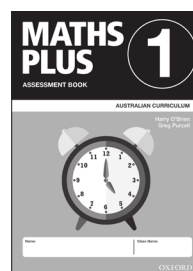
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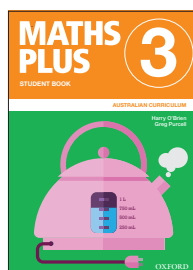
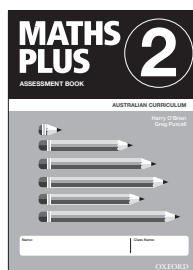
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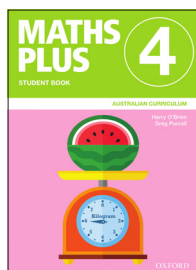
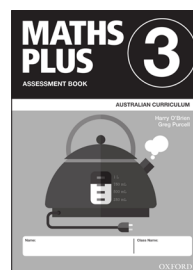
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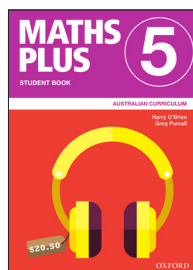
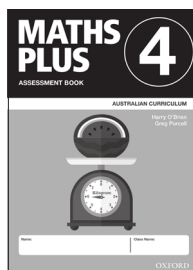
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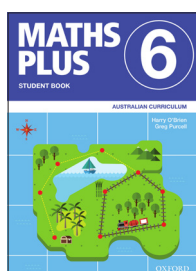
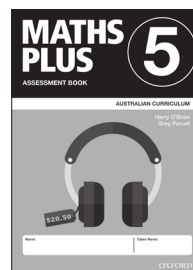
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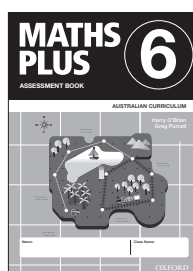
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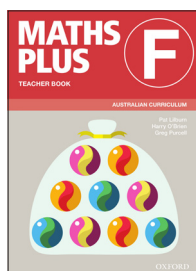


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Explore the Full Suite

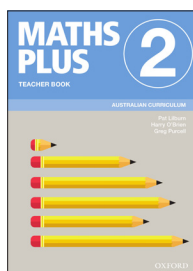
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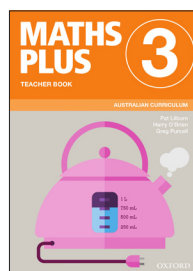
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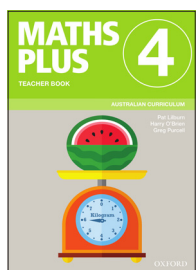
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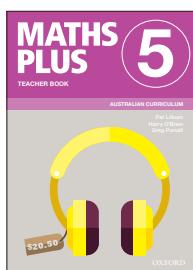
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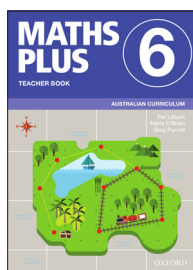
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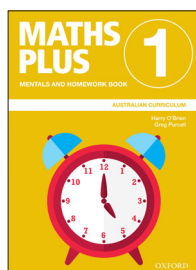


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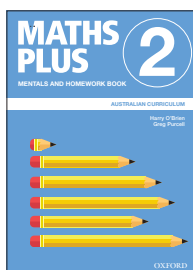


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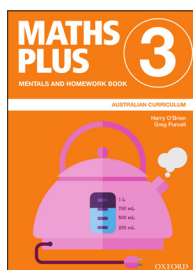
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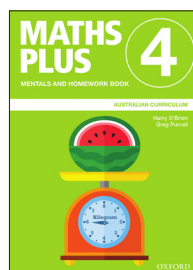
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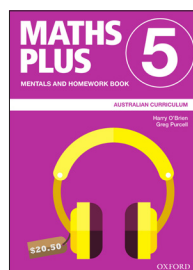
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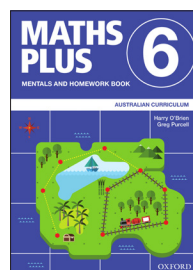
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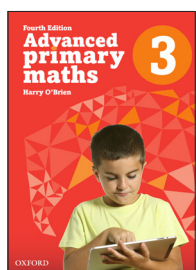


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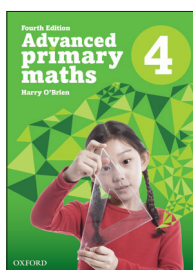


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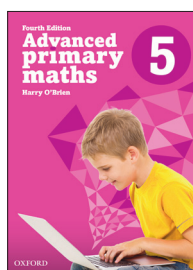
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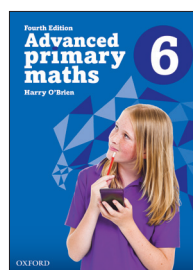
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