

Australian



Signpost NSW

MATHS

Sample pages



Mentals

Introduction

Using the Mentals Books

Each unit of the Mentals Book is programmed to review Student Book content for the previous two weeks (based on the Suggested Program in the Teacher's Book). For example, Unit 15 of the Mentals Book can be set as homework to review weeks 13 and 14 of the Student Book while week 15 is being taught.

Presentation

- The content of the strands Number and Algebra, Measurement and Geometry, and Statistics and Probability is covered thoroughly.
- Essential skills are explained.
- Language, problem solving, graphs and tables are given a high profile.
- Mathematics is applied to real-life situations wherever possible.
- The **Arithmetic Card** (page 5) is an exciting teaching tool for practising basic number skills.
- **ID Cards** (pages 6 and 7) review the terms essential to success in the course.
- **Measurement standards** and **tables** (pages 8 and 9) are provided so that students can estimate effectively.

Mixed-topic Questions

The units present questions in a mixed-topic format.

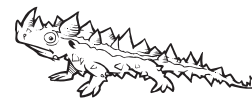
- This is essential for thorough understanding and continuous review.
- In real life, similar questions don't often occur together.
- It allows the teacher to discover weaknesses that could otherwise pass unnoticed.
- It provides a real test of understanding.

Graded Questions

- Column 1: easier
- Columns 2 and 3: harder
- Column 4: Extension and Challenge

Motivation

- Cartoons make mathematics more appealing.
- There are two lizards hidden on each page for students to find.



Extra Activities



- Problem-solving **strategies** are introduced in a carefully planned sequence throughout the series.



- Important concepts from **Number and Algebra** and **Measurement and Geometry** are explored.



- **Measurement** concepts and activities are introduced and investigated.



- **Statistics and Probability** concepts (Data and Chance) are presented for revision and extension.



- A **tables** program for each of addition, subtraction and multiplication is included.
- It is important for students to try to learn addition and multiplication tables by heart.

Arithmetic Card	5
ID Cards	6–7
Tables of Number and Measurement	8
Examples of Measurements	9

Units	10–83
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How Would You Name the Lizards?	84
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Answers	A1–A12 (middle pages)
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Unit Activities

Unit	Content	Extra Activity
1:1/2 1:3/4	+ 1, – 1 Personal measures	+ / – tables Measure
2:1/2 2:3/4	Australian money + 2, + 3	Concept + tables
3:1/2 3:3/4	Australian money + 1, – 1	Concept + / – tables
4:1/2 4:3/4	Time Chance	Measure Chance
5:1/2 5:3/4	Skip counting Language	× tables ID Card B
6:1/2 6:3/4	× 2, × 4 Problem solving	× tables Strategy Time
7:1/2 7:3/4	Rows of, groups of Skip counting	× tables × tables
8:1/2 8:3/4	Looking for tens Subtracting 9	Concept Concept
9:1/2 9:3/4	× 10 × 5	× tables × tables
10:1/2 10:3/4	× 5, × 0 Language	× tables ID Card B
11:1/2 11:3/4	+ 3, + 4 Lots of, groups of	+ tables Concept
12:1/2 12:3/4	× 3 7 –, 8 –	× tables – tables
13:1/2 13:3/4	11 –, 12 – × 3	– tables × tables
14:1/2 14:3/4	Chance Adding with blocks	Chance Concept
15:1/2 15:3/4	× 1, × 10 Language	× tables ID Card B
16:1/2 16:3/4	Time in minutes Roman numerals	Measure Concept
17:1/2 17:3/4	+ 6, + 7 Combinations to 10 & 13	+ tables Concept
18:1/2 18:3/4	Chance 13 –, 14 –	Chance – tables
19:1/2 19:3/4	Chance + 10, + 10	Chance + tables

Unit	Content	Extra Activity
20:1/2 20:3/4	Chance Language	Chance ID Card A
21:1/2 21:3/4	13 –, 14 – + 5	– tables + tables
22:1/2 22:3/4	+ 8, + 9 Addition grid	+ tables + tables
23:1/2 23:3/4	× 5 Perimeter	× tables Measure
24:1/2 24:3/4	– 10, – 10 Rounding (nearest 100)	– tables Concept
25:1/2 25:3/4	24 +, 32 + Linking + and –	+ tables Concept
26:1/2 26:3/4	15 –, 16 – Language	– tables ID Card B
27:1/2 27:3/4	+ 3, + 5 Rounding (nearest 10)	+ tables Concept
28:1/2 28:3/4	+ 4, + 6 Using number lines	+ tables – tables
29:1/2 29:3/4	– 2, – 4 + 7, + 9	– tables + tables
30:1/2 30:3/4	Chance Language	Chance ID Card A
31:1/2 31:3/4	Writing fractions Near doubling	Concept Concept
32:1/2 32:3/4	Chance Fractions	Chance Concept
33:1/2 33:3/4	Subtraction Language	Concept ID Card B
34:1/2 34:3/4	Problem solving Linking + and –	Strategy Time Concept
35:1/2 35:3/4	+ 8 Language	+ tables ID Card A
36:1/2 36:3/4	Language Problem solving	ID Card A Strategy Time
37:1/2 37:3/4	Rounding (nearest 5) Personal measures	Concept Measure
Answers	These can be found in the middle of this book on pages A1 to A12.	



4:3



out of 12

1 $\begin{array}{r} 8 \\ 3 \\ 2 \\ + 7 \end{array}$ 2 $\begin{array}{r} 5 \\ 1 \\ 9 \\ + 5 \end{array}$ 3 $\begin{array}{r} 8 \\ 0 \\ 9 \\ + 2 \end{array}$

4 90, 80, 70, _____, _____, _____

5

6	hundreds	5	tens	3	ones
---	----------	---	------	---	------

 = _____

6 _____ out of _____ are shaded.

7 How many curved surfaces has:
a a cone? _____ b a cube? _____

8 Count on to find:
a $17 + 2$ _____ b $15 + 4$ _____

9 Count back to find:
a $9 - 2$ _____ b $15 - 3$ _____

10 How many vertices has a rhombus? _____

11 What two shapes are used to make this pattern? _____

12 **Favourite Colours**

Red	Blue	Orange	Yellow
10	12	4	7

- a The most popular colour was _____.
- b The least popular colour was _____.
- c How many people liked blue? _____



Answer each question with always (A), sometimes (S) or never (N).

- a Do students go to school on Saturday?
- b Do people walk from here to China?
- c Does a dog give birth to a cat?
- d Do people walk on the moon?
- e Does the sun rise in the morning?
- f Do boys beat men at running?

4:4

Extension

out of 5

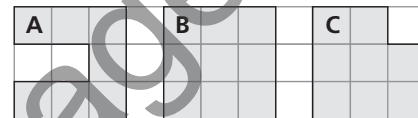
1 Would a 4-digit number be bigger than a 3-digit number? _____

2 a $\square - 13 = 4$ = _____
b $20 - \square = 6$ = _____

3 _____

- a How many bugs in 4 groups? _____
- b How many bugs in 5 groups? _____
- c How many bugs in 8 groups? _____

4 a The smallest area below. _____
b The largest area below. _____



5 Flip, slide or turn? _____

Challenge

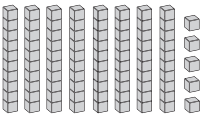
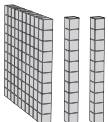
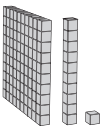
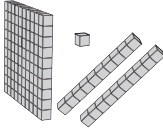
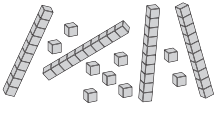
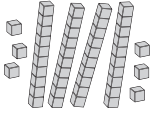
$23 - 6 =$ _____
Explain how you found your answer.

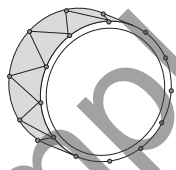


A rat can be a pain in the neck.

This fellow is!



- 1 In a to f, write the number modelled.

a 	b 
c 	d 
e 	f 

- 2 Is 7 an even number? _____
- 3 Is the whiteboard longer than your table? _____
- 4 The colour of a \$2 coin. _____
- 5 **a** Draw a cross at the centre of this drum. 
- b** Draw a zigzag line beside the drum. 
- 6 $9 + 1$ _____
- 7 How many ones in 9 tens? _____
- 8 Does a circle have any vertices? _____ 
- 9 Write the number sixteen. _____
- 10 The colour of a 20 cent coin. _____
- 11 The season after summer. _____

- 1 $10 - 8$ _____
- 2 $9 + 6$ _____
- 3 4×0 _____
- 4 2×8 _____
- 5 $\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$
- 6 7 plus 5. _____
- 7 Double 14. _____
- 8 $\$8 - \6 _____
- 9 13 minus 4. _____
- 10 $\begin{array}{r} 9 \\ + 9 \\ \hline \end{array}$

- 11 Order from smallest to largest.

391, 902, 535 _____, _____, _____

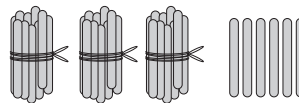
- 12 **A** 
B 
C 
- a** The longest line. _____
- b** The shortest line. _____

- 13 Draw a line of symmetry on each picture.



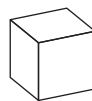
- 14 30, 28, 26, _____, _____, _____

- 15 If there are 10 craft sticks in a bundle, write the number shown here. _____



- 16 $50 =$ _____ tens

- 17 Which shapes have only flat surfaces?



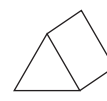
A



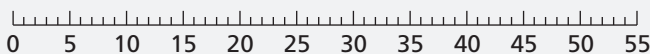
B



C



D



In each case, skip count, writing in the numbers as you go. Use the number line to help you.

Skip count by 2.

2 → 4 → → → → →

Skip count by 4.

4 → 8 → → → → →

Skip count by 10.

10 → → → → → → → →



5:3

out of 9

- 1 6 2 8 3 3
 4 9 9
 7 1 7
 + 3 + 2 + 1

- 4 How much money is in the money box?



- 5 a The month before October.

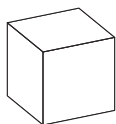
b Days in September.

- 6 Yoo-Jin had 5 pairs of shoes. How many shoes does he have all together?



- 7 The next odd number after 13.

- 8 Name this solid.



- 9 Favourite Animal

Bird	Dog	Cat	Mouse
7	13	4	1

- a The most popular animal was a _____.
- b The least popular animal was a _____.
- c How many people liked dogs? _____
- d How many people liked birds? _____



Turn to ID Card B on page 7.

Give the answers for these numbers.

- (6) _____ (7) _____
- (8) _____ (9) _____
- (13) _____ (14) _____

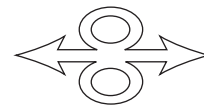
Which of these shapes has six sides? _____



5:4

out of 7

- 1 Draw two lines of symmetry on this shape.



- 2 $9 + 1 + 8 + 2 + 10 + 0$ _____

- 3 $40 - 4 - 4 - 4 - 4 - 4$ _____

- 4 These ladybirds have the same number of dots on both sides. How many dots all together? _____



- 5 If this wavy line were made 3 times as long, how many hills would be drawn? _____



- 6 Rachel saw the same number of koalas in 5 trees. There were 15 koalas. How many in each tree? _____



- 7 $17 + 3 + 16 + 4 + 15 + 5$ _____

Challenge

Draw a 3D object and write everything you know about it.

Answer only the numbers shown.



6, 7, 8, 9, 13, 14

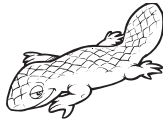
13:1


out of 18

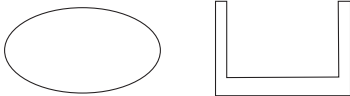
13:2

out of 19

- 1 $6 + 6$ _____ 6 $16 - 8$ _____
 2 $4 + 10$ _____ 7 $13 - 3$ _____
 3 1×2 _____ 8 To 6 add 2. _____
 4 4×2 _____ 9 Half of 10. _____
 5 $\begin{array}{r} 10 \\ + 9 \\ \hline \end{array}$ 10 $\begin{array}{r} 18 \\ - 6 \\ \hline \end{array}$



- 11 Would 3 pencils weigh the same as three of these books? _____
 12 Each half is:  _____ out of _____ equal parts.
 13 Which is larger, 55 or 53? _____
 14 Colour the shape with the larger area.



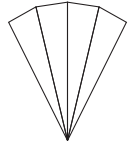
- 15 This picture shows _____ rows of _____.



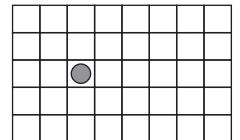
- 16 Which holds more, a cup or a 1 litre bottle? _____
 17 The abbreviation for kilogram. _____
 18 This shows _____ groups of _____.



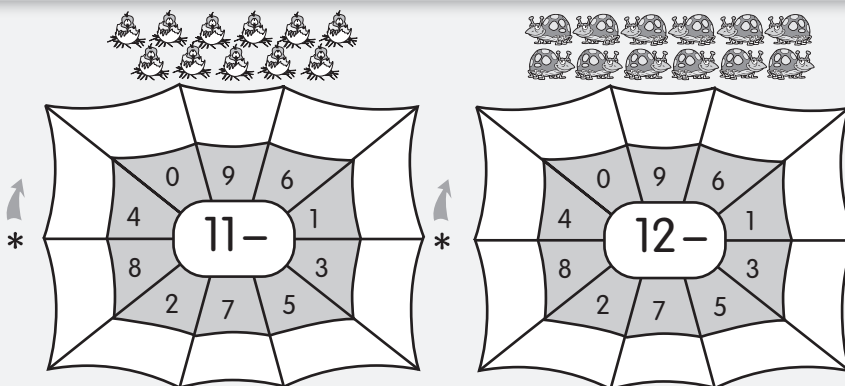
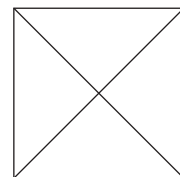
- 1 $13 + 20$ _____ 6 $30 + 43$ _____
 2 $30 - 5$ _____ 7 $8 + 3 + 2 + 7$ _____
 3 7×2 _____ 8 Five times two. _____
 4 2×6 _____ 9 Double 13. _____
 5 $\begin{array}{r} 1 \\ \times 8 \\ \hline \end{array}$ 10 $\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$



- 11 a Colour half of this shape.
 b How many quarters in one half? _____
 12 How many 5 cent coins make 50c? _____
 13 Write 90 in words. _____
 14 Fingers on two hands. _____
 15 The month after April. _____
 16 Follow the directions and colour the path of the counter.
 Move 2 down, then 4 right, then 3 up.



- 17 Write 463 in words. _____
 18 This square is divided into four q _____.
 19 Amy spent \$2 each day for one week. How much did she spend? _____



13:3

out of 13

1	Tens	Ones
	2	2
	+1	1



2	Tens	Ones
	2	4
	+2	3

- 3 Would an apple weigh more or less than a kilogram? _____
- 4 800 plus 500. _____
- 5 How many fingers are on three hands? _____
- 6 What is 15 less than 40? _____
- 7 What is larger, $\frac{1}{2}$ or $\frac{1}{4}$? _____
- 8 Which is larger, 2 099 or 2 103? _____
- 9 Write 3 072 in words. _____
- 10 Make the biggest number you can using 2, 4 and 7. _____
- 11 Write the correct sign (< or >).
a 92 _____ 87 b 107 _____ 131

a

27 + 12 = _____

b

34 + 13 = _____

- 13 Write the short form for:
a 6 kilograms _____
b 12 kilograms _____

13:4

out of 8

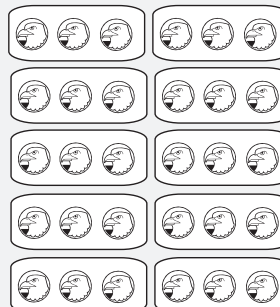
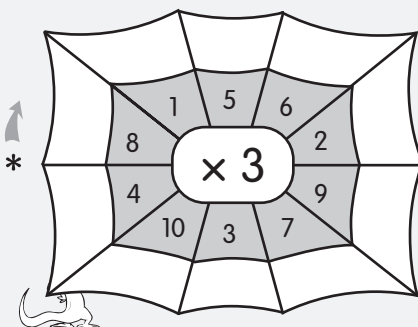
- 1 $12 + 8 + 5 + 5 + 15 + 5$ _____
- 2 $50 - 10 - 10 - 10 - 10 - 10$ _____
- 3 3 groups of 6. _____
- 4 In a race I am 7th out of 10. How many:
a are in front of me? _____
b are behind me? _____
- 5 How many cakes will be in the 16th row of this pattern?

- 6 Which coin is worth more than 20 cents but less than \$1? _____
- 7 Quarters in 6 apples. _____
- 8 Digits in 6 030. _____

Challenge

$67 - 31 = \square$

Explain how you found your answer.



Groups of 3

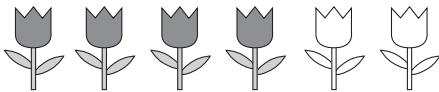


- 1 1×4 _____ 6 $18 - 10$ _____
 2 $7 - 7$ _____ 7 $9 + 9$ _____
 3 $10 + 2$ _____ 8 Total of 4 and 3. _____
 4 3×10 _____ 9 4 less than 17. _____
 5 $\begin{array}{r} 17 \\ - 4 \\ \hline \end{array}$ 10 $\begin{array}{r} 18 \\ + 1 \\ \hline \end{array}$

11 $63 =$

	tens		ones
--	------	--	------

- 12 What part is shaded?



_____ out of _____

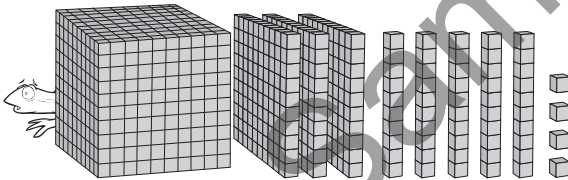
- 13 Impossible, unlikely, likely, certain

Which of these describes the chance of rolling a 6 on a dice? _____

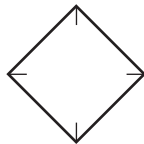
- 14 Which is heavier, a car or a table? _____

- 15 What do you add to 17 to get 20? _____

- 16 What number is shown here? _____



- 17 Four equal squares make 1 whole. Colour one quarter.



- 1 $23 + 7$ _____ 6 23 plus 11. _____
 2 $34 - 8$ _____ 7 34 take away 5. _____
 3 10×2 _____ 8 15, 20, _____, 30
 4 10×5 _____ 9 $\$5 + \$5 + \$5$ _____
 5 $\begin{array}{r} 10 \\ \times 2 \\ \hline \end{array}$ 10 $\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$



- 11 The height of this page correct to the nearest centimetre. _____

- 12 I have 3 trays of cookies. There are 10 cookies on each tray. How many cookies all together? _____

- 13 Write the smallest number using 3, 4, 8 and 1. _____

- 14 Circle the items that would have a mass less than 1 kilogram.

goat

car tyre

pear

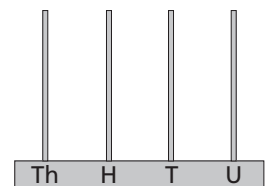
fork

this book

brick

- 15 Write the short form for sixteen kilograms. _____

- 16 Show the number 7524 on this abacus.



- 17 $3000 + 600 + 20 + 9$ _____

- 18 Write 2010 in expanded notation. _____

A coin is to be tossed 10 times.

- a How many heads would be most likely? _____

- b Toss a coin 10 times and show the results in this graph. Colour a circle for each toss.

Heads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

