

**Australian**



# **Signpost** **MATHS**

Sample pages

**3**

**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 examples** (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 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
How Would You Name the Lizards?	84
Answers	A1–A12 (middle pages)



## Unit Activities

Unit	Content	Extra Activity	Unit	Content	Extra Activity
<b>1:1/2</b> <b>1:3/4</b>	+ 1, – 1 Personal measures	+/- tables Measure	<b>20:1/2</b> <b>20:3/4</b>	Chance Language	Chance ID Card A
<b>2:1/2</b> <b>2:3/4</b>	Australian money Looking for tens	Concept Concept	<b>21:1/2</b> <b>21:3/4</b>	13 –, 14 – Time in minutes	– tables Measure
<b>3:1/2</b> <b>3:3/4</b>	Australian money + 1, – 1	Concept +/- tables	<b>22:1/2</b> <b>22:3/4</b>	+ 8, + 9 Addition grid	+ tables + tables
<b>4:1/2</b> <b>4:3/4</b>	Time Chance	Measure Chance	<b>23:1/2</b> <b>23:3/4</b>	× 5 Perimeter	× tables Measure
<b>5:1/2</b> <b>5:3/4</b>	Skip counting Language	× tables ID Card B	<b>24:1/2</b> <b>24:3/4</b>	– 10, – 10 Rounding (nearest 100)	– tables Concept
<b>6:1/2</b> <b>6:3/4</b>	× 2, × 4 Problem solving	× tables Strategy time	<b>25:1/2</b> <b>25:3/4</b>	24 +, 32 + Language	+ tables ID Card B
<b>7:1/2</b> <b>7:3/4</b>	Rows of, groups of Skip counting	× tables × tables	<b>26:1/2</b> <b>26:3/4</b>	15 –, 16 – Linking + and –	– tables Concept
<b>8:1/2</b> <b>8:3/4</b>	+ 2, + 3 Subtracting 9	+ tables Concept	<b>27:1/2</b> <b>27:3/4</b>	+ 3, + 5 Rounding (nearest 10)	+ tables Concept
<b>9:1/2</b> <b>9:3/4</b>	× 10 × 5	× tables × tables	<b>28:1/2</b> <b>28:3/4</b>	+ 4, + 6 Using number lines	+ tables – tables
<b>10:1/2</b> <b>10:3/4</b>	× 5, × 0 Language	× tables ID Card B	<b>29:1/2</b> <b>29:3/4</b>	– 2, – 4 + 7, + 9	– tables + tables
<b>11:1/2</b> <b>11:3/4</b>	+ 3, + 4 Lots of, groups of	+ tables Concept	<b>30:1/2</b> <b>30:3/4</b>	Chance Language	Chance ID Card A
<b>12:1/2</b> <b>12:3/4</b>	× 3 7 –, 8 –	× tables – tables	<b>31:1/2</b> <b>31:3/4</b>	Writing fractions Near doubling	Concept Concept
<b>13:1/2</b> <b>13:3/4</b>	11 –, 12 – × 3	– tables × tables	<b>32:1/2</b> <b>32:3/4</b>	Chance Fractions	Chance Concept
<b>14:1/2</b> <b>14:3/4</b>	Chance Adding with blocks	Chance Concept	<b>33:1/2</b> <b>33:3/4</b>	Subtraction Language	Concept ID Card B
<b>15:1/2</b> <b>15:3/4</b>	× 1, × 10 Language	× tables ID Card B	<b>34:1/2</b> <b>34:3/4</b>	Problem solving Linking + and –	Strategy time Concept
<b>16:1/2</b> <b>16:3/4</b>	+ 5 Roman numerals	+ tables Concept	<b>35:1/2</b> <b>35:3/4</b>	+ 8 Language	+ tables ID Card A
<b>17:1/2</b> <b>17:3/4</b>	+ 6, + 7 Combinations to 10 & 13	+ tables Concept	<b>36:1/2</b> <b>36:3/4</b>	Language Problem solving	ID Card A Strategy time
<b>18:1/2</b> <b>18:3/4</b>	Chance 13 –, 14 –	Chance – tables	<b>37:1/2</b> <b>37:3/4</b>	Rounding (nearest 5) Personal measures	Concept Measure
<b>19:1/2</b> <b>19:3/4</b>	Chance + 10, + 10	Chance + tables	<b>Answers</b>	These can be found in the middle of this book on pages A1 to A12.	



2:3



out of 14

- 1  $16 - 3$  \_\_\_\_\_
- 2  $20 - 4$  \_\_\_\_\_
- 3  $10 + 10$  \_\_\_\_\_
- 4  $9 + 8$  \_\_\_\_\_
- 5 Four plus ten. \_\_\_\_\_
- 6  $\$2 + \$8 + \$5$  \_\_\_\_\_
- 7 21, 23, \_\_\_\_\_, 27
- 8 20 minus 2. \_\_\_\_\_
- 9 Write 17 in words. \_\_\_\_\_

10



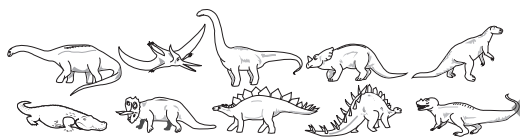
- a  $28 + 3$  \_\_\_\_\_
- b  $28 + 7$  \_\_\_\_\_

11 What is:

- a behind the book? \_\_\_\_\_
- b in front of the jug? \_\_\_\_\_



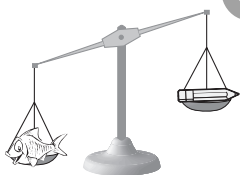
12 I had 10 toy dinosaurs. I sold 6. How many were left? \_\_\_\_\_



13 Write a number story for this picture.



14 Circle the heavier object.



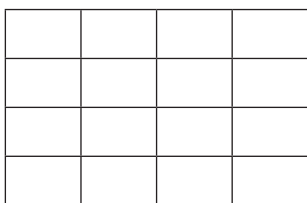
2:4

out of 6

- 1 a  $7 + \square = 15$   $\square =$  \_\_\_\_\_  
b  $\square + 16 = 24$   $\square =$  \_\_\_\_\_
- 2 In a race, I am 4th out of 5. How many are:  
a in front of me? \_\_\_\_\_  
b behind me? \_\_\_\_\_
- 3 Use the code to work out this message.

A	B	C	D	E	I	K	N	S
1	2	3	4	5	6	7	8	9

$11 - 9$	$2 + 3$	$3 + 4$	$10 - 4$	$8 + 0$	$12 - 8$

- 4 What is the time half an hour after quarter past three? \_\_\_\_\_
- 5 Colour one quarter of this shape. 
- 6  $2 + 8 + 3 + 7 + 1 + 9$  \_\_\_\_\_

Challenge

Write different number sentences that equal 15.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Looking for Tens When Adding Numbers

4  
7  
6  
17

- $1 + 9$
- $5 + 5$
- $8 + 2$
- $3 + 7$

That's 1 ten and 7.



- a 1 b 4 c 5 d 2 e 6
- 8 3 5 6 4
- 9 7 2 8 9
- f 8 g 7 h 3 i 9 j 7
- 9 8 5 4 7
- 1 2 5 6 3

**3:1**

out of 5

**1** In **a** to **h**, write the number modelled.

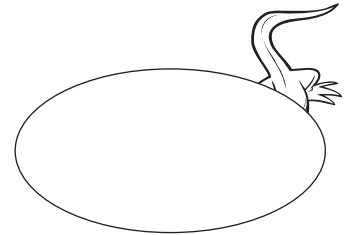
<b>a</b>  _____	<b>b</b>  _____
<b>c</b>  _____	<b>d</b>  _____
<b>e</b>  _____	<b>f</b>  _____
<b>g</b>  _____	<b>h</b>  _____

**2** **a** 3, 6, 9, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_**b** 4, 8, 12, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_**c** 7, 14, 21, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_**3** Complete:

1st, 2nd, \_\_\_\_\_, \_\_\_\_\_

**4** Ryan had \$20 and spent \$10 to buy a toy bear. How much does he have left?**5** **a**  $1 + 9 =$  \_\_\_\_\_**b**  $9 + 1 =$  \_\_\_\_\_**c**  $10 - 1 =$  \_\_\_\_\_**d**  $10 - 9 =$  \_\_\_\_\_**3:2**

out of 15

**1**  $4 + 5 =$  \_\_\_\_\_**6** 8 and 4. \_\_\_\_\_**2**  $7 + 8 =$  \_\_\_\_\_**7** 9 plus six. \_\_\_\_\_**3**  $2 + 3 =$  \_\_\_\_\_**8** 7 add four. \_\_\_\_\_**4**  $8 + 9 =$  \_\_\_\_\_**9** 8 and 3. \_\_\_\_\_**5** 
$$\begin{array}{r} 9 \\ - 8 \\ \hline \end{array}$$
**10** 
$$\begin{array}{r} 7 \\ - 5 \\ \hline \end{array}$$
**11** Each small cube stands for one child's choice. How many chose:**a** green? \_\_\_\_\_ **b** yellow? \_\_\_\_\_**12** Draw a rectangle inside this oval, so that each corner touches the oval.**13** Write the value of each coin.

\_\_\_\_\_

**14** Complete these near doubles. $3 + 4$  \_\_\_\_\_  $7 + 8$  \_\_\_\_\_  $9 + 8$  \_\_\_\_\_**15** Use bridging to ten to find: $9 + 5$  \_\_\_\_\_  $8 + 6$  \_\_\_\_\_  $9 + 3$  \_\_\_\_\_**Australian Money**

Write the value of each Australian note. Colour each note the correct colour.



10 dollars



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Concept

10:3

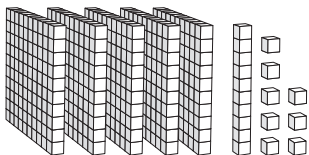
out of 14

1  $\begin{array}{r} 13 \\ + 4 \\ \hline \end{array}$       2  $\begin{array}{r} 12 \\ + 3 \\ \hline \end{array}$       3  $\begin{array}{r} 14 \\ + 5 \\ \hline \end{array}$

- 4 635, 640, 645, \_\_\_\_\_, \_\_\_\_\_  
 5 Is the width of an elephant about 2 metres? \_\_\_\_\_  
 6 18 metres minus 9 metres. \_\_\_\_\_  
 7 Use the jump strategy to find  $26 + 35$ .  
 \_\_\_\_\_

- 8 Join the dots.  
 This is a regular \_\_\_\_\_  
 \_\_\_\_\_

- 9 Write the numeral for:  
 \_\_\_\_\_



- 10 Write 839 in words. \_\_\_\_\_  
 \_\_\_\_\_  
 11 The next even number after 16. \_\_\_\_\_  
 12 Round off 54 to the nearest 10. \_\_\_\_\_  
 13 The months of winter. \_\_\_\_\_  
 \_\_\_\_\_  
 14 Complete the pattern.



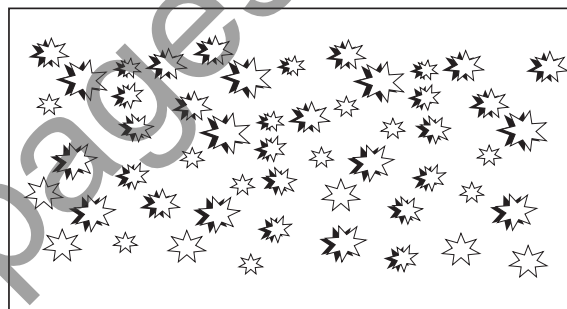
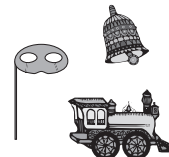
Turn to ID Card B on page 7.  
 Give the answers for these numbers.

- (15) \_\_\_\_\_ (16) \_\_\_\_\_  
 (17) \_\_\_\_\_ shapes (21) \_\_\_\_\_  
 (22) \_\_\_\_\_ (23) \_\_\_\_\_  
 (28) \_\_\_\_\_ (29) \_\_\_\_\_

10:4

out of 6

- 1 69, 89, 109, \_\_\_\_\_, \_\_\_\_\_  
 2 Which is larger,  $3 \times 5$  or  $8 + 8$ ? \_\_\_\_\_  
 3  $40c + 40c + 50c$  \_\_\_\_\_  
 4 I came 1st in a race out of 8.  
 How many came:  
 a in front of me? \_\_\_\_\_  
 b behind me? \_\_\_\_\_  
 5 I will give Li two of these toys. How many different groups of 2 could I give? \_\_\_\_\_  
 6 Estimate the number of stars, group them in tens, then count.



Estimate = \_\_\_\_\_ Number = \_\_\_\_\_

Challenge

$42 + 35 =$  \_\_\_\_\_  
 Explain how you found your answer.



Fill out the table for this cube.



	Faces	Edges	Corners
Number			

**11:1**

□ out of 22

- 1  $10 + 1$  \_\_\_\_\_ 6  $18 - 10$  \_\_\_\_\_  
 2  $13 - 3$  \_\_\_\_\_ 7  $2 \times 2$  \_\_\_\_\_  
 3  $5 \times 2$  \_\_\_\_\_ 8 Double 3. \_\_\_\_\_  
 4  $7 + 7$  \_\_\_\_\_ 9 5 less than 7. \_\_\_\_\_  
 5  $\begin{array}{r} 16 \\ + 4 \\ \hline \end{array}$  10  $\begin{array}{r} 15 \\ - 5 \\ \hline \end{array}$

- 11 The number between 45 and 47. \_\_\_\_\_  
 12 How many sides are on 2 squares? \_\_\_\_\_  
 13 Show 28 on this numeral expander.



- 14 The word for 18. \_\_\_\_\_  
 15 Order from smallest to largest.  
 17, 30, 5, 26 \_\_\_\_\_  
 16 What time is shown?  
 \_\_\_\_\_



- 17  $20c + 10c + 50c$  \_\_\_\_\_  
 18 Months in 1 year. \_\_\_\_\_  
 19 This is a \_\_\_\_\_ line.  
 20 Is it impossible to grow a tail and long ears if I eat carrots? \_\_\_\_\_  
 21 Is 93 an odd number? \_\_\_\_\_  
 22 10, 12, 14, 16, \_\_\_\_\_, \_\_\_\_\_

**11:2**

□ out of 17

- 1  $15 + 4$  \_\_\_\_\_ 6 12 shared by 2. \_\_\_\_\_  
 2  $15 - 4$  \_\_\_\_\_ 7  $8 \times 1$  \_\_\_\_\_  
 3  $5 \times 10$  \_\_\_\_\_ 8 Double 12. \_\_\_\_\_  
 4  $3 \times 2$  \_\_\_\_\_ 9 Sum of 10 and 11. \_\_\_\_\_  
 5  $\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$  10  $\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$

- 11 a Write the digital time shown in words.  
 \_\_\_\_\_

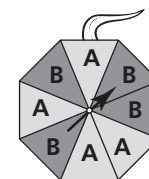


b It is \_\_\_\_\_ past \_\_\_\_\_.

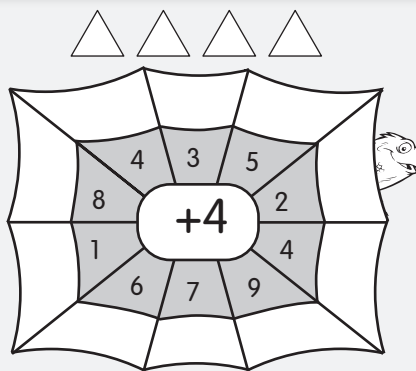
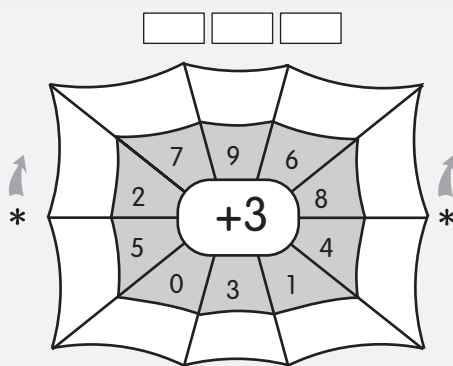
- 12 Is the height of your teacher less than 1 m? \_\_\_\_\_  
 13 Make the largest number possible using 1, 7 and 3. \_\_\_\_\_  
 14 Use the jump strategy to find  $51 - 23$ . \_\_\_\_\_

- 15 Write < (less than) or > (greater than).  
 a  $35$  \_\_\_\_\_  $21$       b  $37$  \_\_\_\_\_  $59$

- 16 Is there an even chance of spinning a B? \_\_\_\_\_



- 17 Write the numeral for six hundred and ninety-two. \_\_\_\_\_



Count on to find your answer.



11:3

out of 10

- 1  $35 + 6$       2  $26 + 8$       3  $44 + 7$

4 The digital time:

a is read as \_\_\_\_\_

b means \_\_\_\_\_

\_\_\_\_\_ minutes past \_\_\_\_\_

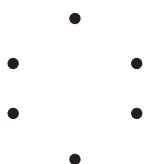


5 Use the jump strategy to find  $43 + 19$ .

\_\_\_\_\_

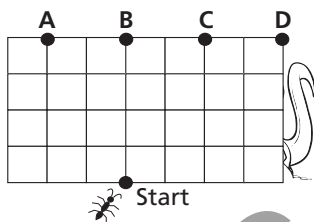
6 Join the dots.

This is a regular \_\_\_\_\_.



7 Write 340 in words. \_\_\_\_\_

8 Where does the ant stop if he goes:  
2 up, 3 left, 1 down,  
5 right and then 3 up?



9 Certain, impossible, likely or unlikely?  
"The next person I meet will be able to hold their breath for 1 hour." \_\_\_\_\_

10 Approximately, how wide is your classroom? \_\_\_\_\_ metres.

11:4

out of 6

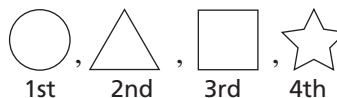
1 If "<" means "is less than", write true (T) or false (F) for:

a  $99 < 100$  \_\_\_\_\_      b  $6 \times 7 < 40$  \_\_\_\_\_

2 a Half of 12. \_\_\_\_\_

b A quarter of 12. \_\_\_\_\_

3 If this pattern were repeated, what would the 8th shape be? \_\_\_\_\_



4 How many different arrangements can you make? \_\_\_\_\_



5 Ten pens fill one box.

How many boxes can be filled with:

a 30 pens? \_\_\_\_\_      b 70 pens? \_\_\_\_\_

6  $40 + 6 + 4 + 8 + 2 + 1 + 9$  \_\_\_\_\_

Challenge

$39 + 7 =$

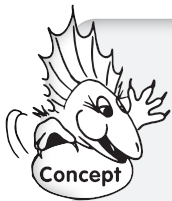
Explain how you found your answer.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



a How many **lots of 5** coins? \_\_\_\_\_



c How many **groups of 4** fish? \_\_\_\_\_



b How many **groups of 6** cones? \_\_\_\_\_



d How many **groups of 3** stars? \_\_\_\_\_





18:3

out of 14

1  $\begin{array}{r} 42 \\ - 4 \\ \hline \end{array}$       2  $\begin{array}{r} 51 \\ - 3 \\ \hline \end{array}$       3  $\begin{array}{r} 73 \\ - 5 \\ \hline \end{array}$

4 The season after autumn. \_\_\_\_\_

5 40, 50, 60, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

6 Which coin has the greatest surface area? \_\_\_\_\_



7 How many 20c coins in \$2? \_\_\_\_\_

8 Multiply 7 by 2. \_\_\_\_\_

9  $18 + 7 + 2$  \_\_\_\_\_

10 How many animals in 32 pairs? \_\_\_\_\_



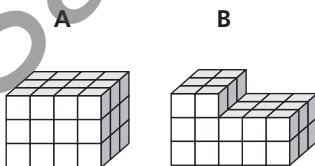
11 What part is shaded? \_\_\_\_\_ out of \_\_\_\_\_



12  $\$1 + \$2 + \$50c + 20c$  \_\_\_\_\_

13 33, 44, 55, \_\_\_\_\_, \_\_\_\_\_

14 Is the volume of A, less than, equal to or more than the volume of B? \_\_\_\_\_

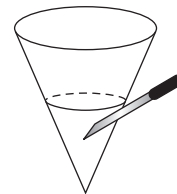


18:4

out of 5

1 The bottom part is cut off. The part left would be:

- A half of the volume
- B more than half
- C less than half

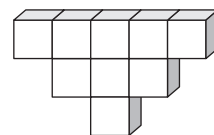


2  $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$  \_\_\_\_\_

3 Twelve bolts have the same mass as 2 shoes. How many bolts have the same mass as 4 shoes? \_\_\_\_\_

4 Three different 1-digit numbers that add to give 24. \_\_\_\_\_

5 How many blocks would be in the 6th level? \_\_\_\_\_



Challenge

Draw and label containers that hold less than 1 litre.

