

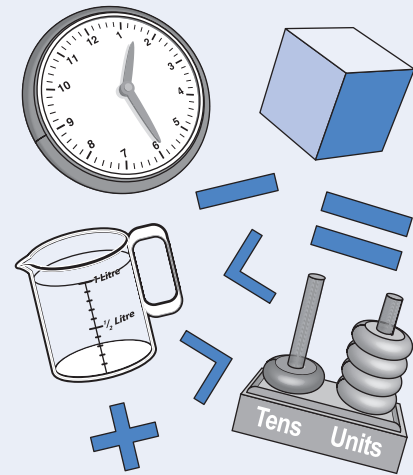
FOREWORD

New wave mental maths is a series of student workbooks, written to provide a comprehensive and structured daily mental maths program for students in Australian primary schools.

It has been revised to incorporate the requirements of the Australian maths curriculum and is designed to:

- encourage and develop students' mental calculation concepts and skills
- develop and reinforce students' problem-solving strategies
- develop and maintain students' speed of recall
- introduce students to, and help them practise and understand, a range of mathematics vocabulary.

Assessment activities are provided for students to assess, monitor and record their own performance on a weekly basis. A separate teachers guide is available to accompany the **New wave mental maths** series. This manual contains guidelines to help develop mental strategies, suggestions for classroom use, assessment tools, a list of the concepts developed and answers.



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MONDAY

1. What is the time if the big hand is on 7 and the little hand is between 2 and 3?



2. $8 \times 5 =$, $0.8 \times 0.5 =$

3. If a clock shows 9 o'clock, what is the size of the smaller angle between the two hands?

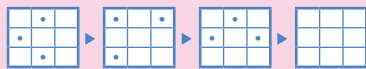
45° 90° 9°

4. Round π to the nearest whole.

5. $\frac{4}{5} + \frac{4}{5} =$

6. Write *one million* as a numeral.

7. Complete the pattern.



8. The opposite numbers on a dice always add up to 7. Of which two numbers could the blank face be?



9. Are the triangles congruent or similar?
 congruent similar



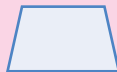
10. What is the area of a square with 4-cm sides?



11. $\frac{2}{3} \times 3 =$

12. Simplify $\frac{5}{10}$

13. Name this shape.



14. Is 213 divisible by 3 or 4?

15. 10% of 100 =

16. If rounded, is $3\frac{3}{4}$ closer to 3 or 4?

17.

Measure this line. mm

18. Write 6 pm in 24-hour time.

19. What is the lowest common denominator (LCD) for $\frac{1}{2}$ and $\frac{1}{5}$?

(a) 8 (b) 10 (c) 20 (d) 7

20. $4 - 0.2 =$



MY SCORE

TUESDAY

1. What is the time when the big hand is on 11 and the little hand is nearly on 5?



2. Draw a reflection. \leftrightarrow

3. Round $2\frac{7}{10}$ to the nearest whole number.

4. Follow the instructions to correctly match 23, 11, 9 and 55 to each box.

- (a) The lower prime number has no number to its left.
(b) The two composite numbers are between the two prime numbers.
(c) The multiple of five is immediately left of a prime.

5. Halve 500.

6. If $16 = (a + 8)$, then $a =$

7. $(5 \times 5) + (2 \times 10) =$

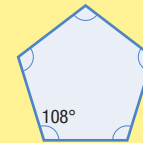
8. Draw the square's diagonals.



9. The LCD for $\frac{1}{4}$ and $\frac{3}{10}$ is:

(a) 10. (b) 15. (c) 20. (d) 24.

10. What is the sum of the interior angles of a regular pentagon?



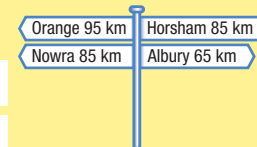
11. Another way of writing 5^2 is:

(a) 5×2 (b) 5×5 (c) 52 (d) 2 lots of 5

12. $47 + 97 =$

13. The place value of 8 in 82 411 is .

14. Which two towns are 160 km apart?



15. $\frac{6}{10} + \frac{4}{100} = 0.$

16. If 1 cm³ displaces 1 mL of water, what volume of water is displaced by 100 cm³?

17. $\$5.50 + \$6.50 =$

18. Olivia puts 8 roses in each of 6 vases. She has 2 roses left over. How many roses did she begin with?


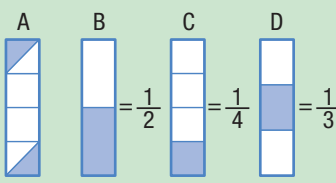

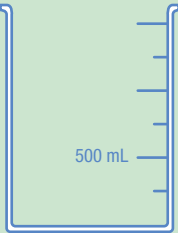
19. $5 \overline{)105} =$

20. $4 \times \frac{3}{4} =$





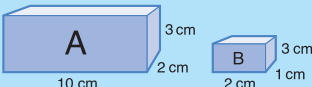
MY SCORE

WEDNESDAY

1. A triangle has 3 angles that sum to .
A quadrilateral has 4 angles that sum to .
2. If $y \div 4 = 40$, then $y =$.
3. $50\,000 - 12\,000 =$.
4. $10 - 0.98 =$.
5. Name this shape. (Not all 12 faces are shown.)
 
6. $0.008 + 0.4 + 0.05 =$.
7. $3\frac{7}{10} + 2\frac{7}{10} =$.
8. Which fraction matches A?
 
9. $18 \times \frac{3}{6} =$.
10. Measure \overline{AB} . mm 
11. A square paddock has 6 fence posts along each side. How many fence posts are there altogether?
12. $6\frac{1}{3} - \frac{2}{3} =$.
13. Shade 1500 mL. 
14. $29 \frac{\quad}{100} = 0.29$
15. $999\,995 + 10 =$.
16. What is the perimeter of a rectangular block 35 m in width and 55 m in length? .
17. How many faces does a triangular prism have? .
18. If Western Standard Time (AWST) in Perth is 6 pm, what is AEST in Brisbane?
19. $5 \times 2 + 12 \div 6 =$.
20. What is the chance of rolling a 2 on a dice?

MY SCORE

THURSDAY

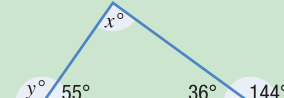
1. A regular pentagon has internal angles that add to .
2. If the time is 11.20 pm, what will it be 26 hours later? .
3. Name this shape. (Not all 20 faces are shown.)
 
4. What is the place value of 7 in 7 111 233?
.
5. What two prime numbers have the sum of 16?
6. 3.05, 2.8, 2.55, ,
7. Draw the only pentomino shape that has a perimeter of 10 units only (the rest 12 units).
8. 25% of 60 is .
9. Simon Wallinger scored 180 runs from 2 innings. What is his average?
10. 
What fraction of the rectangle is shaded?
11. $42 - 18 =$.
12. What is the angle size of a semicircle? .
13. $999\,997 + 10 =$.
14. 
How many B boxes would fit into Box A?
15. $19 + 17 =$.
16. $2 + \frac{4}{100} + \frac{8}{10} =$.
17. A book is open and the two page numbers sum to 49. What are the two page numbers?
18. How many 50c coins make up \$50.00?
19. 3.3, 3.6, 3.9,
20. A hat contains 10 boys' and 20 girls' names. What is the chance of selecting a boy's name?

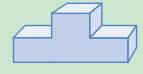
MY SCORE

WEDNESDAY

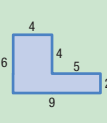
1. What two prime numbers equal the sum of 22?
2. $100\ 000 - 31\ 000 =$
3. The LCD for $\frac{2}{10}$ and $\frac{3}{4}$ is .
4. A rectangular-shaped warehouse has a perimeter of 70 m. The width is 15 m.
The length is m.
5. Write *one million, nine hundred and nine thousand* as a numeral.
6. $8.03 \div$ $= 0.0803$
7. If $y \times 12 = 24$, then $y =$.

8. Without using a protractor, what is the size of angle x° ?



9. What is the size of angle y ?
10. Could this 3-D shape tessellate?
yes *no* 
11. Does $2117 + 3119 + 4246$ equal an odd or even number?
odd *even*


12. Double the length of the sides of this shape. Write the new measurements on each side.



13. A coin-counting machine calculates by the mass of the coin. If a 10c coin weighs 5.65 g, what is the value of 56.5g?

14. $5 \overline{)930} = 10 \overline{)}$

15. $100\% = \frac{100}{100} =$

16. Draw the reflection. 

17. $200\ 000 +$ $= 1\ 000\ 000$

18. $3 + \frac{4}{100} + \frac{7}{10} =$

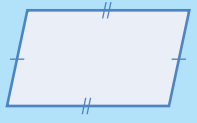
19. Complete the pattern.

		Y		Y	Δ		Y	Δ	X			
		Δ				X				A		
	A	X				A						

20. $10\ \text{ha} =$ m^2

MY SCORE

THURSDAY

1. Simplify $\frac{10}{15}$
2. What is the median of 5, 8, 10, 12?
3. Name this shape. 
4. If $y \times 6 = 24$, then $y =$.
5. $25\% =$ (a) $\frac{1}{8}$ (b) $\frac{1}{4}$ (c) $\frac{1}{2}$ (d) 2.5
6. $\frac{3}{4} = 0.$ $=$ $\%$
7. $8 \times 4 \times 3 =$
8. $\$50.00 - \$31.65 =$
9. $\frac{5}{6} = \frac{15}{18}$ *true* *false*


10. If on a building plan a line representing a wall is 90 mm and the plan has a scale of 1:100, how many metres long is the actual wall?

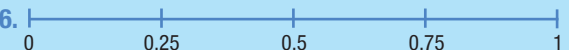
11. $32\ 000 + 158\ 000 =$

12. $9 \times 12 =$

13. $11^2 =$

14. Draw a line to create an irregular pentagon. 

15. 
Measure line \overline{AB} . mm

16. 
What is the chance of randomly picking hearts or diamonds from a deck of 52 cards? Mark it on the scale.

17. $8\frac{3}{5} + 1\frac{3}{5} =$

18. $15\ 000 - 9500 =$

19. Follow the instructions to correctly match $\frac{3}{4}$, 0.8, $1\frac{2}{3}$ and $\frac{19}{5}$ to each box.
(a) A fraction is left of the decimal
(b) The mixed number is right of the improper fraction
(c) The decimal is left of the improper fraction.

20. If $3\frac{1}{4} + y = 3\frac{3}{4}$, then $y =$.

MY SCORE

WEDNESDAY


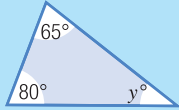
1. Name a 3-D shape that is a tetrahedron.
2. $5 \overline{)1110} =$
3. A class of 24 students completed a combined total of 432 laps for a school lapathon. Which expression matches the average number of laps per person? (Tick your answer.)
 (a) $432 + 24$ (b) $432 - 24$
 (c) $432 \div 24$ (d) 24×432
4. $110 - 50 =$
5. $\frac{5}{20} > \frac{1}{2}$ true false
6. $149.7 \div 100 =$
7. Double $\frac{1}{4}$
8. Which two prime numbers when added equal 24?
9. If $9.3 - a = 8.9$, then $a =$
10. If chocolate chip ice-cream costs \$4.50 for 1 L, how much does 5 L cost?
11. $\frac{8}{10} - \frac{2}{5} =$
12. A jam factory loses $\frac{1}{10}$ of its 1000 jars due to breakage. How many are lost?
13. What is the sum of 300 and 900?
14. 25% of 8 m = 50% of m
15. If placed in water, a 1000-cm³ cube will displace mL.
16. Write the missing numbers.

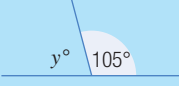



0			450			900
17. $150 \text{ kg} = 0.$ t
18. $40 + 60 + 90 =$
19. How many hours difference between 6.30 pm Thursday and 7.00 am Saturday?
20. Complete the pattern.

↓	↘	↑	▶	↘	→	↘	▶				▶	↘	↘	↘
↘	↘	→	▶	↑	←	↘	▶				▶	→	↘	↘
↘	↘	←	▶	↓	←	↘	▶				▶	←	↑	↘

MY SCORE





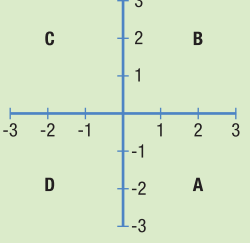

THURSDAY

1. A blue train leaves the station at the time of 0711 and the next station is 43 minutes away. What time does it arrive?
 
2. $210 - 80 =$ 
3. $y^\circ =$
4. If $40 \times a =$ half of 400, then $a =$
5. Write the missing numbers.

0			350			700
6. Double $15\frac{1}{2}$
7. Halve 390.
8. $\frac{4}{5} \times 400 =$
9. $232.3 \div 100 =$
10. $y^\circ =$ 
11. To draw a right-angle triangle, your measurements are: 
12. $4 \times 8 =$
13. 2.993, 2.996, 2.999,
14. Draw the reflection.
7432 
15. $6\frac{1}{3} \neq 6.3\dot{3}$ true false
16. $150 - 90 =$
17. What is the total mass of these three chocolate boxes?

18. $7 \text{ mm} = 0.$ m
19. Round 16 602 to the nearest thousand.
20. The Horse Hotel charges \$8 per horse per day for its stables. If you had 4 horses for the month of August what would be the total cost?

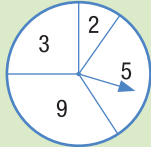
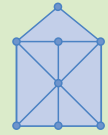

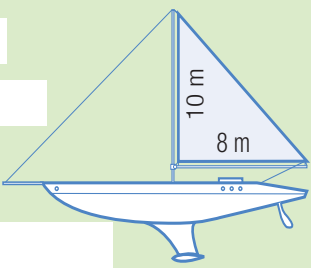
MY SCORE

FRIDAY TEST WEEK 35

- $2 + 8 \times 2 \div 4 =$
- $\$100.00 - \$59.30 =$
- $2.36 \text{ kg} =$ g
- 12.2, 12.4, 12.6, 12.8,
- $\frac{4}{10} =$ %
- A pack of 3 bread rolls costs \$1.99. A pack of 4 costs \$3.20. Which pack is cheaper per roll?
- $10\,003 - 30 =$
- $5 + 4 \times 8 \div 2 + 5 =$
- $4 \overline{)3624} =$
- What is the time in Sydney, if it is 4.30 am in Darwin?
- Draw the lines of symmetry. 
- Halve 895.
- $800 + 5300 + 900 =$
- $43 \times 6 = 3 \times$
- If a plane is departing at 0010 on Wednesday 15 June, what day, date and time should you arrive at the airport if you need to arrive 90 minutes prior to departure?
- $2 \times 9 + 7 = 324$
- Double this shape. 
- $6 \times 5 \times 3 =$
- Show a rotation of 450° clockwise. 
- $74 \times 8 =$ $\times 4$
- Round 5.232 to the nearest tenth.
- If you are cycling at 24 km/h, how far will you ride in 10 minutes? 
- Is A, B, C or D at $(-2, -2)$? 
- $a + a = 2a = 16$
 $a + a + a = 3a = 24$
 $a =$
- Which two towns have a round trip of 70 km?
 

MY SCORE

FRIDAY TEST WEEK 36

- In Melbourne, it is 2.30 pm (AEST). What is the time in the Northern Territory (ACST)?
- $4 - 6 =$
- $\frac{1}{8} = 0.$
- $36 \div 4 \times 3 =$
- $2 + \frac{7}{100} + \frac{1}{10} =$
- The chance of spinning an odd number is: 
 - > 0.5 .
 - < 0.5 .
 1.
 - 1 in 4.
- $2070 \text{ mm} =$ m
- $1 \text{ mg} =$ g
- If $600/e = 100$, then $e =$
- $5, 5\frac{1}{4}, 5\frac{3}{4}, 6\frac{1}{2},$
- $\$100.00 - \$37.30 =$
- $8.3 + 0.7 =$
- $98 \times 8 =$ $\times 4$ 
- Can this network be traversed? *yes* *no*
- Share \$500 equally among 20 people. each
- $4 \times 8 =$
- $2.4 \times 1.5 =$ (a) 3.6 (b) 0.36
(c) 0.036 (d) 36.0
- Write in descending order:
 $0.32, 15\%, 2.1, \frac{1}{5} \text{ of } 4, 7^2 \times 0.01.$
- $72 \times 6 = 12$
- If you are cycling at 36 km/h, how far will you travel in 10 minutes?
- What is the original water level if the block is 150 cm^3 ? 
- Round 0.477 to the nearest tenth.
- To make pancakes, a chef used 2 cups of flour to 3 cups of milk. How many cups of flour were used if the chef used 21 cups of milk?
- What is the area of this sail? 
- What is the cost of the above sail if a sail maker charges \$20 per square metre?

MY SCORE