

Support for OLNA Readiness

The problem

Students often struggle before the maths begins

- Understanding the question
 - Choosing the method
 - Carrying out the steps

What makes our approach different

- Not just more questions
 - Identifies where students get stuck
- Combines teaching, modelling and practice

Tools to support numeracy success

- Revise foundation skills necessary for numeracy success
- Model problem solving
- Develop routines that reduce cognitive load

**Print
solutions**

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2. Place value and decimals

Place value is important when working with money, units or estimation and when multiplying or dividing by 10, 100 and 1000.

- $\times 10 \rightarrow$ move decimal point (d.p.) 1 place to the right
- $\times 100 \rightarrow$ move d.p. 2 places to the right
- $\div 10 \rightarrow$ move d.p. 1 place to the left
- $\div 100 \rightarrow$ move d.p. 2 places to the left
- $0.5 \neq 0.05$, the zero before the 5 changes the value.
- $\$1 = 100$ cents
- 0.5 hours = 30 minutes
- 0.5 m = 50 cm

Using a table can help you. Start by writing 2.5 in the table; it has 2 ones and 5 tenths. See how it changes if we multiply or divide by factors of 10.

	100s	10s	1s	.	0.1s	0.01s
Multiply 2.5 by 10		2	5	-	0	
Divide 25 by 100			0	-	2	5
Multiply 0.25 by 1000	2	5	0	-	0	

Example 2 Using place value in addition and multiplication

Use place value to evaluate the following.

a Add \$3.50, \$1.70 and 30 cents.

b 80×0.04

Solution

a

\$3.50	
\$1.70	
$\pm \$0.30$	
\$5.50	

b $80 \times 4 = 320$

$80 \times 0.04 = 3.2$

Explanation

Note that 30 cents = \$0.30.
Line up decimal points so that digits of the same place value are added together.

Perform multiplication ignoring the decimal point.
($80 \times 4 = 320$)

There are two decimal places in the question, so two decimal places in the answer.

**Notepad summaries
for revision or
assessment strategy**

**Worked examples
with immediate
practice – foundation
skills and OLNA-style**

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Problem solving skills

When you see a worded maths question, use a clear strategy to break it down. The steps below will help you understand and solve problems with confidence.

The worked examples on the following pages use these problem-solving steps in OLNA-style questions.

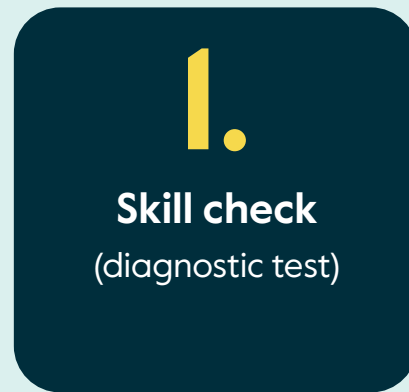
- 1 Read the question**
Then read it again.
• Write down important numbers and words.
What does the question say?
- 2 Rework the problem.** Say it or write it in your own words.
• What is the question actually asking you to do?
What am I asked to find?
- 3 Decide on a strategy.** What mathematics is needed?
• Make a list or a table
• Draw a diagram
• Break the problem into smaller parts.
• Try working backwards
What ideas do I have?
- 4 Do the maths.**
• Estimate first. What answer are you expecting?
• Write down the mathematical steps you used.
How can I unlock the solution?
- 5 Check**
• Have you answered the question?
• Does your answer make sense? Does it match your estimate?
• Can you explain (justify) your answer?
• Have you used the correct units?
Does my solution make sense?

**Problem solving
method (flowchart)**

The Year 10 textbook includes a **Focus on OLNA success** chapter that offers practical strategies students can draw on. The Years 7-9 textbooks also include a **Focus on numeracy success** chapter in every year level to build both critical numeracy skills and student confidence.



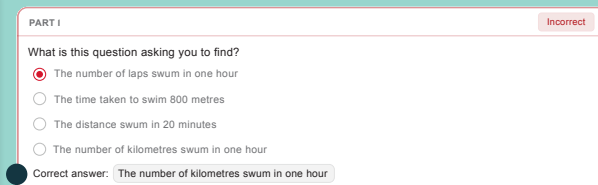
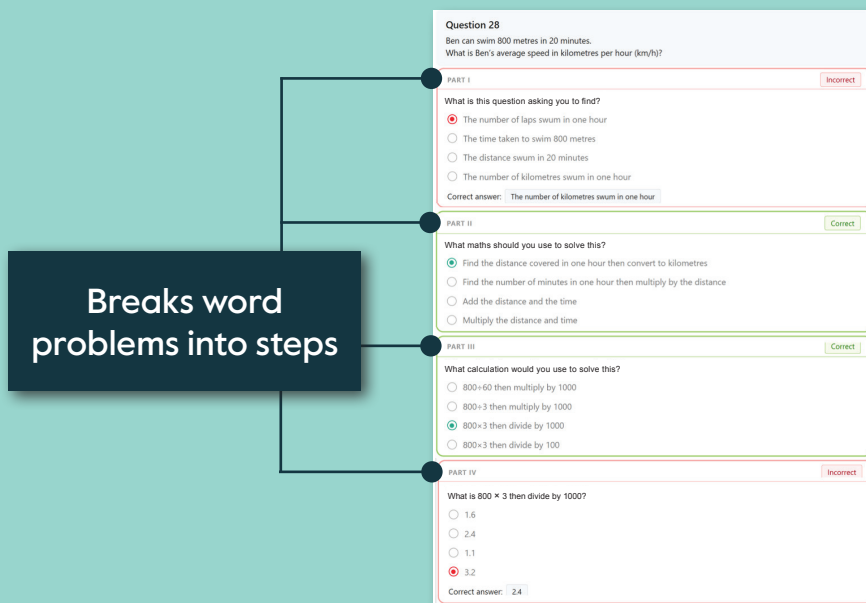
Tools to support m



Stage 1 - Skill check

Use diagnostic pre-tests to:

- Identify the steps of problem solving where students struggle



Shows answers as students progress

- Identify gaps in core maths skills
- Compare problem solving with and without a calculator
- View reports ✓✗
 - Results by question
 - Results by problem solving stage

Stage	Non-Calculator					Calc
	Comprehension	Transformation 1	Transformation 2	Processing	Encoding	Processing
Ethan ✓	100%	64%	50%	96%	96%	100%
Mia ✓	93%	86%	79%	54%	89%	100%

Identify where students get stuck

numeracy success

2. Think like a problem solver
(hints, videos, etc...)



3. Practice pathway
(full 45-question and mini practice tests)

Available in
your Online
Teaching
Suite

Stage 2 - Think like a problem solver

Help students build confidence with:

- Full or mini OLNA-style practice question sets
- Follow-up work for specific topics using:
 - » HOTmaths resources
 - » OLNA-style walkthroughs
 - » Hints
 - » Videos

A farmer wants to build a fence around a rectangular paddock 1.2km long by 400 m wide. The fence will have three strands of fencing wire which is sold in reels containing 500 m.

How many reels will the farmer need?

Step 4 of 4

Longer side = 1.2km = 1200 m
Longer plus shorter side = 1200 m + 400 m = 1600
Perimeter = 1600 m × 2 = 3200 m

For 3 strands of wire:
3000 × 3 = 9000 m
200 × 3 = 600
Total length of wire = 9600 m

Reels hold 500 m of wire and only whole reels can be purchased. What is the **smallest** number of reels needed?

300

Incorrect

Correct answer/s **20**
1 reel holds 500 m.
For each 1000 m the farmer needs 2 reels.
So for 9000 m he needs 18 reels.
The he still needs another 600 metres.
For the extra 600 metres he will need 2 more reels and he will have 400 metres left over.

Summary Walkthrough List Video



Stage 3 - Practice pathway

Create practice sets with:

- OLNA-style question bank
- Mini and full 45 question tests
- Optional timer

Question 14: Deepa is selling packets of chocolates at a market. She puts 8 dark chocolates and 2 white chocolates in each packet. She sold a total of 160 chocolates. How many dark chocolates did she sell?

A. ☐ 62
B. ☒ 128
C. ☐ 86
D. ☐ 104

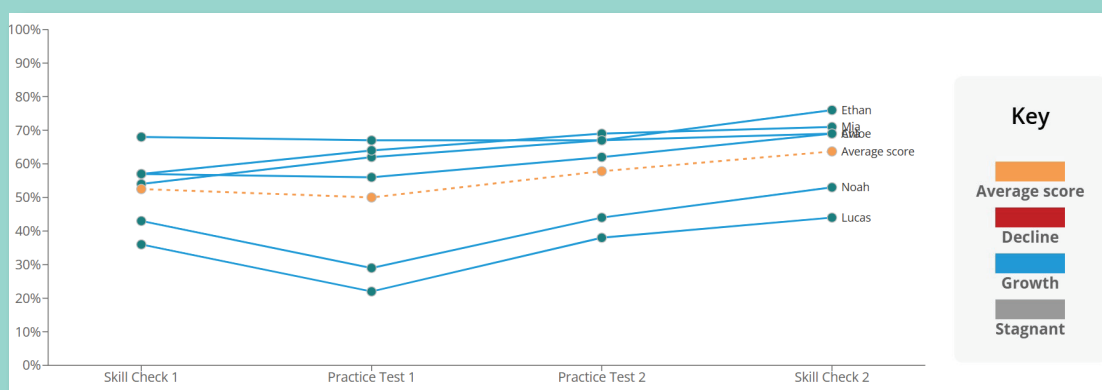
Question 15: Karie is making a large batch of shortbread for a family gathering. The mixture weighs 2.25 kilograms. She decides that the mixture is too dry, so adds an extra 25 grams of butter. What is the weight of this mixture?

A. ☐ 2.250 kg
B. ☐ 2.265 kg
C. ☐ 2.270 kg
D. ☒ 2.275 kg

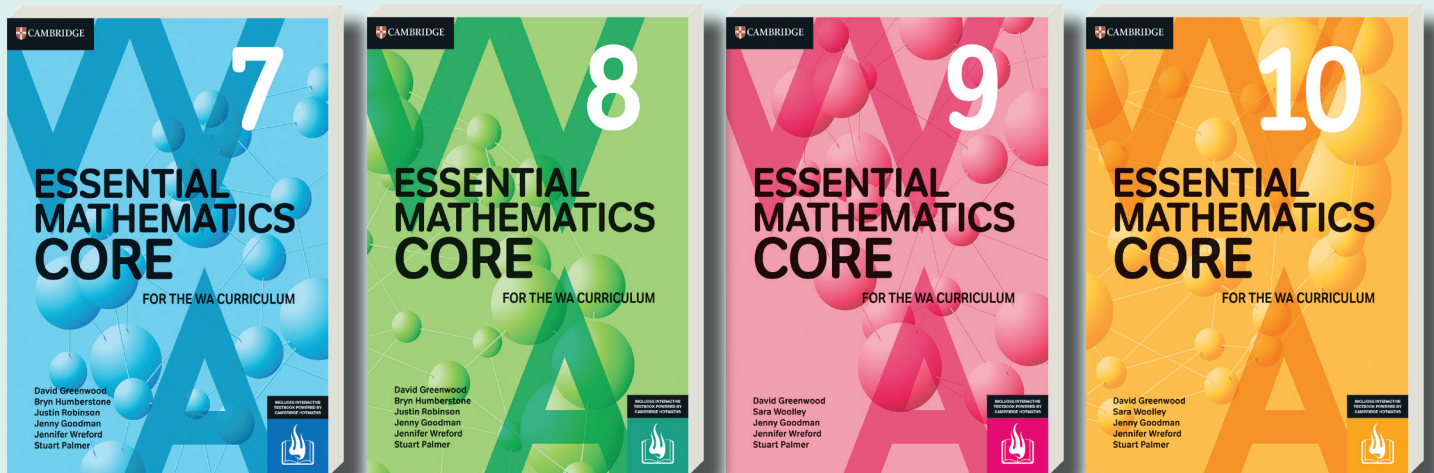
Save And Next

Submit Exit

Track your students' growth over time



Targeted OLNA support included with **Essential Mathematics CORE** for the WA Curriculum



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Your Education Resource Consultant:

Nicole Donnelly

nicole.donnelly@cambridge.org

0419 847 339