# **HITS and Mathletics New Courses**

# **High-Impact Teaching**

Better by design, Mathletics New Courses are grounded in research-based pedagogy, harnessing the proven power of High Impact Teaching Strategies and Explicit Teaching. New Courses are also highly interactive and motivating, rewarding students throughout their learning journey.

#### **Strategy 1: Structured lessons**

#### Well-structured units of work

At the Unit level, New Courses enables students to systematically build their knowledge and skills with a well-structured learning pathway, each set building knowledge and skills in a clear progression. Each unit of work starts with an 'Are you ready?' diagnostic test. These 10 question tests check a student's recall of the essential skills and understandings they need to move forward with this Unit of work.

#### Well-structured 10-question sets

Within each 10-question set, the structure is always the same: a fluency section followed by reasoning questions and then two problem-solving questions.

Students work through these questions in each set:

- **5 fluency questions** encourage students to recall new concepts and skills, and calculate efficiently.
- 3 reasoning questions focus on analysing, proving, evaluating and explaining.
- **2 problem-solving questions**, where students develop the ability to interpret, formulate, model and investigate problem situations.

Each set is accompanied by a Concept Refresh Video, and every question has a hint and a worked solution, which all provides a **structured**, **supportive and predictable learning experience**.

Mathletics	<b>1</b> H	lome		New Course	s		
		Number Units of work 0/1				0-49% 50-79% 80-100%	
		• Fractions				3 ^	
						My Score	and the second sec
		🖉 Are you Ready?				90%	
		Halves, quarters and eighths					
		Unit fractions 1					
		Unit fractions 2					1 H H
sector se		Proper fractions	• •	+. +	+.		
		Fractions and wholes	*	+	+.	100%	and the second
C.		Unit fractions and sharing					
		Unit Practice Test 1					
		Unit Practice Test 2					
		Unit Practice Test 3					

**Mathletics** 



## **Strategy 2: Setting goals**

The initial screen of each set displays a sample question, the Learning Intentions and Success Criteria, and clear and specific learning outcomes that prepare students by providing clear expectations.

Mathletics Number   Practions		Exit
	Hi Marty, today you'll be working on Proper fractions with questions like this: How many fifths are shaded in this model?	Alter a
	Learning intentions To recognise and represent proper fractions in words, symbols, diagrams, collections and number ines. Success criteria Lean recognise and represent proper fractions in different ways.	
	Next	

#### Strategy 3: Explicit teaching

New Courses sets include a Concept Refresh teaching video that explicitly teaches the skills, knowledge and processes students need. These take students through an explanation followed by a demonstration of a worked example. Hints and worked solutions add more help for students when they need it most.





## **Strategy 4: Worked examples**

Every question in New Courses comes with *a Hint* and a *Worked Solution*. All worked solutions use the same clear structure: PLAN, THINK, DO, so that students can use this well organised structure whenever they approach a challenging question or problem.

Mathletics	Number   Fract	tions	C <sub>☉</sub> Exit
Mathletics	Number   Fract	Trions	Contractions of the second sec
р.		THINK         The number of unshaded parts is the numerator.         (*) Concept refresh         (*) Concept refresh         (*) Concept refresh	

# Strategy 5: Collaborative learning

New Courses provide plenty of opportunities for collaboration within a classroom. Small groups can be tasked with solving the Problem Solving questions in a set if they were a challenge. Successful students can articulate the strategies they used, and this sharing of ideas can provide the energy needed for many more to be successful. The New Courses Mystery Units can also be used as part of the collaborative learning experiences in your classroom.





#### **Strategy 6: Multiple exposures**

Within the New Courses sets, students have three chances to answer each question correctly. When an incorrect answer is provided, students can review the correct answer and a worked solution before attempting an alternate version of the same question. This fosters learning, persistence and higher levels of success, which increases overall confidence.

Mathletics Number   Fr	ractions		<li>C<sup>1</sup>₀ Exit</li>
	r and a second s	Proper fractions	
	Q	(IIII) (* Hint	
	6 What fraction of the shape is r	oot shaded?	Summet Problem Solving
			C Recsoning
	Bere's the correct answer		
			0 Fluercy
	Concept refresh     Ø Worked solution	× ○ ○ ★★★ Try another	

#### **Strategy 7: Questioning**

**Beyond fluency:** New Courses covers more than fluency. These sets take students beyond the basics and further into reasoning and problem solving through carefully crafted and sequenced question sets.

Students work through these questions in each set:

- **5 fluency questions** encourage students to recall new concepts and skills, and calculate efficiently.
- **3 reasoning questions** focus on analysing, proving, evaluating and explaining.
- **2 problem-solving questions**, where students develop the ability to interpret, formulate, model and investigate problem situations.

Mathletics Number / Practions	Correct! Subtract related fractions	Same Problem Solving
	Shade $\frac{9}{12}$ of this shape.	O O O O O O O O O O O O O O O O O O O
	Shade $\overline{g}$ of this shape.	0 0 0 0 0 0 0 0 0
	$\frac{9}{12} - \frac{1}{3} = \frac{5}{12}$	1
	Concept refresh 🔅 Worked solution	



# **Strategy 8: Effective feedback**

Mathletics New Courses are highly responsive and engaging, where every student action receives immediate feedback. There are sound effects, animations and a variety of question types to maintain constant interest and engagement.

**Customisation options:** Students can choose to have questions read aloud in their preferred accent or language, making the content more accessible and personalised.

**New Courses instant feedback:** Students immediately see the correct answer when they make a mistake. Students can then access the Worked Solution and the Concept Refresh Video, which provides the essential help that students need to help them move forward. This enables students to learn from their mistakes, correct any misconceptions, and make real progress in their learning journey.

**New Mathletics student console:** Points this week, avatar, certificates and achievement levels provide layers of additional positive feedback, motivational elements and rewards that are highly effective at increasing student engagement.







#### Strategy 9: Metacognitive strategies

Students can visually track their progress, as animated stars twinkle on the mountain with an encouraging sound effect for each correct answer, enhancing their overall sense of achievement and motivation. Each question set concludes with a summary, highlighting the student's successes and areas that need extra attention. Students are then asked to think about how well they understand this topic. All of this contributes to students having an increased understanding of where they stand in their learning and how they can improve.

Mathletics	Number   Fractions		
		Outstanding result, Marty score 10/10 OVERALL RATING 27/30 Stors ()	
		Proper fractions You have an excellent ability to move fluidly between different representations of proper fractions and to use them to solve problems. You scored 100% across Fluency, Reasoning, and Problem Solving. You have achieved all the success criteria!	
		L STRONG C Fluency 10 10 10 10 10 10 10 10 10 10 10 10 10	
		Next	C SHE





## Strategy 10: Differentiated teaching

New Courses offers teachers immediate real-time insights into their class with the NEW Results Report. This provides teachers with actionable insights into students' understanding of each new skill, as well as their level of understanding of fluency, reasoning and problem-solving skills.

For teachers, these courses provide you with the detail you need to teach more effectively. After teaching a topic, assign the matching New Courses set to your class and you can quickly see what your students do and don't understand.

The New Courses Results report shows you where you should focus your teaching. You can instantly see which students are persisting, learning and making progress, and which students need more assistance. This Results report gives you a better understanding of your class on this topic, today, when you need it.

	Mothletics Teacher Console						0	Need Help	Teacher
ŵ	New Courses - Res	ults				20 JAN — 2	0 DEC 2023	Students 10	Export
Home	Mr H Class - Year 3A	V De	Default Group* (10) V This s			school year	ichool year v		
Manage Classes	Number and Algebra   Fractions  Value Algebra   Fractions  Accentatory								
۸.		All		Teacher Ass	igned	Voluntary	Attempts		
Review	8/10 Students completed	Aver	88% Average high score		3/10 Students with a score 2 80%			18% Average improvement	
Results	Average accuracy	85%	66%	40%					Key v
ی ive Maths Settings	Student name 0	Fluency Q 1 2 3 4 5	Reasoning 6 7 8	Problem Solving 9 10	Attempts	Questions Correct	Highest Score	() Improvement	
	Amanda Santamaria		2 3	2	1	7 10	70%	-	~
esource Hub	Andrew Hayley			2 2 3 3 3 3	3	7 10 7 7 6 6	<b>100%</b> 70% 60%	30% 🔺 10% 🔺	^
		82% Average accuracy	50%	13%					
	Anne Nagy		2 3	3	4	6 8	80%	10% 🔺	~
	Bobbi Kristina		2 3	3	3	57	70%	10% 🔺	~
	Daniel Bell								
	Katerina Crossley		2 3	2	1	7 10	100%	-	~
	Marie McHugh	88888	2 3	3	2	7 8	80%	30% 🔺	~
	Sofia Safahana		2 3	3	3	6 8	Mothletics	Teacher Console	
	Zahan Hoffman	88888	2 3	2	1	7 1 <sub>G</sub>	New Co	urses - Results	
	Zoro Matha	3 2 3 3 3			1	Hom	e Mr H Class	s - Year 3A	V Default Group* (10) AUS Yr 03 Australian C

At a Unit level, you can see the results across topics and students. The three Unit Practice Tests are graded tests, with Test 3 set at a challenging level. These 20 question tests do not include answers, and are only marked at the end. This provides students with the same experience as in a real test.

New Courses is available in the *Learn* area of the Student Centre and in the Teacher Console via *Assign and Review*.

