

From Subitising to SATs. Building Mathematically Observant Pupils

Autumn Briefing for Maths Subject Leaders

Welcome and Opening prayer



Agenda

- Overview of where each KCSP primary school is within Kent and Medway Maths Hub Programme – including key application dates for next year

Year 6 Data and Questions Analysis

- A review of the Year 6 – 2026 paper content – what can we learn for next year

EYFS

- A detailed look at the EYFS Statutory Framework for Maths and associated activities for Maths leaders

Clarity of Language



Teaching for Mastery



NCETM

NATIONAL CENTRE FOR EXCELLENCE
IN THE TEACHING OF MATHEMATICS



Integral to RISE delivery

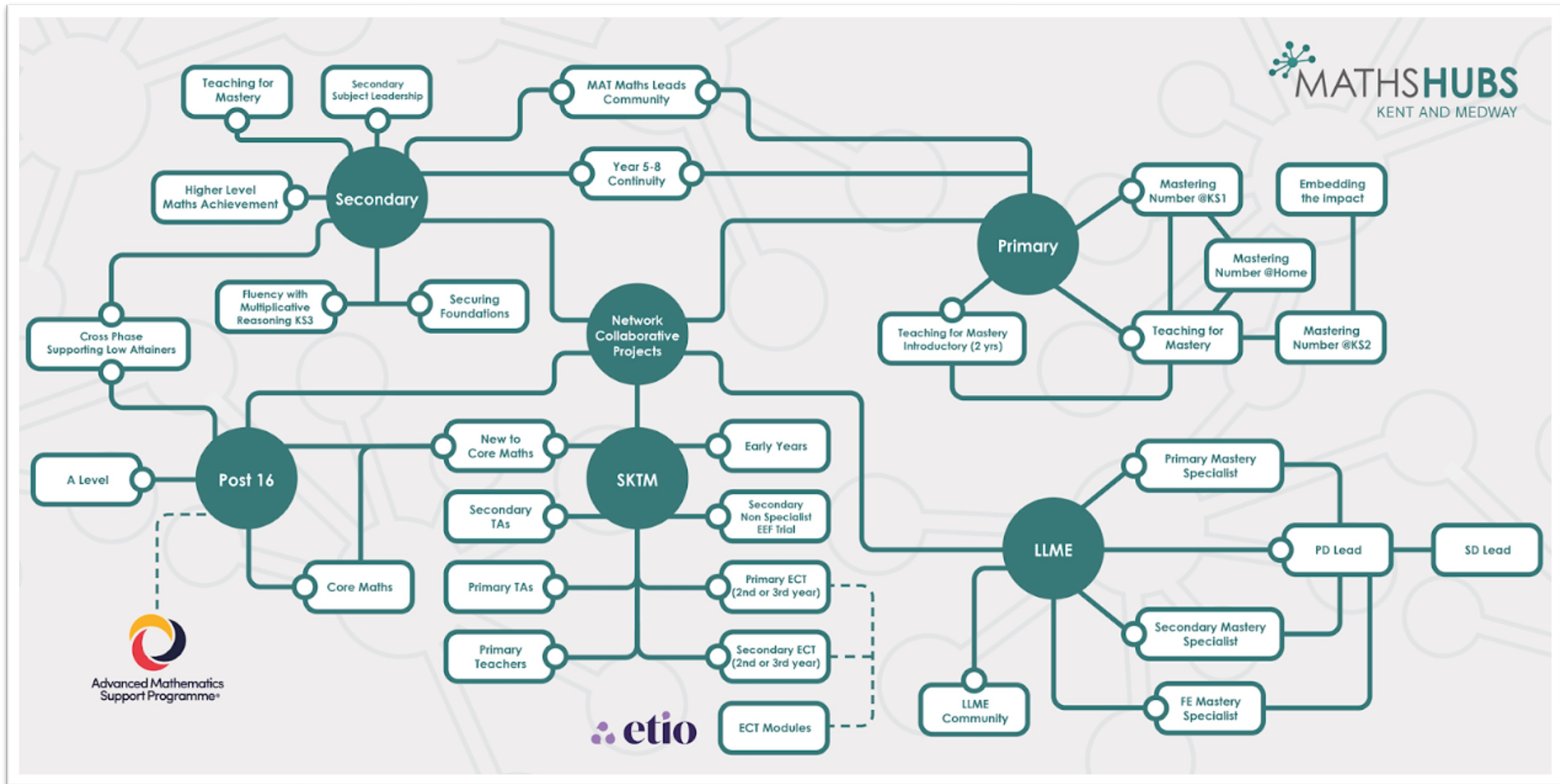
MATHSHUBS

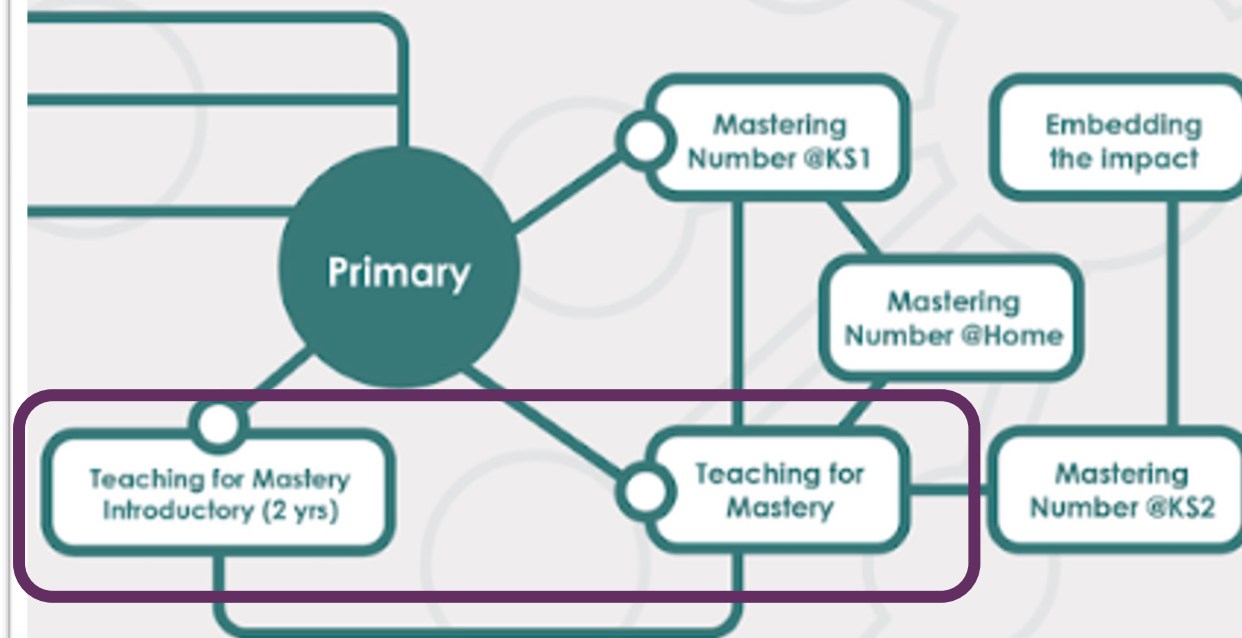
Mastering Number Programme

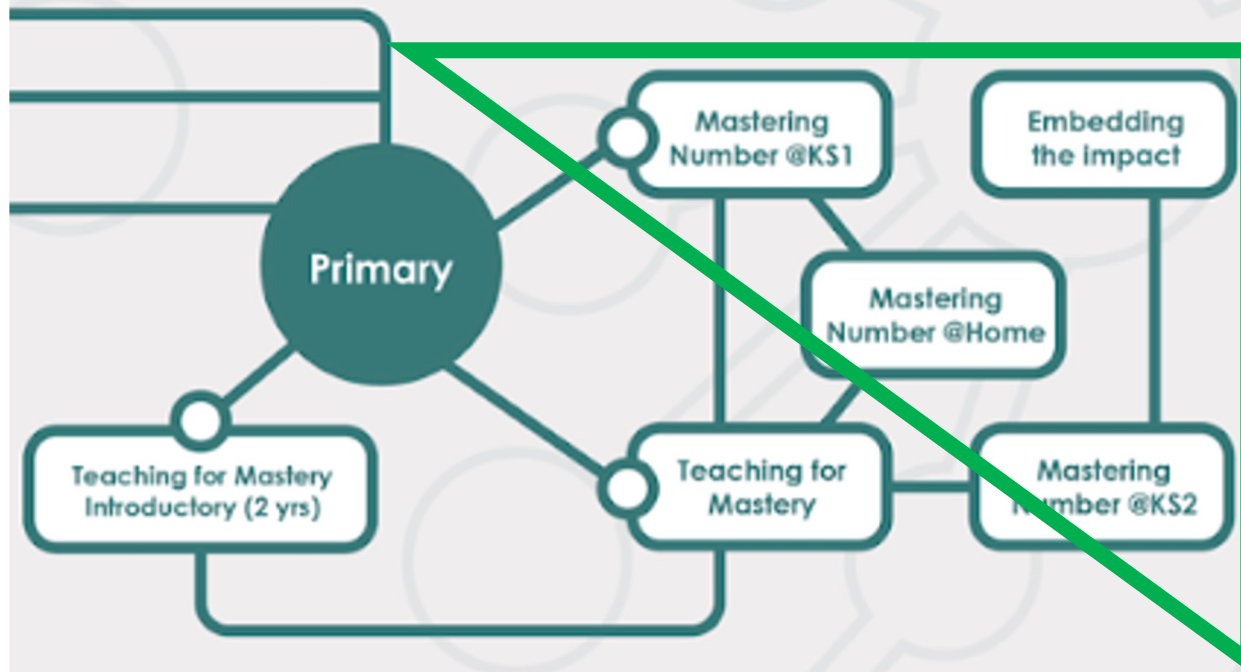
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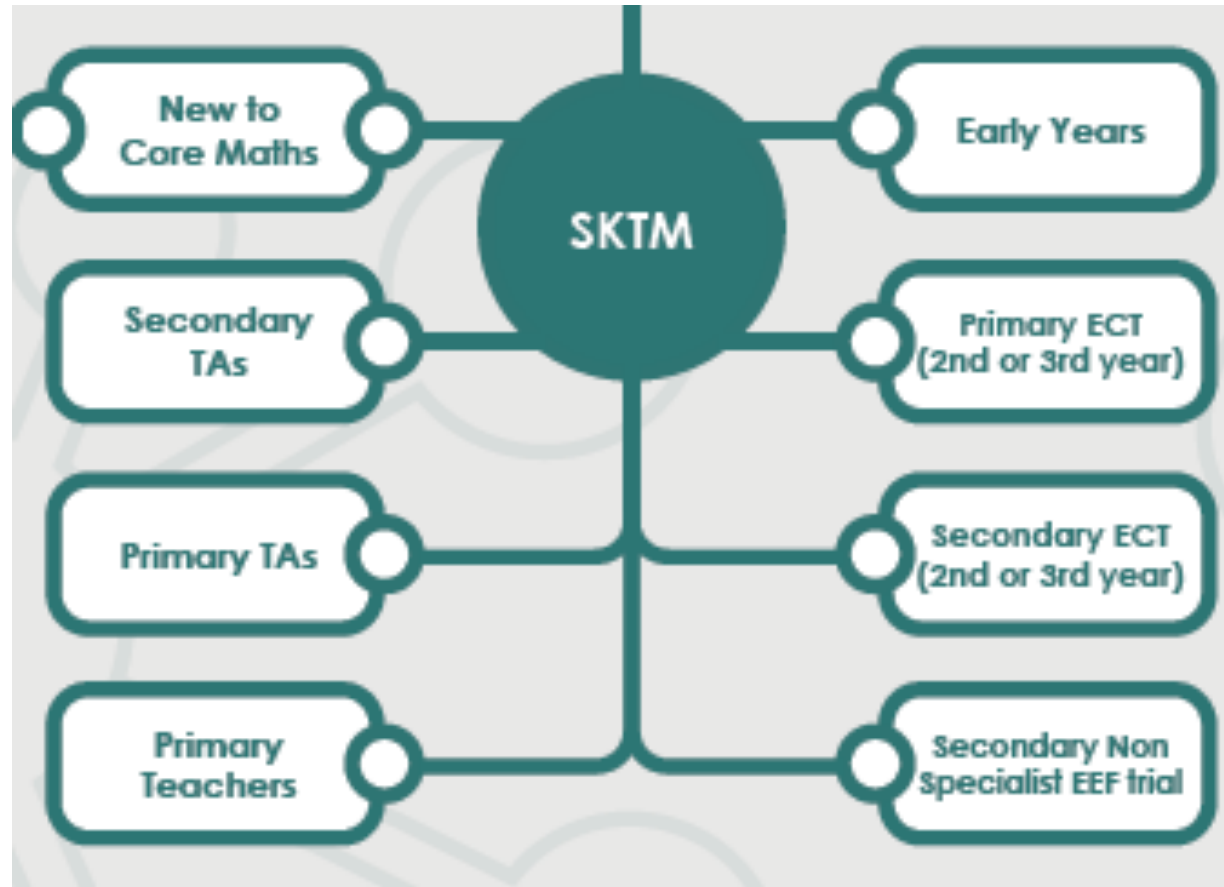




KCSP and Teaching For Mastery

- Every school is in a Teaching for Mastery Workgroup
- Schools are in 2nd Year of Introductory
- KCSP Continuity has 2 work groups. Jack Adams and Jason Horne
- Will tell Chris who is Eligible for MN@ KS1, Embedding the Impact or KS2.
- KCSP has most Mastery specialists or Mastery Specialists in training.

KMMH wider workgroup offer



Basecamp

Client

JH&HL Primary TfM



active recently, latest a second ago - [View activity](#)

26/27 Discussions



Amy Roberts SE5 Kent and Medway
Sep 25

Welcome!

Welcome to the Primary Teaching for Mastery Basecamp, our community where we can share learning and also ask questions of each other.

Whether new, or familiar with Basecamp, you may wish to look at the Basecamp Help folder, to ensure you can manage your notifications. Please note, if you choose to have email notifications set up, if you reply from your inbox you reply to all who can see the post :)

We look forward to working with you, as the Work Group Leads.

Amy, on behalf of Jason and Hannah

Schedule

September 2026

SUN	MON	TUE	WED	THU	FRI	SAT
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3

Oct
6

Observing Learning and Core Work ...

Tue, Oct 6, 10:00am - 10:30am BST

Docs & Files



25/26

3 items



ncetm_five_big_ideas_updated_feb_...

Janine 9 Allen • Oct 4, 2024 • 481 KB



Basecamp Help

9 items

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SCHOOLS
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Year 6 Data and Questions Analysis

The SATs Results 2026: Headlines

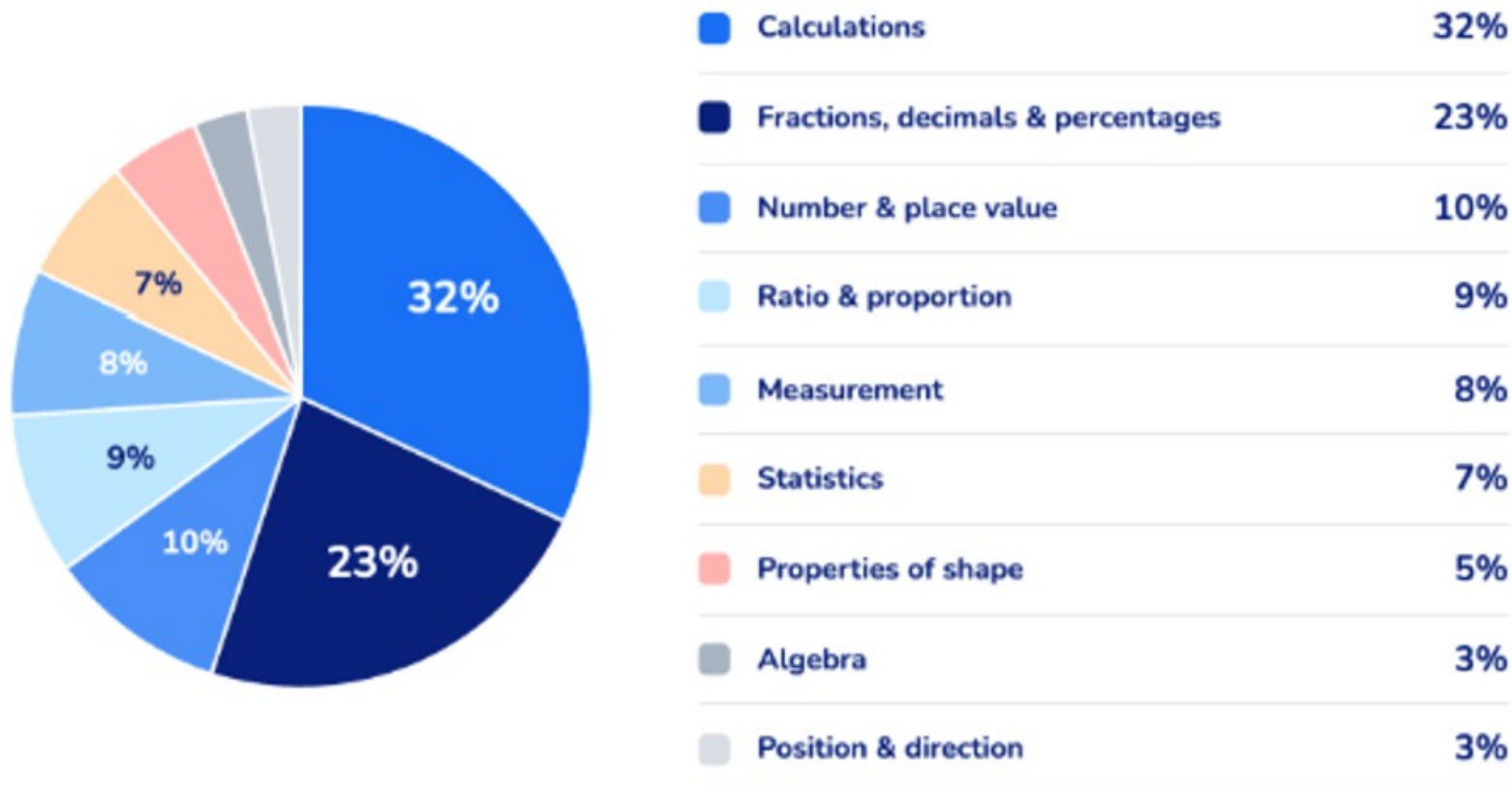
	Percentage of pupils reaching EXS nationally						
	2018	2019	2022	2023	2024	2025	2026
Reading, writing & maths	64%	65%	59%	60%	61%	62%	63%
Reading	75%	73%	74%	73%	74%	75%	75%
Writing	78%	78%	69%	71%	72%	72%	73%
Maths	76%	79%	71%	73%	73%	74%	75%
Grammar, punctuation & spelling	78%	78%	72%	72%	72%	73%	74%

<https://thirdspacelearning.com/blog/sats-results-2026/>

Have teachers been shown how to plan gap-plugging interventions using the Ready-to-Progress materials?

KS2 Maths SATS papers analysis						
Percentage of questions from each year group curriculum across Arithmetic and Reasoning						
Year	2019	2022	2023	2024	2025	2026
3	10%	8%	12%	11%	11%	10%
4	21%	23%	20%	21%	20%	22%
5	21%	32%	32%	19%	27%	25%
6	47%	37%	36%	48%	42%	43%

Percentage of questions by content domain in the 2026 papers



Is teacher subject knowledge of fractions, decimals and percentages sufficiently strong?

Use the [NCETM Subject Knowledge Audits](#) to gauge teachers' confidence in:

- ✓ Number
- ✓ Additive reasoning
- ✓ Multiplicative reasoning
- ✓ Fractions

Paper 1 – Arithmetic (36 questions, 40 marks)

Year group	Number of questions	Example content
Y3	5	Simple $\times \div + -$ facts (e.g. 3×23 , $72 \div 4$)
Y4	8	Column addition/subtraction, short division, missing-value calculations
Y5	8	Decimal addition/subtraction, fraction of an amount, order of operations
Y6	15	Long multiplication/division, percentages, fraction/decimal calculation, mixed numbers

Paper 2 – Reasoning (23 questions, 35 marks)

Year group	Number of question-parts	Notable question types
Y4	5	Money, missing perimeter, word problems
Y5	8	Shape matching, missing-value tables, true/false statements
Y6	12	Ratio, angle calculation, unit conversion, pie chart/data interpretation

Paper 3 – Reasoning (21 questions, 35 marks)

Year group	Number of question-parts	Notable question types
Y3	3	Time intervals, missing-digit subtraction, estimation
Y4	6	Coordinates, explain/justify, tick statements, digit reasoning
Y5	7	Negative numbers, data interpretation, number properties
Y6	11	Ratio, algebra (find values), angles, compound-shape area

Exemplar questions... solving them more than one way

Paper 1, Q11 (Year 4, Fractions — 4F4, 1 mark)

11 | $\frac{4}{5} + \frac{3}{5} + \frac{2}{5} =$

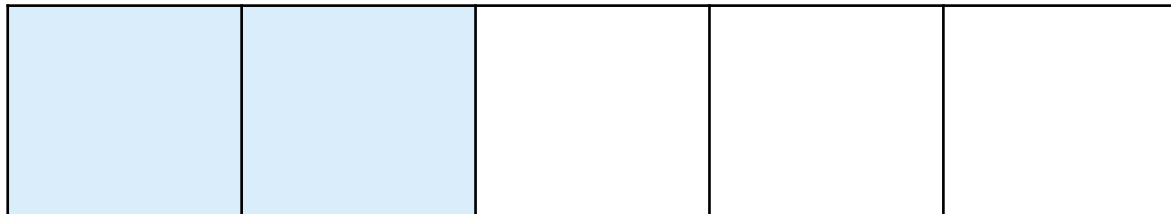
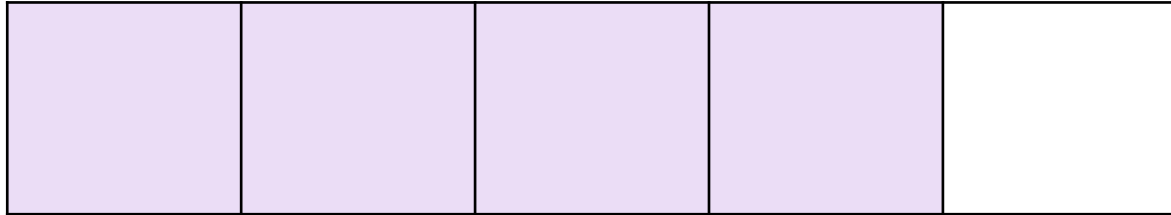
$$\frac{4}{5} + \frac{3}{5} = \frac{7}{5} + \frac{2}{5} = \frac{9}{5} = 1\frac{4}{5}$$

Exemplar questions... solving them more than one way

$$\frac{2}{5} + \frac{3}{5} = 1 + \frac{4}{5} = 1\frac{4}{5}$$

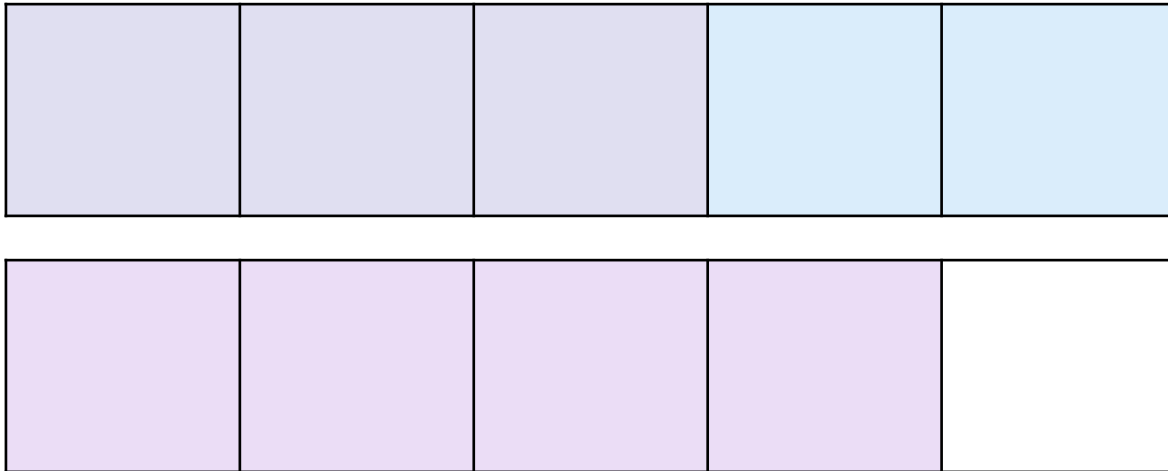
11

$$\frac{4}{5} + \frac{3}{5} + \frac{2}{5} =$$



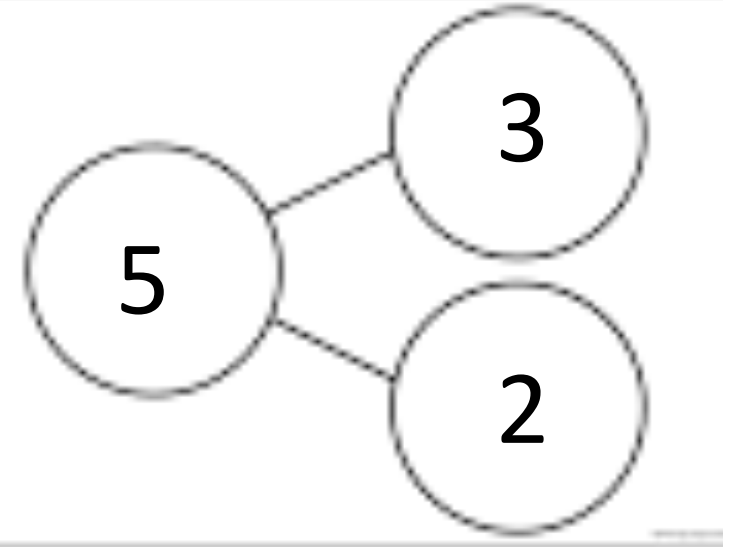
Exemplar questions... solving them more than one way

$$\frac{2}{5} + \frac{3}{5} = 1 + \frac{4}{5} = 1\frac{4}{5}$$



11

$$\frac{4}{5} + \frac{3}{5} + \frac{2}{5} =$$



Exemplar questions... solving them more than one way

- B. Paper 1, Q28 and Q34 (Year 6, Ratio & Proportion — 6R2, 1 mark each)

$$28 \quad | \quad 30\% \text{ of } 2,320 =$$

$$\begin{aligned} 1\% \text{ of } 2320 & \text{ is } 23.2 \\ 23.2 \times 30 & = 396 \end{aligned}$$

$$34 \quad | \quad 65\% \text{ of } 680 =$$

$$\begin{aligned} 1\% \text{ of } 680 & \text{ is } 6.8 \\ 6.8 \times 65 & = 442 \end{aligned}$$

Exemplar questions... solving them more than one way

Paper 1, Q28 and Q34 (Year 6, Ratio & Proportion — 6R2, 1 mark each)

28

30% of 2,320 =

2320									
232	232	232	232	232	232	232	232	232	232
396									

34

65% of 680 =

680									
68	68	68	68	68	68	68	68	68	68
396					68	34			
442									

Fractions, Decimals, & Percentages (FDP)

Fraction	Decimal	Percentage	Structural Benchmark & Relationship
$\frac{1}{2}$	0.5	50%	Half of the whole quantity
$\frac{1}{4}$	0.25	25%	Half of one half ($0.5 \div 2$)
$\frac{3}{4}$	0.75	75%	Three quarters ($0.5 + 0.25$)
$\frac{1}{5}$	0.2	20%	One tenth doubled (0.1×2)
$\frac{1}{10}$	0.1	10%	Divided by ten ($1 \div 10$)

How can you make 65%?

- 1% x 65
- 10% x 6 + 5%
- 50%+ 10%+ 5%
- 75%-10%
- 100%- 35%

Exemplar questions... solving them more than one way

Paper 2, Q4 (Year 5, Statistics/Calculation — 5S1/4C4, 1 mark)

4

This table shows the numbers of children in each year in a school.

One number is missing.

	Year 3	Year 4	Year 5	Year 6
Children	119		118	117

There are **468** children in the school altogether.

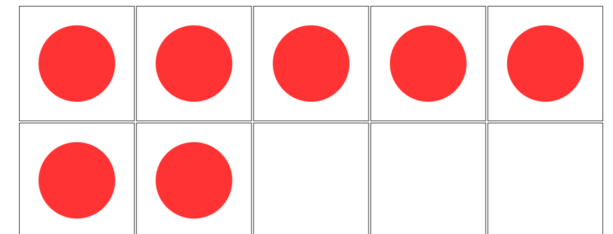
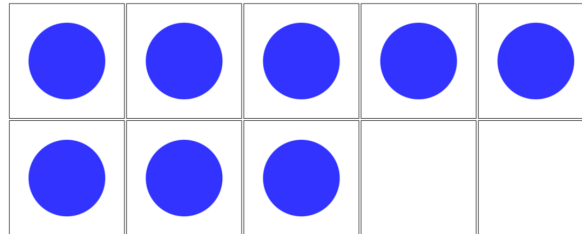
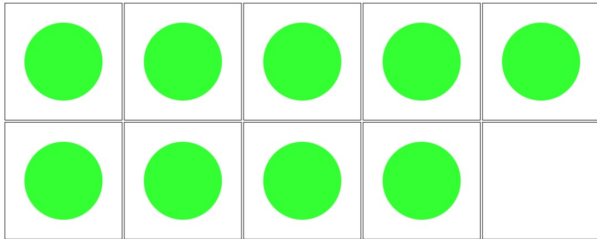
How many children are in Year 4?

$$119+118+117=354$$

$$468-354=114$$

Exemplar questions... solving them more than one way

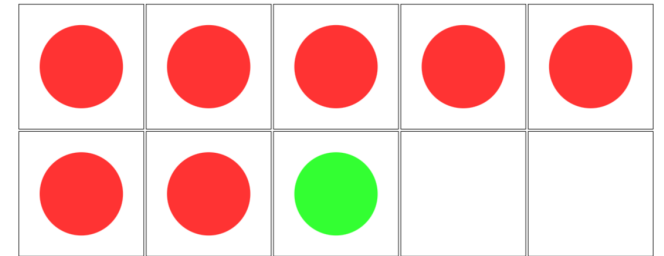
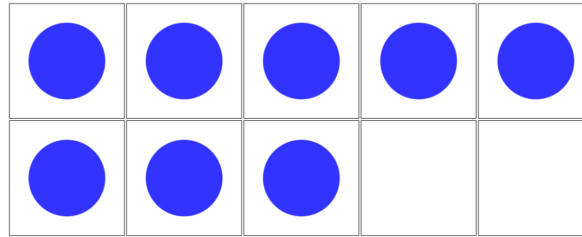
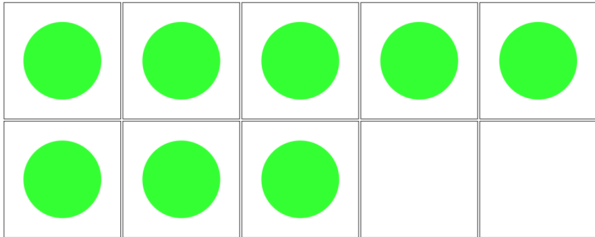
$$119+118+117$$



Exemplar questions... solving them more than one way

$$119 + 118 + 117$$

$$118 \times 3 = 468$$



Exemplar questions... solving them more than one way

- Paper 2, Q21 (Year 6, Ratio & Fractions — 6R4/6F9c, 2 marks)

21

Kirsty mixes blue paint and yellow paint.

$\frac{2}{5}$ of her mixture is blue paint.

She uses **3.5** litres of blue paint.

8.75				
3.5		5.25		
1.75	1.75	1.75	1.75	17.5

How many litres of **yellow** paint does Kirsty use?

$\frac{2}{5}$ is 3.5 | so $\frac{1}{5}$ is 1.75 |

$\frac{5}{5}$ is 8.75 so $8.75 - 3.5 = 5.25$

Take away the numbers

21

Kirsty mixes blue paint and yellow paint.

$\frac{2}{5}$ of her mixture is blue paint.

How could you find the amount of yellow paint that is used?

$$\frac{1}{5} \times 5 - \frac{2}{5} = \frac{3}{5}$$

$$\frac{1}{5} \times 3 = \frac{3}{5}$$

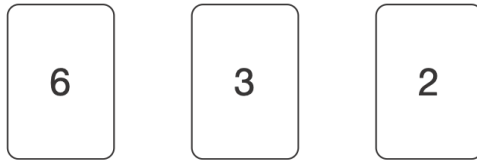
$$\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$$

Exemplar questions... solving them more than one way

- **G. Paper 3, Q16 (Year 5, Number properties — 5C5a/5C5c, 2 marks)**

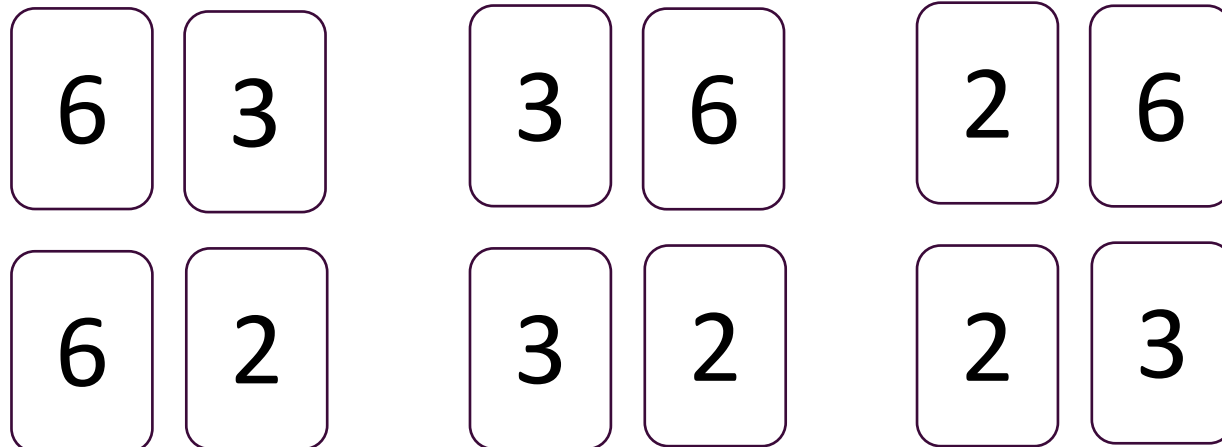
16

Here are some digit cards.



You can use each card **more than once**.

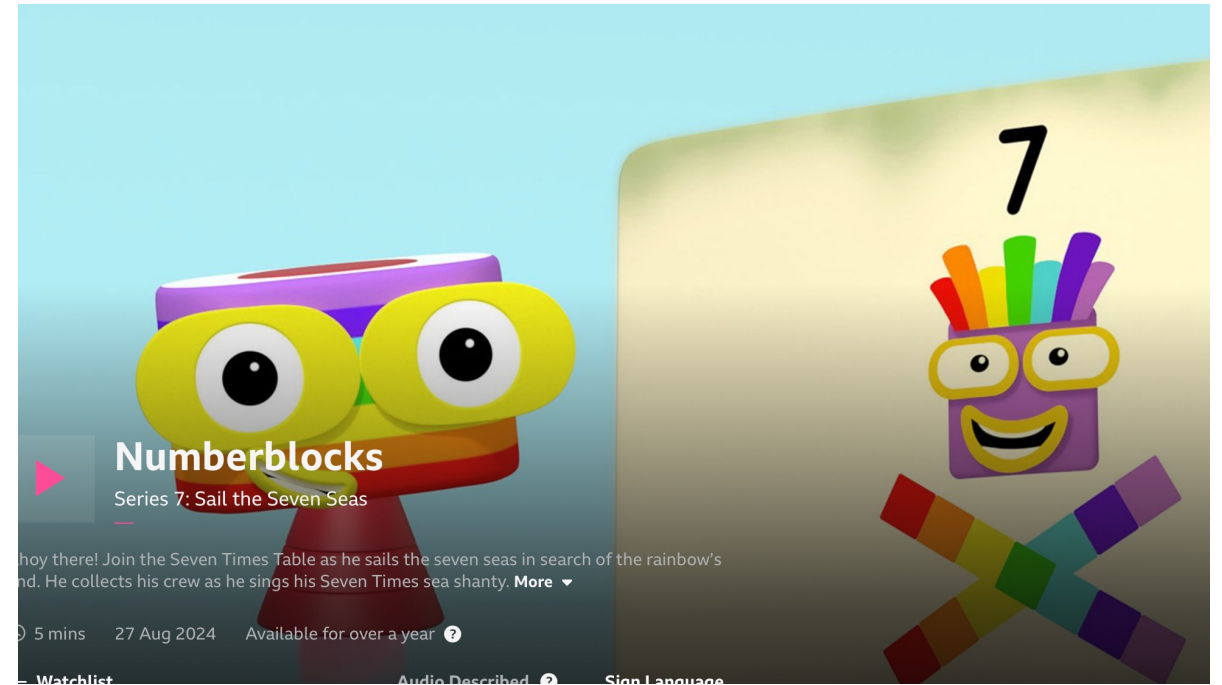
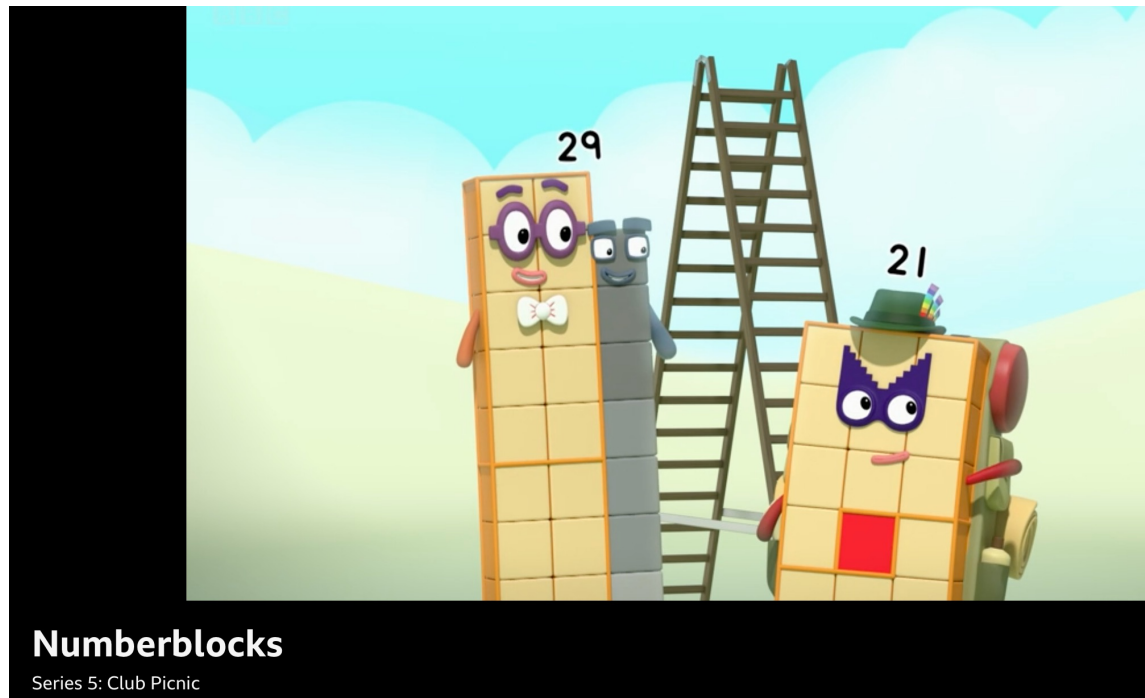
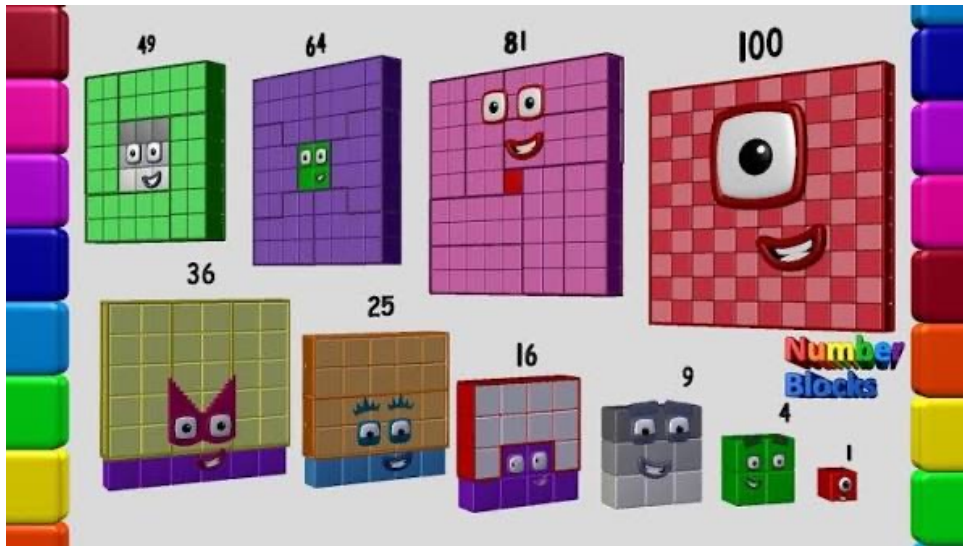
Use the cards to make:



a **prime** number

a **square** number

a **multiple of 7**



Exemplar questions... solving them more than one way

- I. Paper 3, Q19 (Year 6, Algebra — 6A5, 1 mark per part)

$A = 1$ so altogether 3. B is $35 - 3 = 32/2 = 16$

$A = 2$ so altogether 6. B is $35 - 6 = 29/2 = 14.5$

etc

19

Here are five cards.

A and B stand for two **different** whole numbers.



The sum of all of the cards is 35

Give **one pair** of possible values for A and B .

$A =$ $B =$

1 mark

Now write a **different pair** of values for A and B .

$A =$ $B =$

1 mark

Same Generalisation- Different Context

19

Here are five cards.

A and B stand for two **different** whole numbers.



The sum of all of the cards is 35

Give **one** pair of possible values for A and B.

A = B =

Now write a **different** pair of values for A and B.

A = B =

Total is odd

B will always create an even number

A has to be an odd number

Odd + Odd = Even

Even + Even = Even

Even + Odd = Odd

Odd + Odd + Odd = Odd

Even + Odd = Odd

$$5+5+5= 15$$

$$10+10= 20$$

$$15+20= 35$$

$$3+3+3= 9$$

$$13 + 13 = 26$$

$$9 + 26 = 35$$

Thoughts For Leaders and Year 6 Teachers

- **Which of these "observant" strategies are explicitly taught in your school?** Are they named, modelled, and practised? Or are these left for the most confident pupils to discover for themselves?
- **Where does noticing get squeezed out?** Under time pressure, do staff default to teaching "the" method for a question type, rather than showing 2–3 routes and asking pupils to choose?

Turning Analysis Into Action

Finding from 2026 paper analysis	Curriculum/teaching implication	Action
Pupils default to formal algorithms even when a shortcut is faster	"Noticing" isn't explicitly taught as a strategy	Build "more than one way" discussion into sessions from Y3
Ratio scale-factor reasoning appears repeatedly (Y6)	Early ratio/scaling exposure may be thin in Y4/5	Audit Y4/5 multiplicative reasoning units for scale-factor language

EYFS Statutory Framework for Maths and Associated Activities

The two Mathematics ELGs

Number Children at the expected level:

- Have a deep understanding of number to 10, including the composition of each number
- Subitise (recognise quantities without counting) up to 5
- Automatically recall number bonds to 5 (including subtraction facts) and some to 10, including doubles

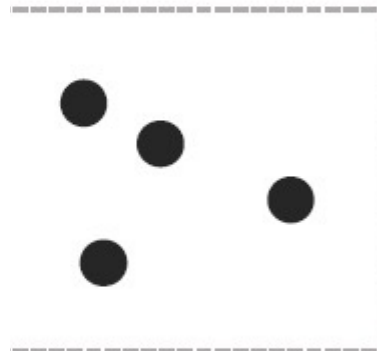
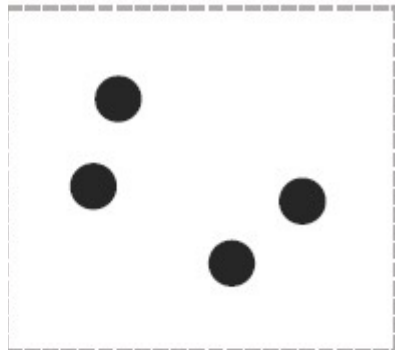
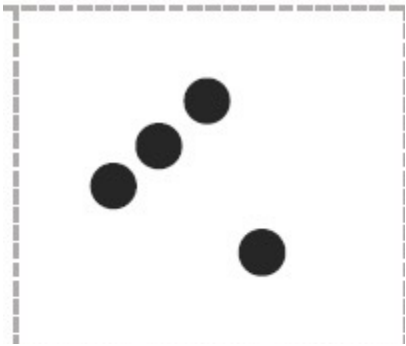
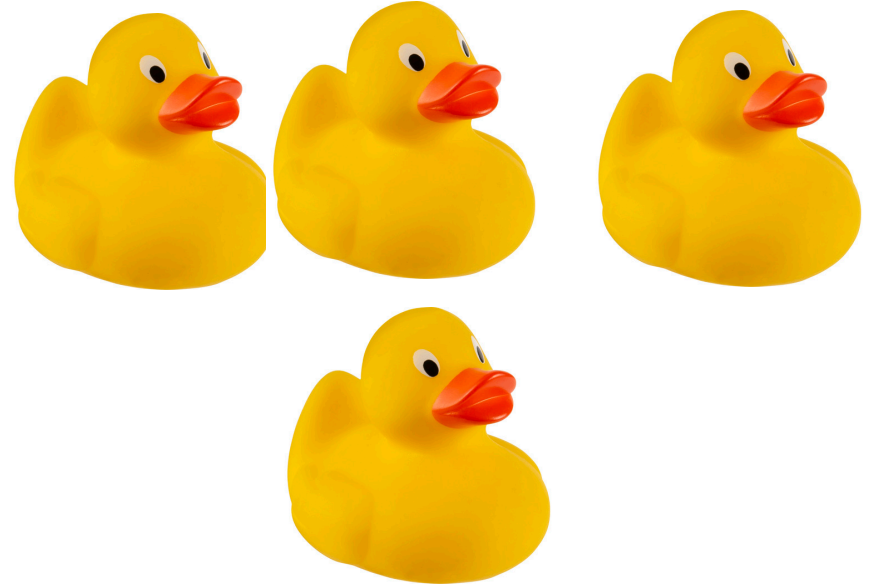
The two Mathematics ELGs

Numerical Patterns Children at the expected level:

- Verbally count beyond 20, recognising the pattern of the counting system
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than, or the same as the other
- Explore and represent patterns within numbers up to 10, including evens/odds, double facts and how quantities can be distributed equally

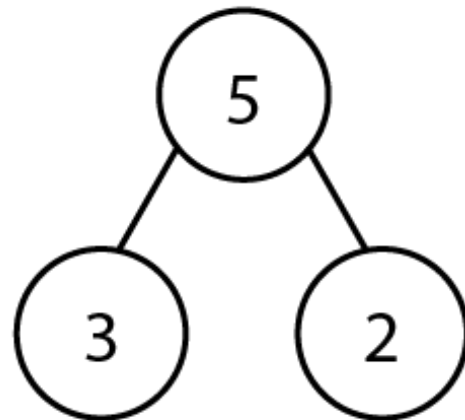
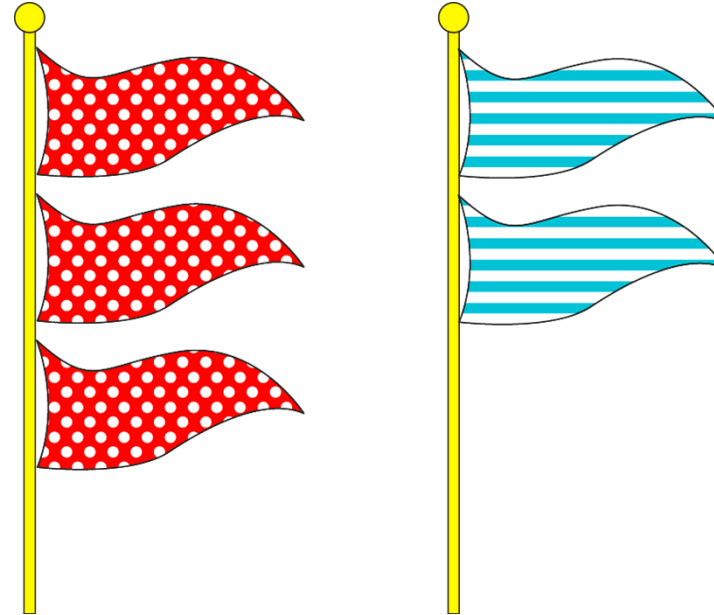
Subitise (recognise quantities without counting) up to 5 — *Number ELG*

What we'd want to see/hear



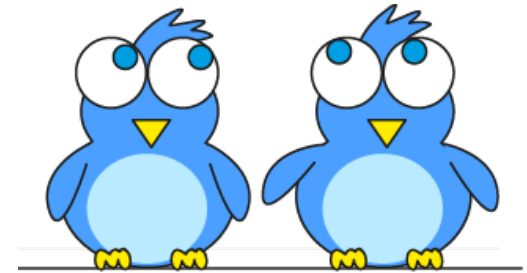
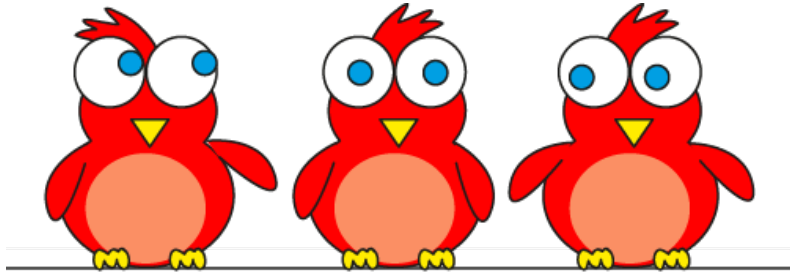
Have a deep understanding of number to 10, including the composition of each number — *Number ELG*

- *What we'd want to see/hear:*



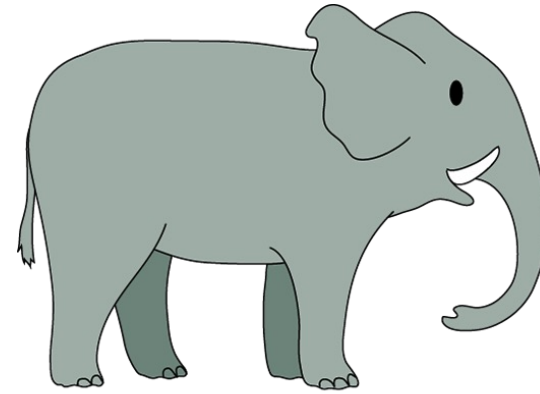
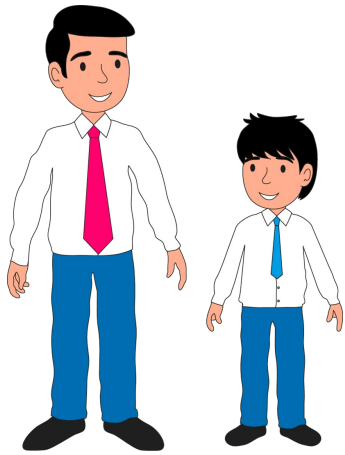
Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than, or the same as the other — *Numerical Patterns ELG*

- *What we'd want to see/hear:*



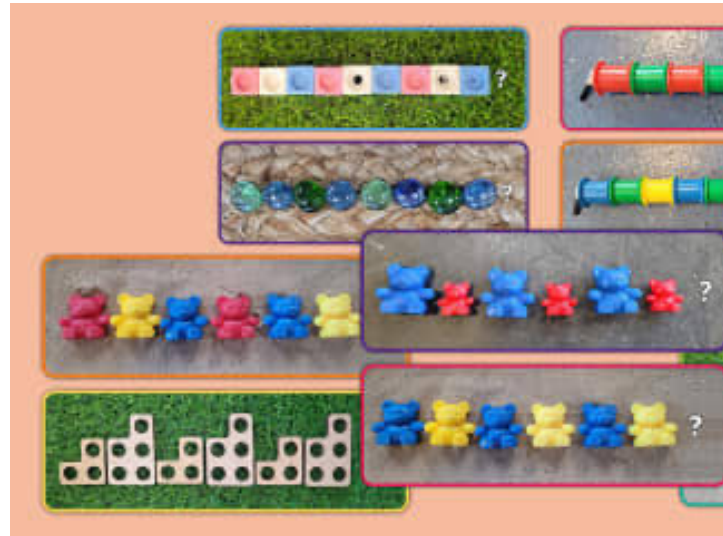
Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than, or the same as the other — *Numerical Patterns ELG*

- *What we'd want to see/hear:*



Explore and represent patterns within numbers up to 10, including evens and odds, double facts, and how quantities can be distributed equally — *Numerical Patterns ELG*

What we'd want to see/hear:



The noticing timeline: Reception to Year 6

	What children become mathematically observant of	What it sounds like	Where it leads
Reception	How many, without counting (subitising to 5); that a number is made of parts; which group has more, fewer or the same; simple patterns, doubles, and whether a share is fair	"I just know it's 4." "5 is 3 and 2." "That's not fair, he's got one more."	The raw material for every later strand: quantity, composition, comparison, pattern
Year 1	Numbers as parts and wholes within 20; number bonds and the fact families that come from them. Halves and quarters as fair shares of a whole	"If $7 + 3$ is 10, then $10 - 3$ is 7." "Half of 8 is 4 because two 4s make 8."	Number bonds become known facts; part-whole thinking becomes the basis for addition and subtraction

The noticing timeline: Reception to Year 6

	What children become mathematically observant of	What it sounds like	Where it leads
Year 2	Odd and even numbers, that multiplication can be done in either order, that operations are the inverse of each other, patterns in the 2, 5 and 10 times tables	"It's even, so it splits into two equal groups." " 3×5 is the same as 5×3 ."	Parity and commutativity — the first "noticing" tools children can use to check and shortcut their own work
Year 3	Relationships between tables ($\times 4$ as double $\times 2$, $\times 8$ as double $\times 4$), unit fractions as equal shares of an amount, working backwards from a result	" $\times 8$ is just double, double, double." "I did the inverse to check."	Inverse operations and multiplicative relationships

The noticing timeline: Reception to Year 6

	What children become mathematically observant of	What it sounds like	Where it leads
Year 4	Full tables to 12×12 as connected facts, not 12 separate lists; factor pairs; how fractions relate to each other and to division	"8 and 6 make 48, so $48 \div 6$ is 8." "These fractions have the same denominator, so I can just combine the tops."	Fluent recall that frees attention to <i>notice</i>
Year 5	Properties of number: multiples, factors, prime, square and cube numbers; equivalence across fractions, decimals and percentages	"63 is a multiple of 7 because 9×7 is 63." "36 is 6 squared."	Recognising rather than searching

The noticing timeline: Reception to Year 6

	What children become mathematically observant of	What it sounds like	Where it leads
Year 6	Structure inside problem, scale factors in ratio, unit fractions as building blocks, parity and constraints in algebra, decomposing compound shapes	"Everything scales by 6." "Find one-fifth first."	The Year 6 papers directly reward this noticing

Subject Leaders and Teachers

- Which stage in this timeline is weakest in your school, where does the "noticing" stop being taught explicitly and start being assumed?
- Do Year 1 and Year 2 staff see what Reception staff are building? Do Year 5 and 6 staff know where their pupils' noticing habits started?

Practical Next Steps For Maths Leaders

- **Learning walks/drop-ins in EYFS** specifically looking for the "what we'd want to see/hear" behaviours from across continuous provision, not just in maths-labelled activities.
- **Moderate GLD judgements** with EYFS staff specifically for the two maths ELGs, using real examples of what we would expect to hear from children.

Questions?

Feedback

Please complete now



[KCSP Subject Network Feedback 2026-7 Initial feedback](#)