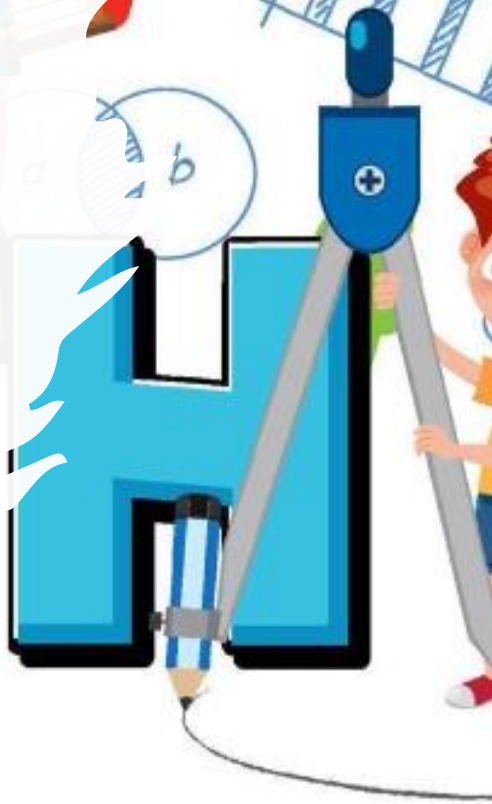
Maths at The RiverBank Primary School



Aims of the Session

- How we teach maths at RBS(CPA Model)
- How we challenge the children to deepen their learning. (Teaching for mastery)
- What it looks like in the classroom
- How you can help at home.

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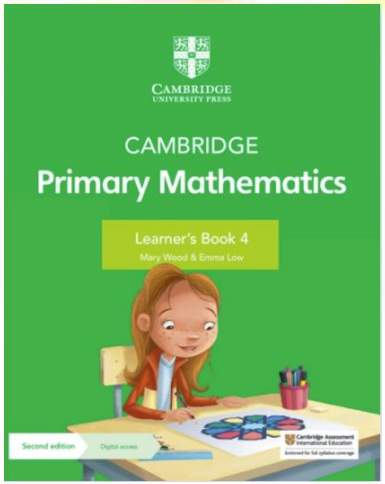
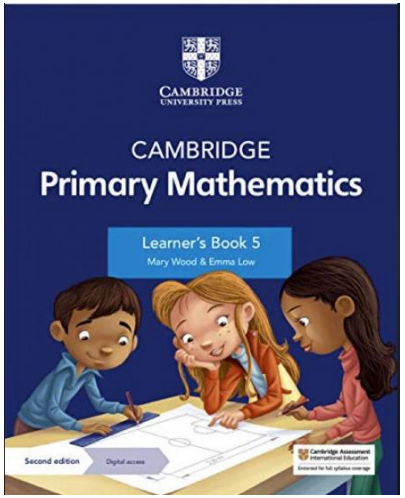
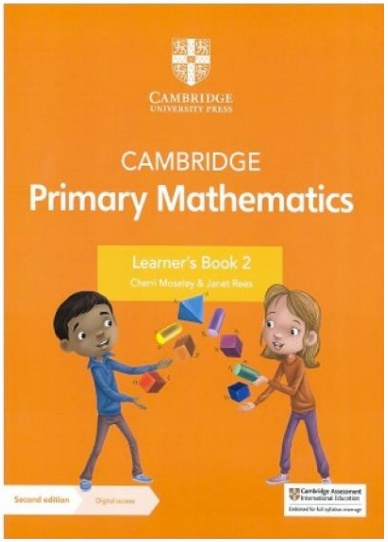
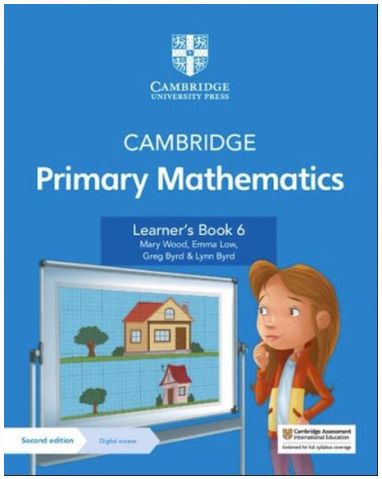
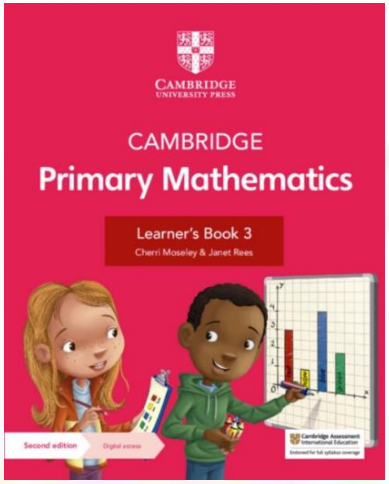
Our Curriculum











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Aims of the Curriculum

- **Fluent recall** of **mental maths facts** e.g. multiplication tables, number bonds etc.

- To **reason** mathematically – children need to be able to **explain** the mathematical concepts with number sense; they must explain **how** they got the answer and **why** they are correct.

- **Develop -** use pictorial representation to help visualize problems.

- **Problem solving** – applying their skills to real-life contexts (life skills).

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Maths at RBS

MENTAL MATHS

PROBLEM SOLVING

QUANTITIVE REASONING

NON -VERBAL REASONING

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How we teach Maths

1. For children to have a true understanding of mathematical concepts, there are three phases they need to master.

- Reinforcement is achieved by going back and forth between these phases.

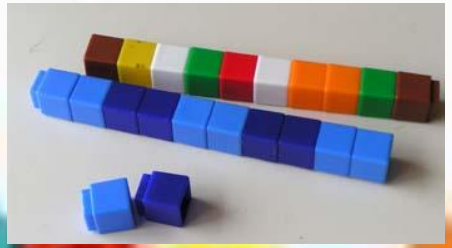
2. Teaching for mastery.

- At RBS we emphasize on conceptual understanding rather than procedures.

Concrete-doing stage

- The Concrete stage encourages the use of manipulatives and concrete resources to physically show the process behind what is being taught.

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
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



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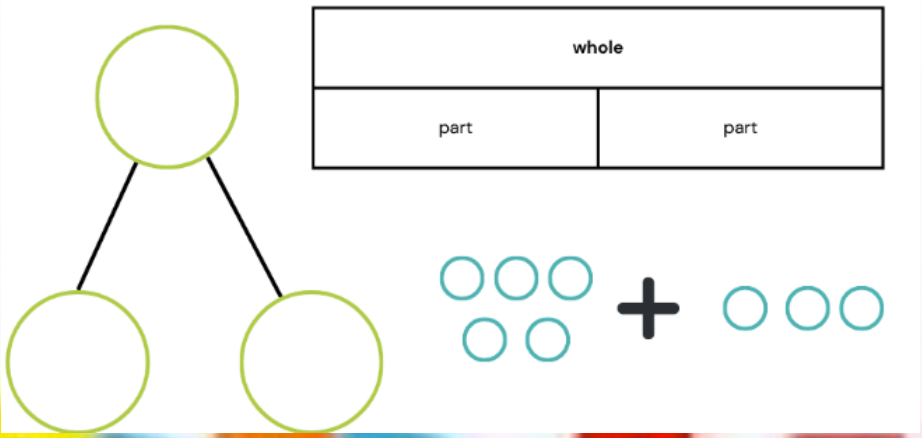
Pictorial- seeing stage

- The physical resources are generally replaced with a pictorial representation.

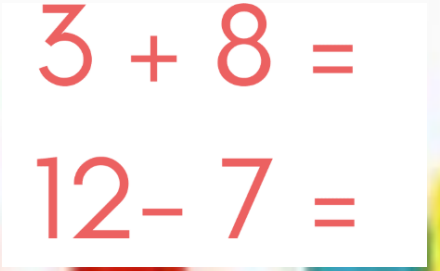
- It bridges the gap between getting to grips with a concept (quite literally) and knowing how to combat more abstract ideas.



Abstract- symbolic stage

- The abstract stage is when children face questions using numbers and symbols, or key vocabulary alone.

- At this stage, pupils are expected to have a depth of knowledge which can now be applied without the need for physical or visual support strategies.



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Teaching for Mastery

What does it mean to master something?

- I know how to do it
- It becomes automatic and I don't need to think about it
- I'm really good at it.
- I can show someone else how to do it

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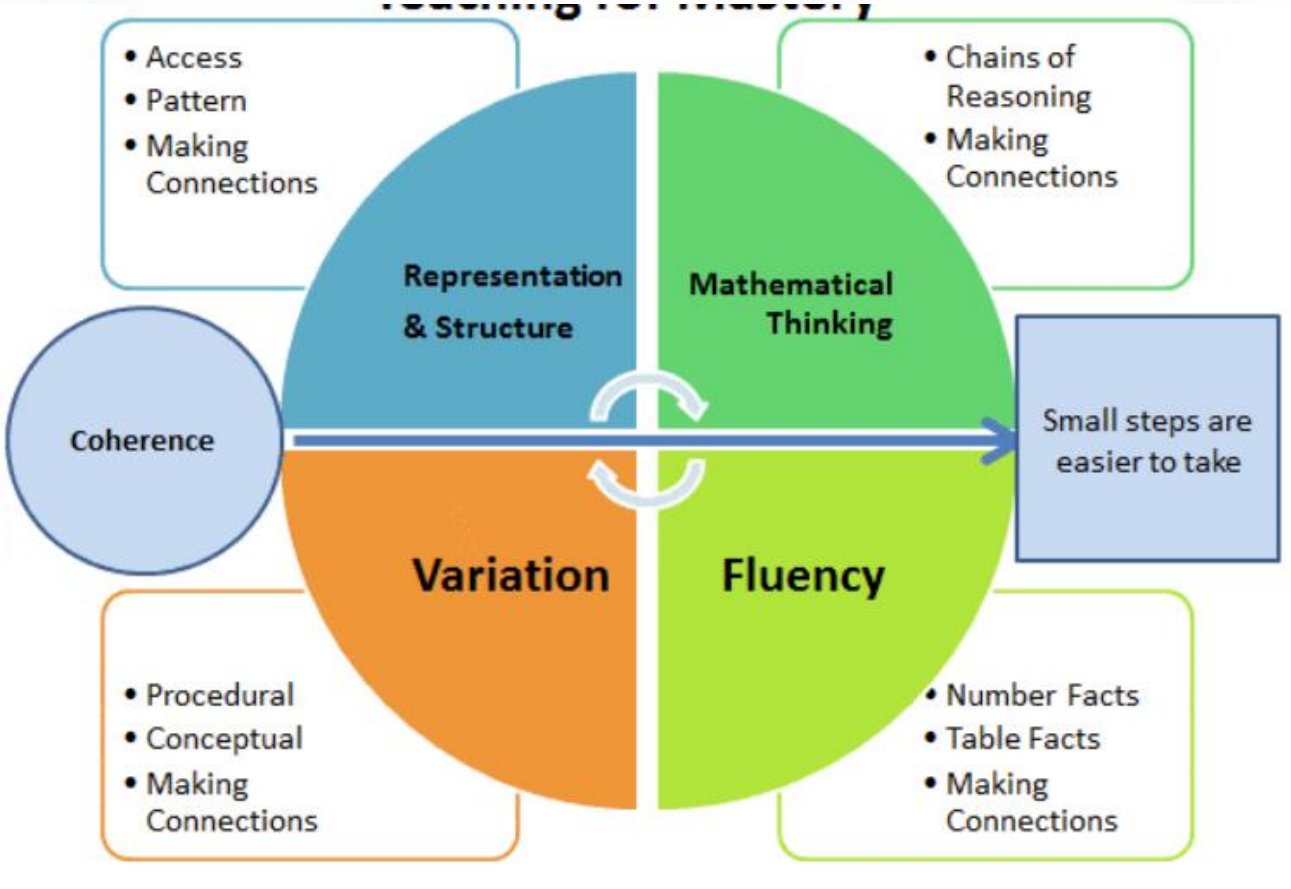
Teaching for Mastery



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Maths Mastery- variations

Multiple representations of the same number.

Number	Number word
47	Forty seven
Draw it	**Expanded form**
Tens | Ones |||| |	40 + 7 = 47 7 + 40 = 47

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Maths Mastery- fluency/structure

Using known number facts: if we know this, what else do we know?

Factor		Factor		Product	
3	X	5	=	15	
30	X	5	=	150	Increased by 10, add 0 to answer
300	X	5	=	1,500	Increased by 100, add 00 to answer
30	X	50	=	1,500	Increased by 10 and 10, add 00 to answer
300	X	50	=	15,000	Increased by 100 and 10, add 000 to answer
300	X	500	=	150,000	Increased by 100 and 100, add 0000 to answer

$3 + 6 = 9$

$30 + 60 = 90$

$300 + 600 = 900$

$3,000 + 6,000 = 9,000$

$32 \div 8 = 4$

$320 \div 8 = 40$

$3,200 \div 8 = 400$

$32,000 \div 8 = 4,000$

$320,000 \div 8 = 40,000$

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Maths Mastery- fluency/structure

You have a go

Complete the pattern:

$9 \times \square = 45$

$9 \times \square = 450$

$9 \times \square = 4{,}500$

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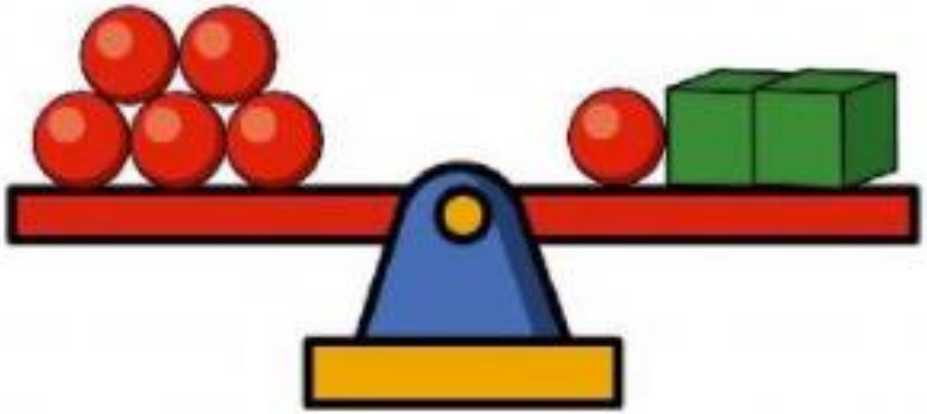
Maths Mastery-Mathematical thinking

The mass of a  is 5 kg



What is the mass of a  ?

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Mathematical Thinking

- We provide lots of opportunities for peer and collaborative discussions in our daily maths lessons.

- Problem solving and reasoning opportunities are embedded in every session to ensure deep learning

Questioning and Maths Talks

- What do you already know about this?
- What do you need to find out?
- How might you begin?
- How can you organise your information?
- Can you draw a picture to explain your thinking?
- Are there other possibilities?
- What would happen if …?
- What do you need to do next?

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Maths Mastery- Reasoning

Alex thinks the chart shows 456 - 4
Do you agree?

Hundreds	Tens	Ones
● ● ● ●	⌀ ⌀ ⌀ ⌀ ●	● ● ● ● ● ●

Rosie completes this subtraction incorrectly.

$$\begin{array}{r} 28701 \\ -\ 7621 \\ \hline 21180 \\ \hline \end{array}$$

Explain the mistake to Rosie and correct it for her.

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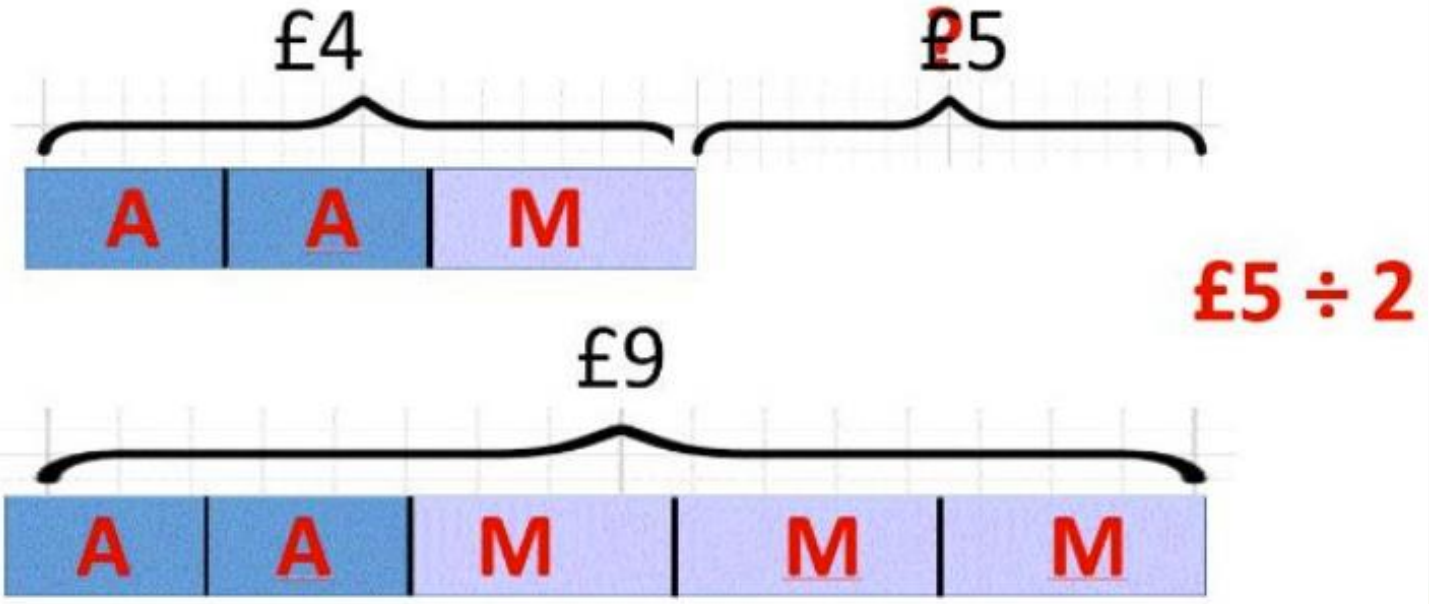
Reasoning - pictorial representations

Two apples and a mango cost £4. Two apples and three mangoes cost £9. Find the cost of a mango



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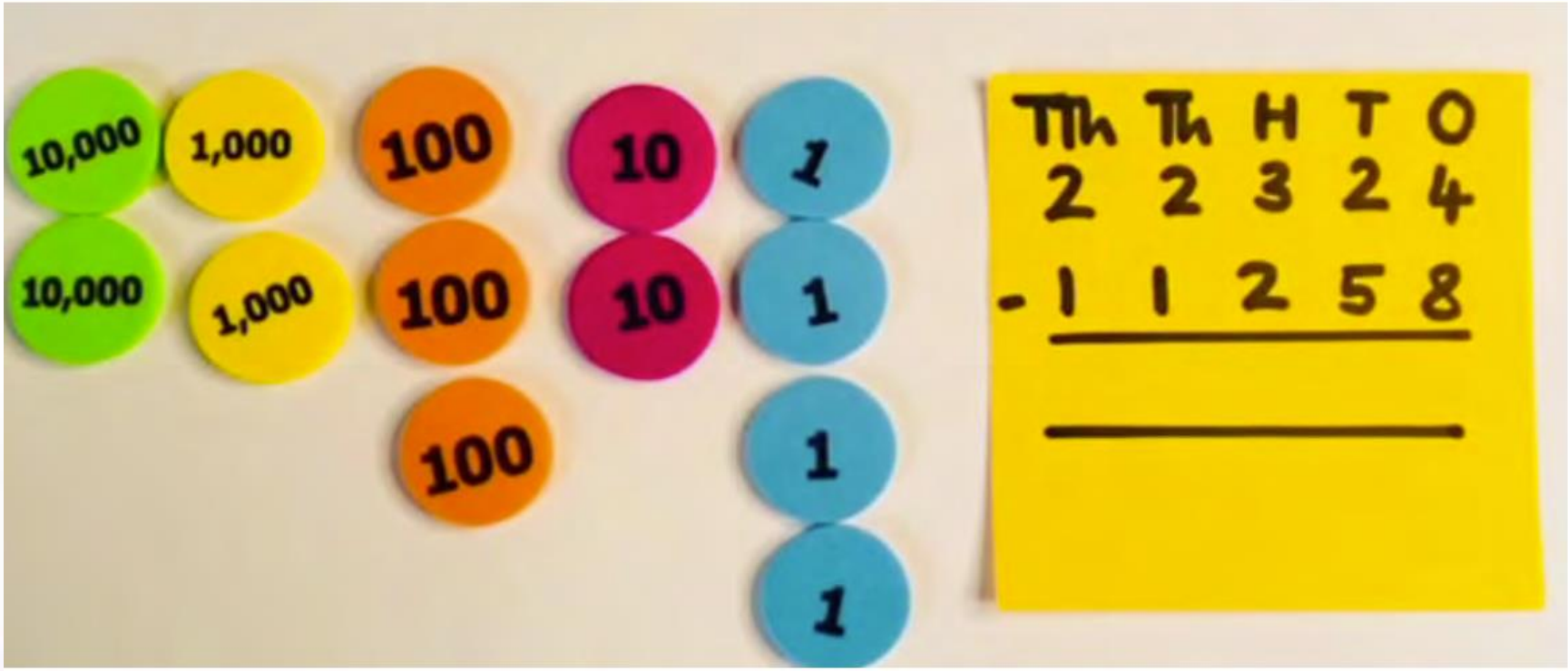
Supporting understanding using manipulatives



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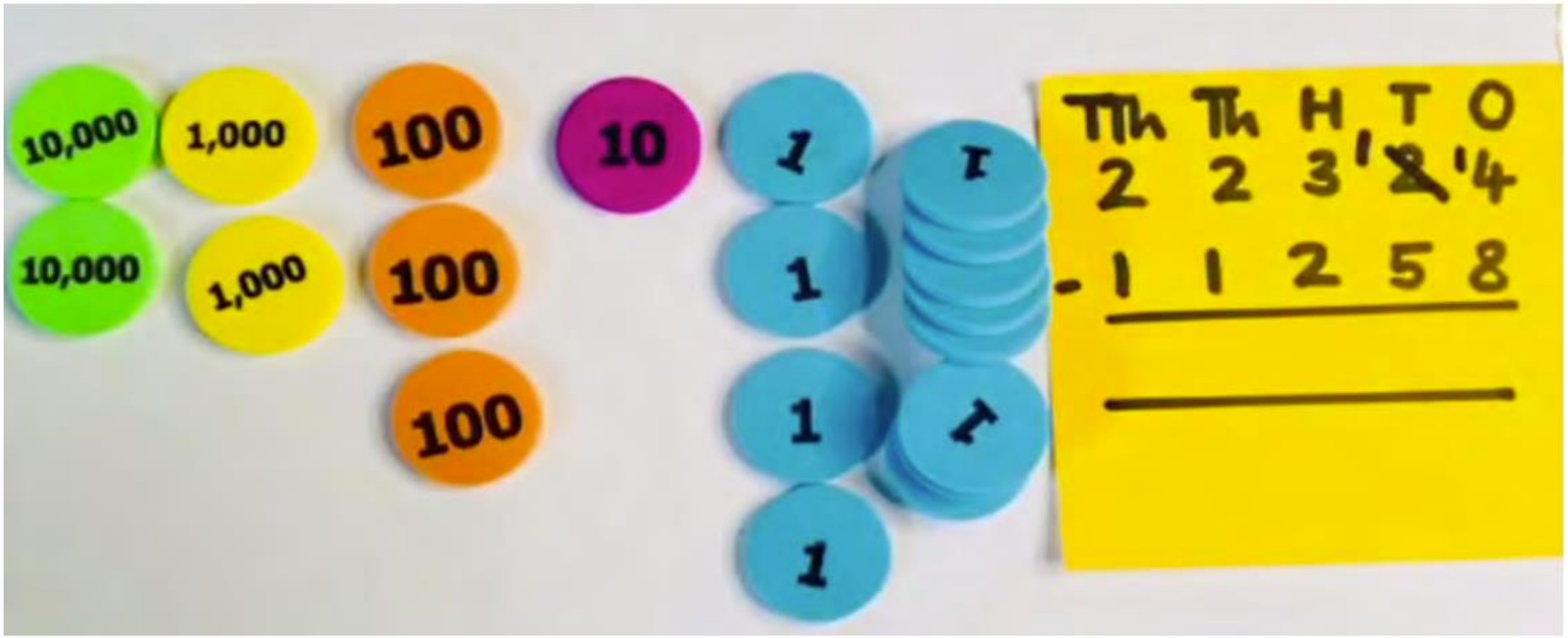
Supporting understanding using manipulatives



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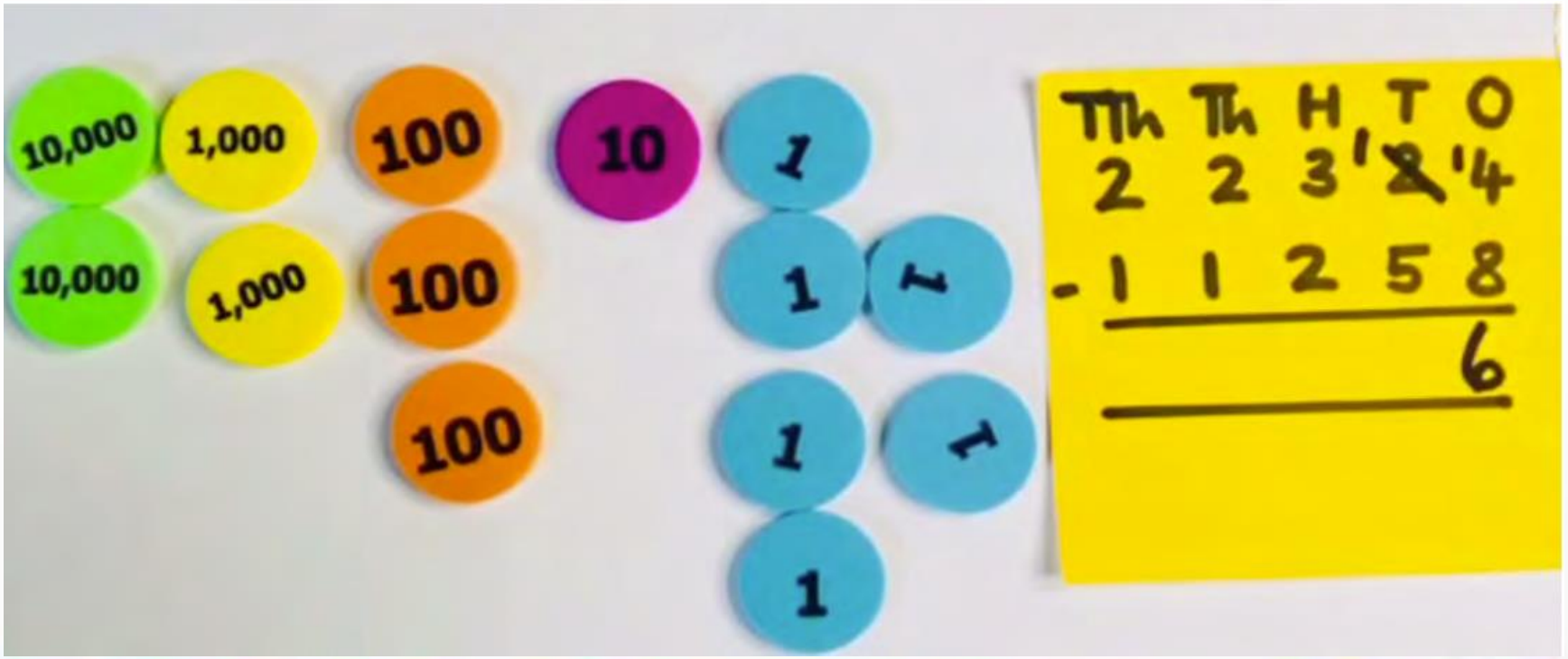
Supporting understanding using manipulatives



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Supporting understanding using manipulatives

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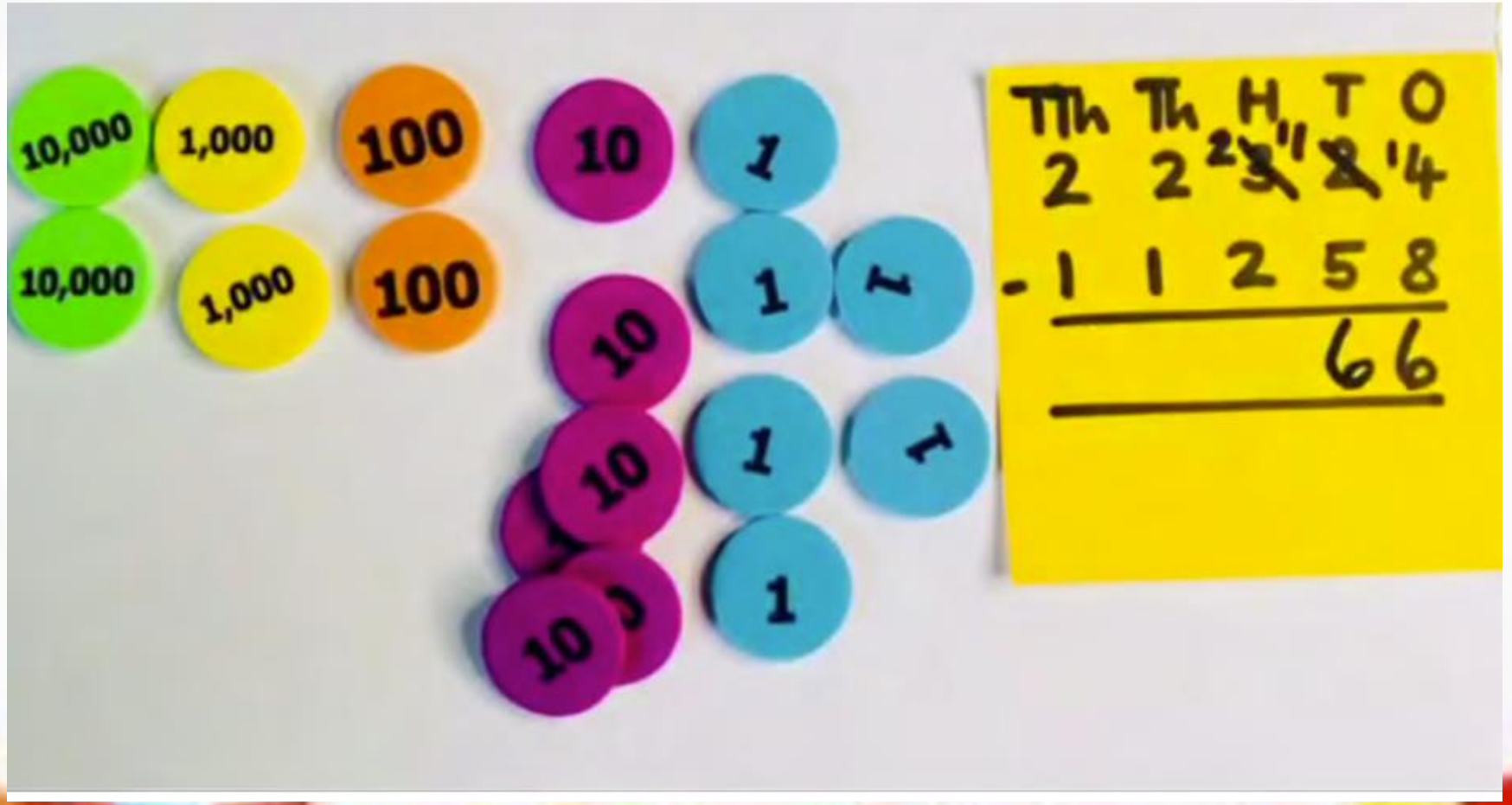

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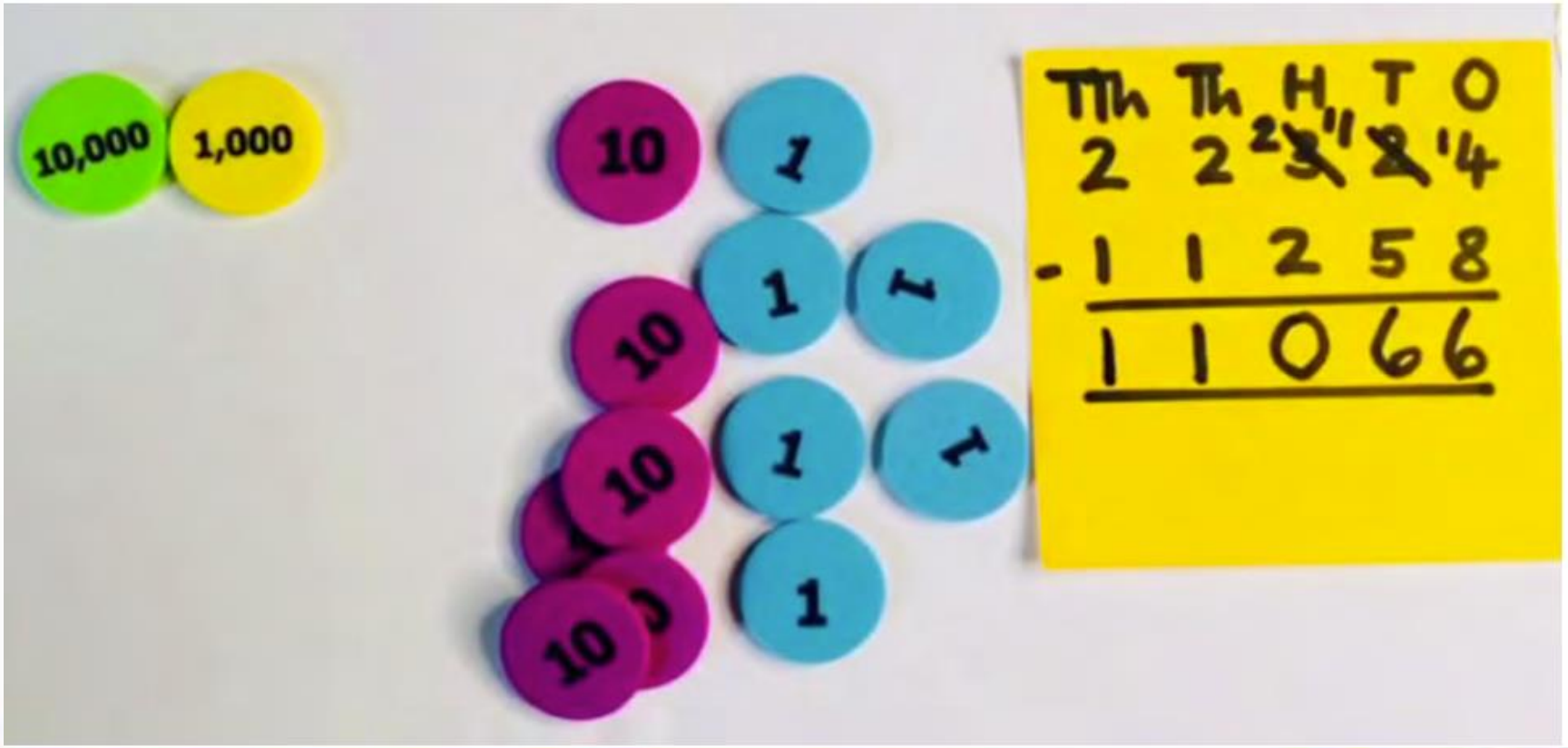
Supporting understanding using manipulatives



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What does Maths look like at RBS?

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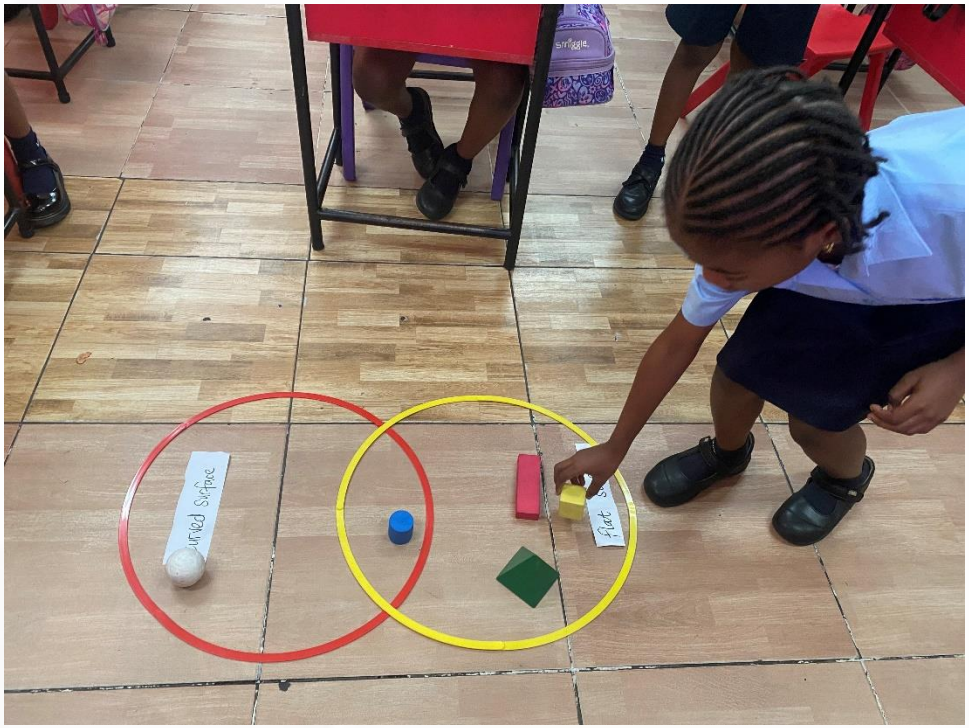

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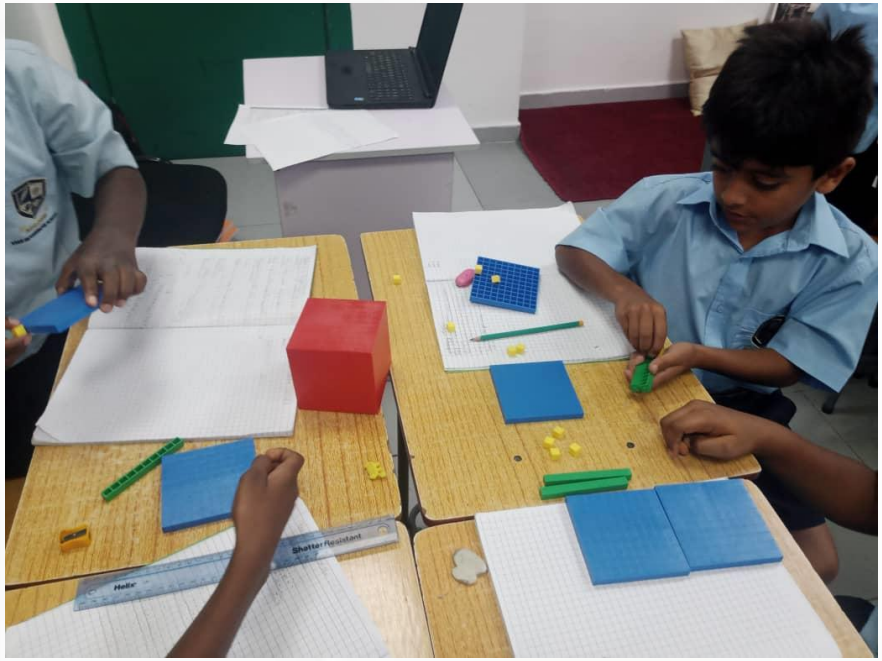
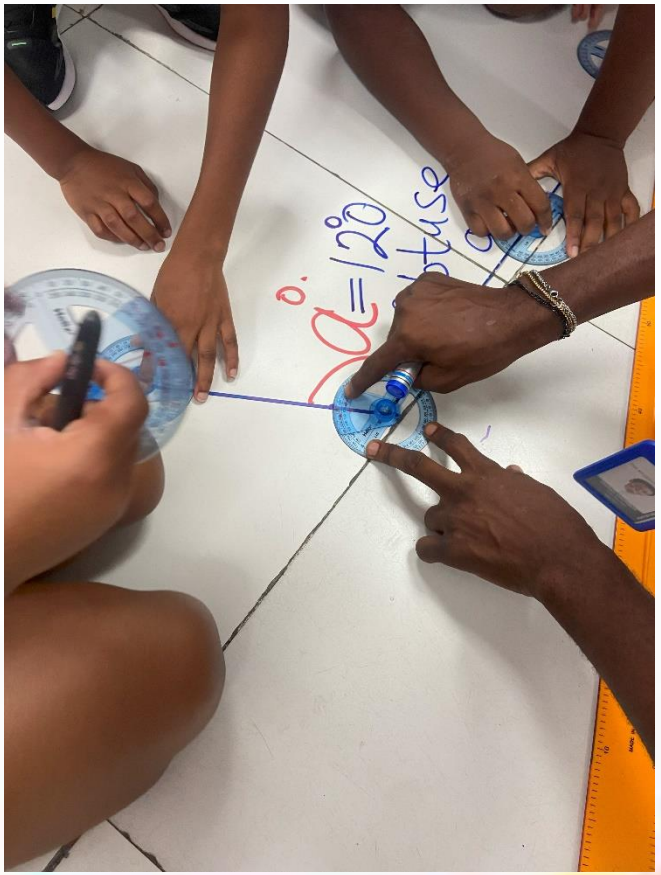
What does Maths look like at RBS?





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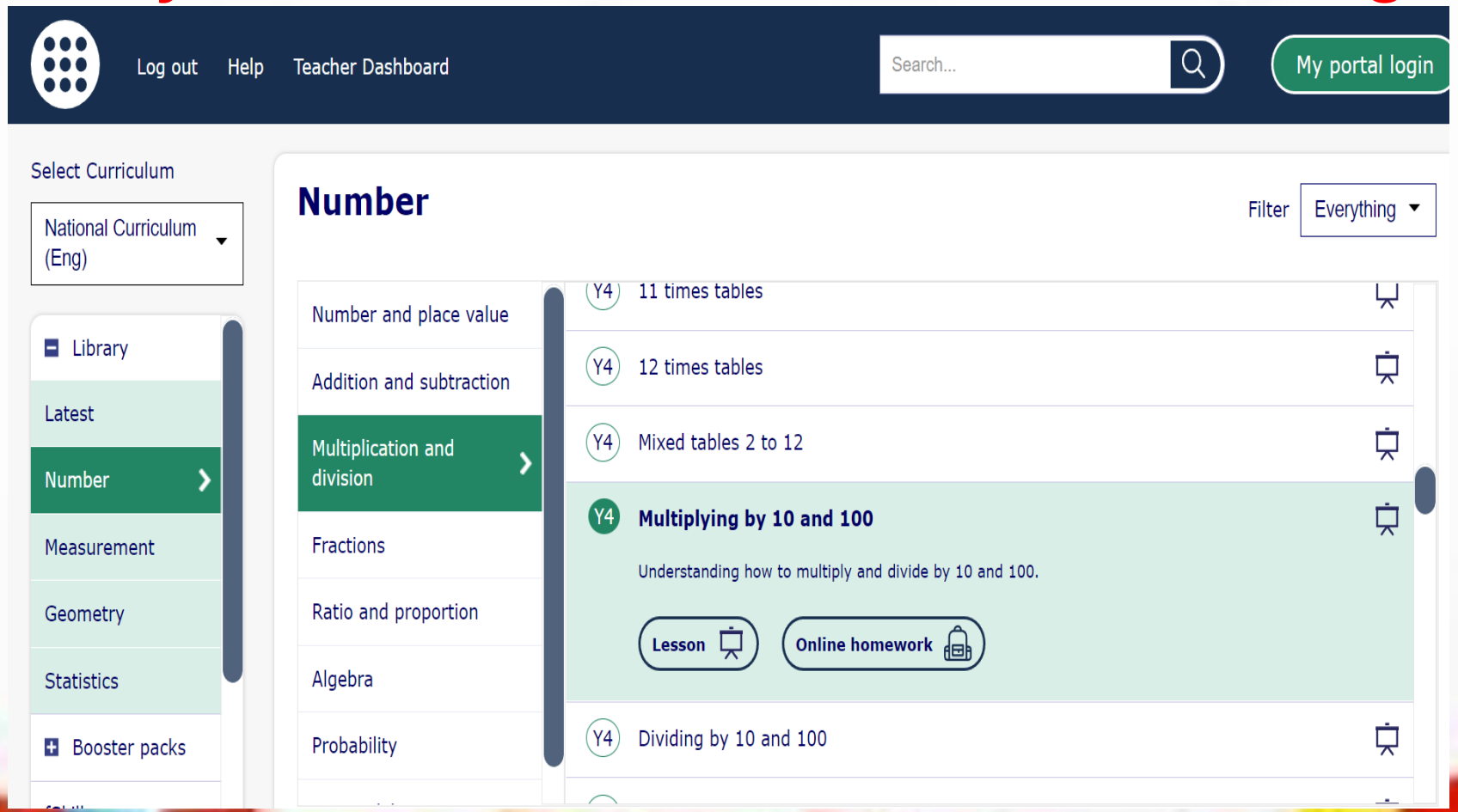
MyiMaths- more than home learning!

- RBS use MyiMaths to set some of our home learning but there is so much more to the site.

- Children can follow lessons(which give step by step instructions and opportunities to practice), play games and use the boosters to consolidate learning taught in school.

MyiMaths- more than home learning!



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MyiMaths- more than home learning!

Online Homework | More addition and subtraction | Video help | Menu

Q1 0/12

Q2 – Number problems

Fill in the gaps in this addition.

TTh	Th	H	T	O
	4	☐	4	6	☐
+	3	6	☐	4	1
	☐	1	9	☐	1
	1		1		

Q2 0/6

A library has 30,444 books available to borrow.

Currently, 1,537 books are out on loan.

How many books are left in the library?

No calc

Total 0/18

Mark it

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How can I help my child at home?

- Make maths part of everyday life
- Use the language of maths.
- Use the 3 part process – Concrete, pictorial and abstract.
- Deepen your child's learning by asking questions like;
- How did you..? Prove it.. true or false...

What did you need to..? Explain it…

* Encourage your child to use the correct vocabulary.

How to help with multiplication tables…

- Remember…
  - current methods may not be the same methods as you learnt.
  - you may have struggled as you were only taught one way.
  - it is important that your child finds out which way helps/works best (most efficiently) for them.

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Look for patterns

Tricky 6s

Tricky Sixes

Six times tables can be tricky to learn. One helpful trick is that in the 6 times tables, when you multiply an even number by 6, they both end in the same digit.

2 x 6 = 12

4 x 6 = 24

6 x 6 = 36

8 x 6 = 48

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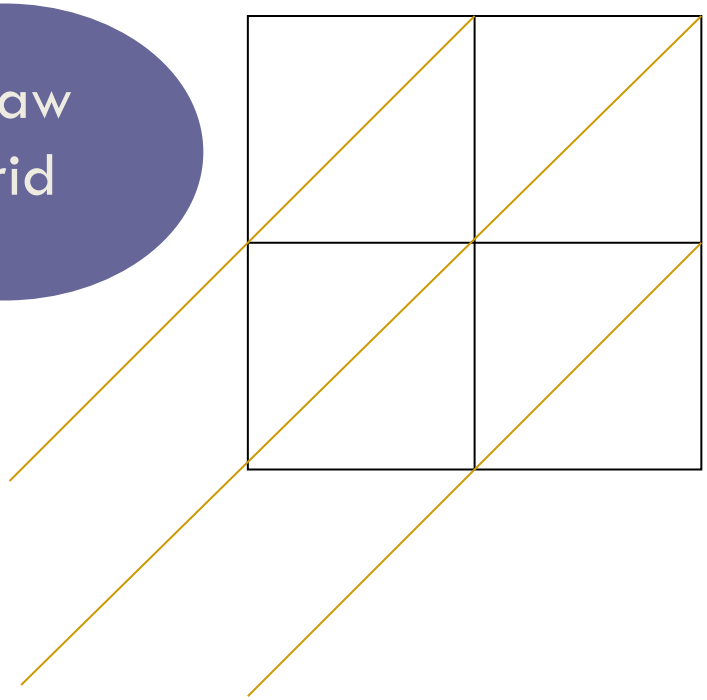
9's

- 1x9=9
- 2x9=18 digit sum 1+8=9
- 3x9=27 digit sum is 2+7=9
- 4x9=36 digit sum 9
- 5x9=45 digit sum 9
- 6x9=54 digit sum 9
- 7x9=63 digit sum 9
- 8x9=72 digit sum 9
- 9x9=81 digit sum 9
- 10x9=90
- 11x9=99 digit sum 18! Ahh..1+8=9!

TITLE: Lattice Method
LO: TBAT use the lattice method for multiplication

46×37

Draw grid

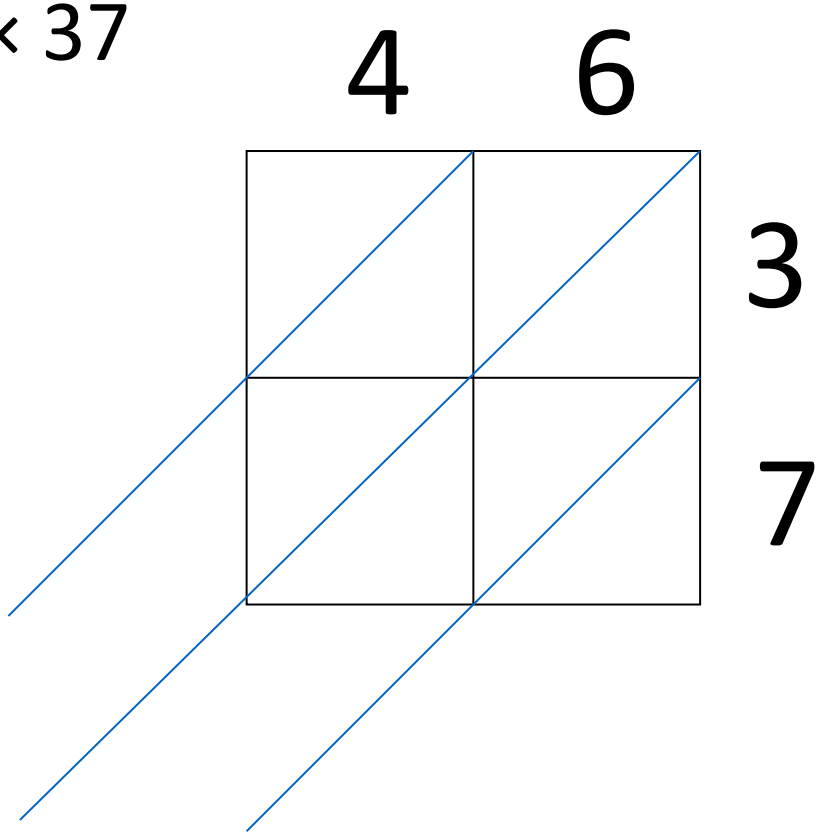


Draw lattice

TITLE: Lattice Method
LO: TBAT use the lattice method for multiplication

I Do

46×37



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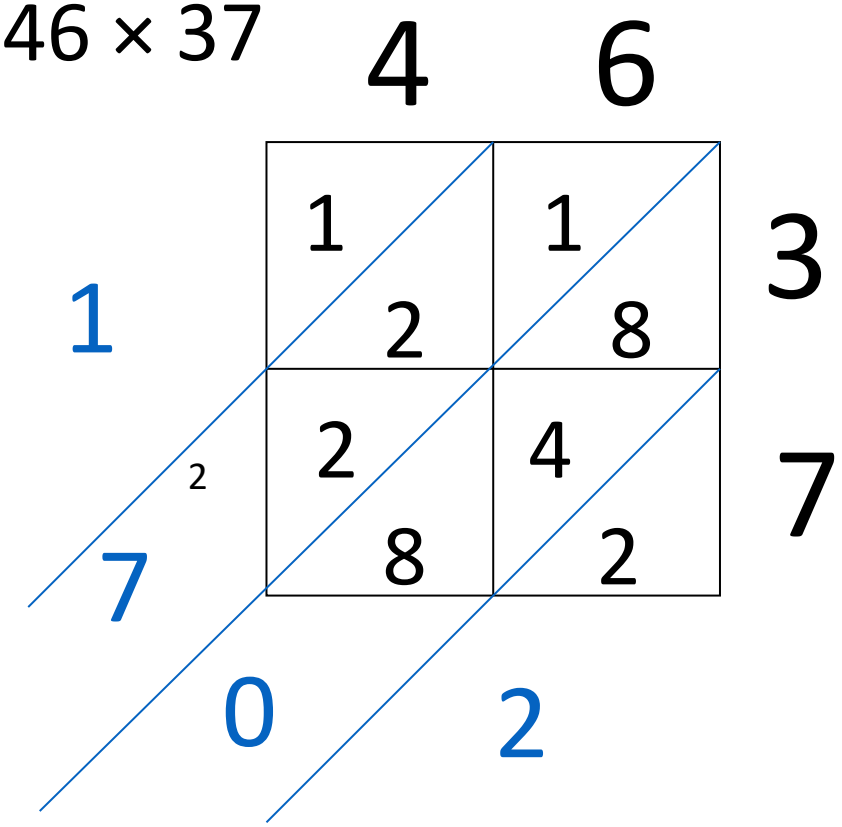
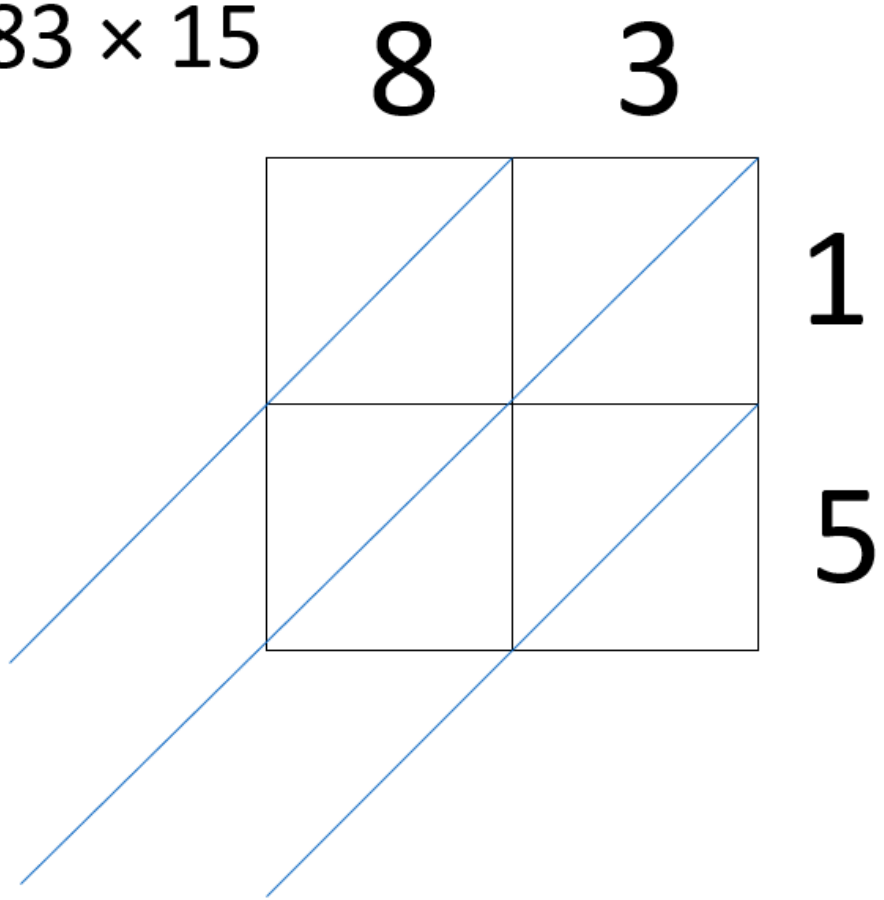


You have a go

83×15



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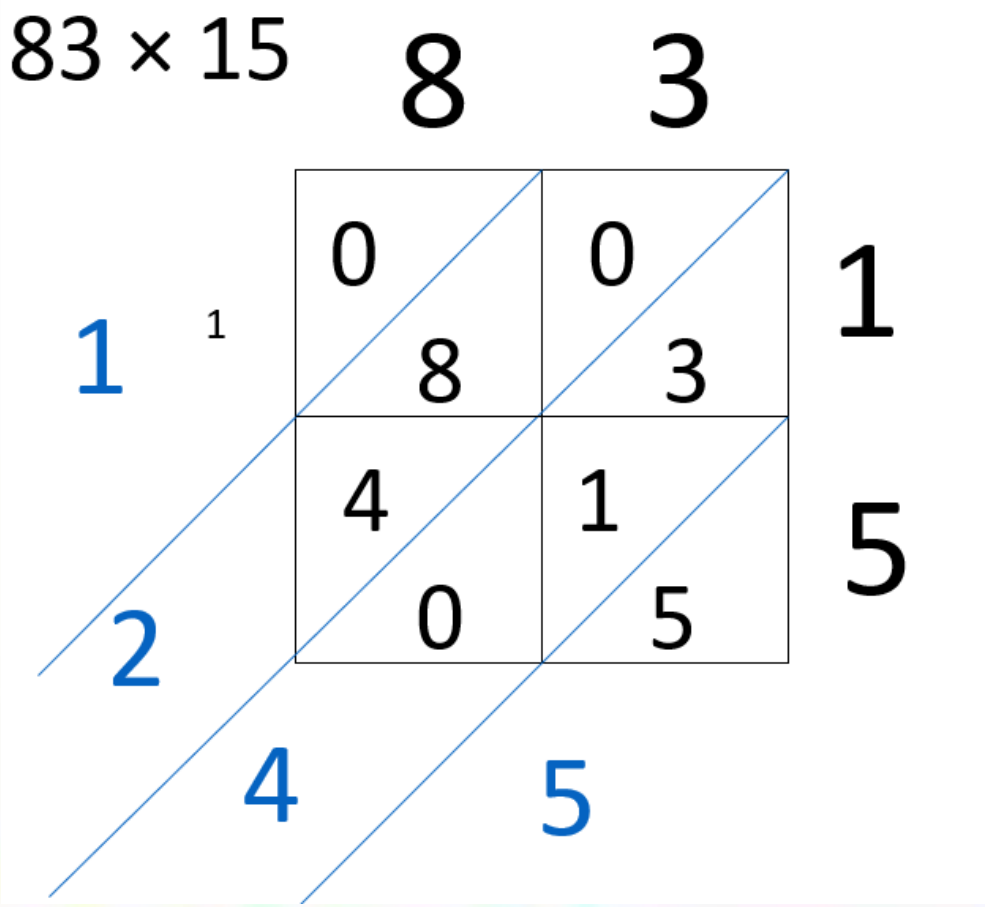
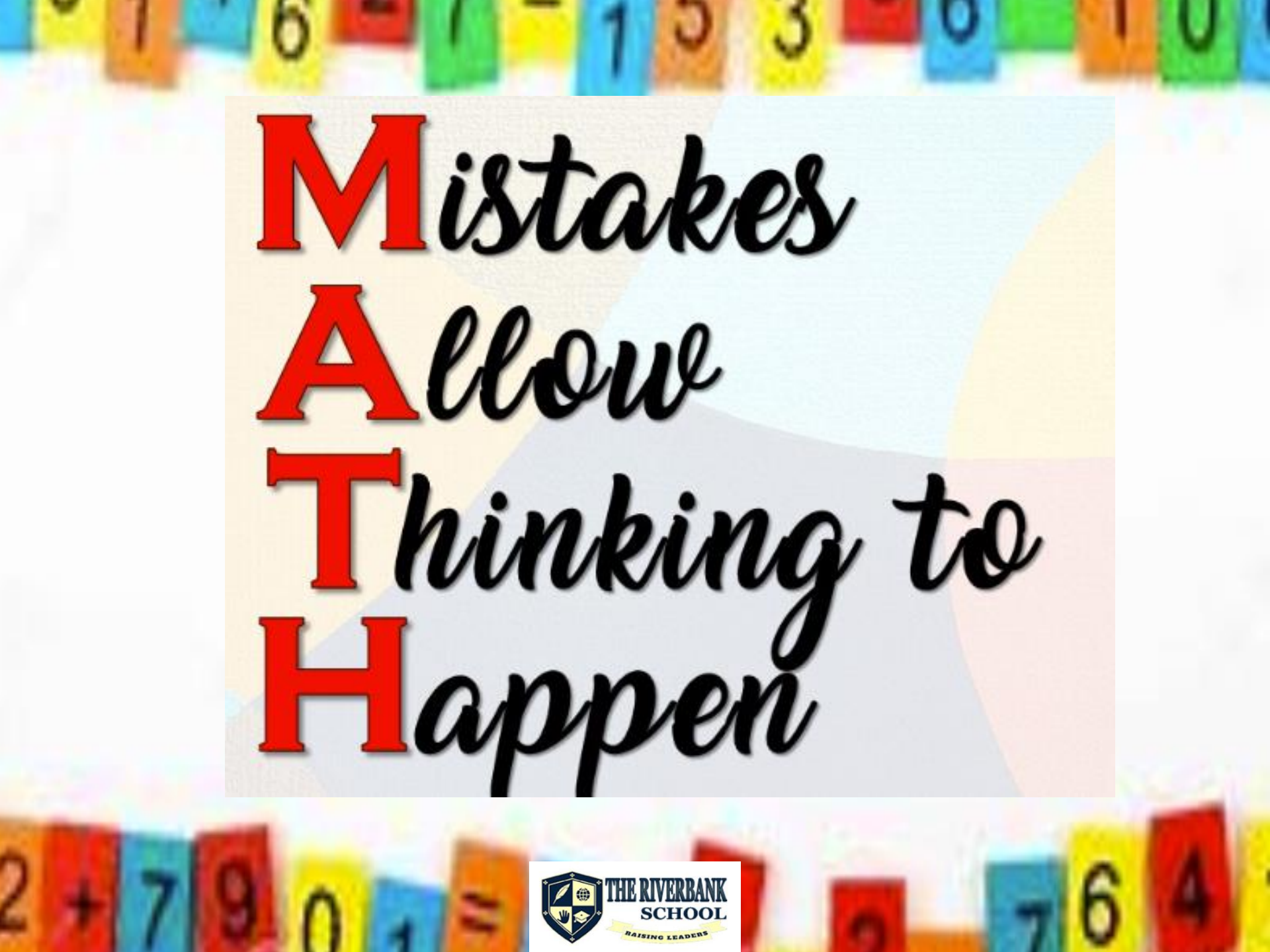
Answer

83×15




Mistakes
Allow
Thinking to
Happen
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Questions

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