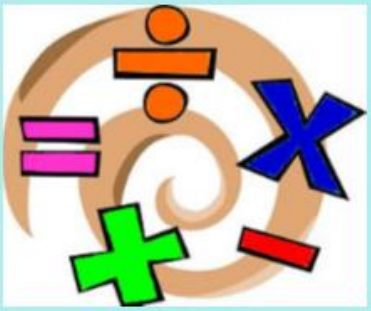
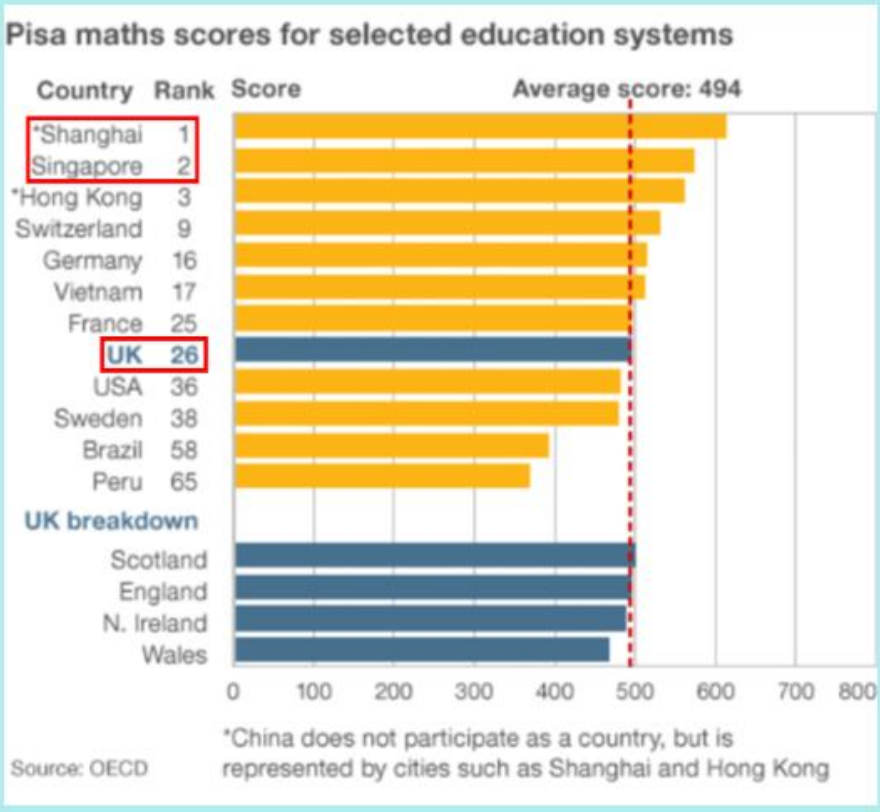


Maths at Upton

Extend Page

Singapore Maths



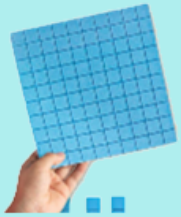
Jerome Bruner

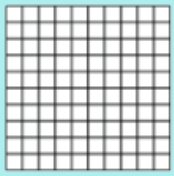
Why use 'Singapore maths' strategies?

"Ofsted, the National Centre for Teaching Mathematics (NCETM), the Department for Education, and the National curriculum Review Committee have all emphasised the benefits of teaching via the Singapore approach."

Conducted extensive research in to the 'CPA' approach of teaching mathematics.

Concrete -> Pictorial -> Abstract



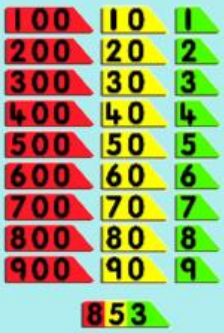


100

Mastery

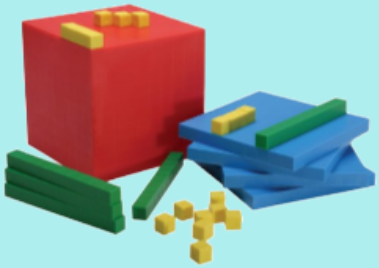
Extend Page

The use of **resources** and **manipulatives** through the Singapore Maths approach is extremely important. During your child's time at Upton, here are some of the resources they would be expected to use.



Extend Page

Dienes blocks



-Proportional: a stick of 10 is 10x bigger than a one (unit).

-Used alongside a place value grid to allow children to physically 'carry' and visualise numbers.

Th	H	T	O

When would I use this?

-Understanding place value.

-Explaining columnar methods.

-Can be used to explain other concepts

Place value counters

-Serves the same purpose as Dienes except the counters are all the same size. It's the next step towards abstract understanding.

-It gets to a point where Dienes restricts you due to it's proportional size.

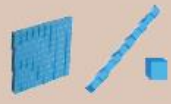
17 + 24

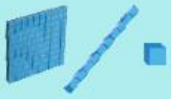
17,250 + 24,917

How many pupils attended Upton school between years 3 and 6?

Upton Primary School	
Year 3 - Year 4	136 pupils
Year 5 - Year 6	245 pupils

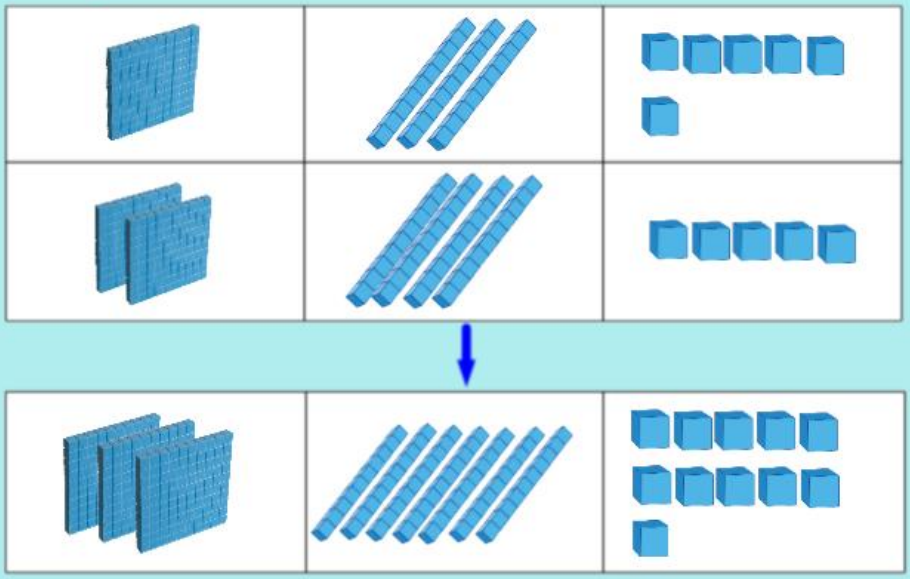
Challenge: can you show what you did using some of the resources on your table?



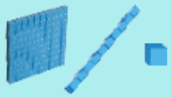


Upton Primary School	
Year 3 - Year 4	136 pupils
Year 5 - Year 6	245 pupils

Using Dienes blocks.



136
+
245
=



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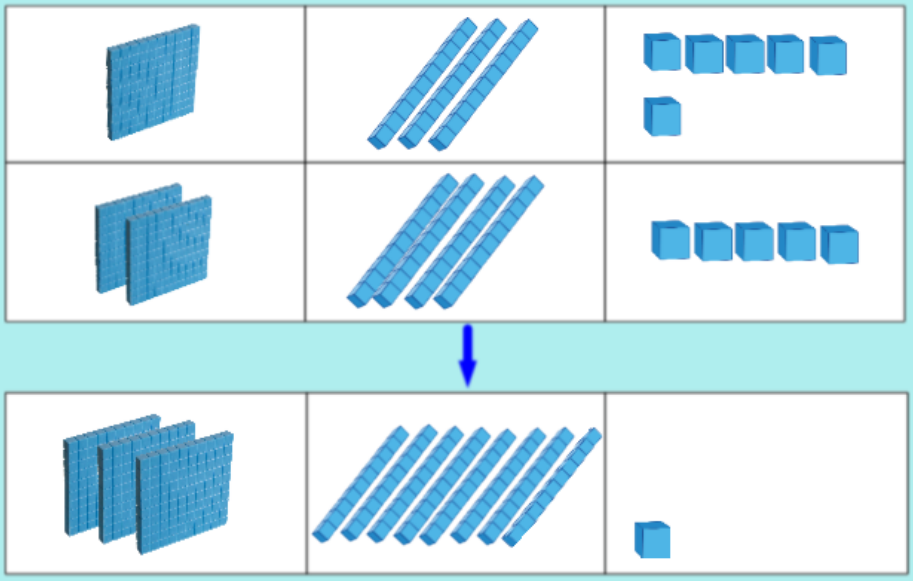
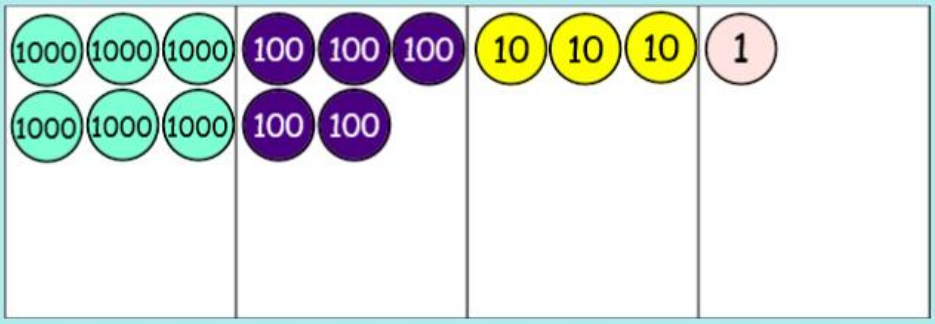


$$\begin{array}{r} 136 \\ +\ 245 \\ \hline 381 \\ \hline \not{1} \end{array}$$

+1

Subtract 2385 from 6531



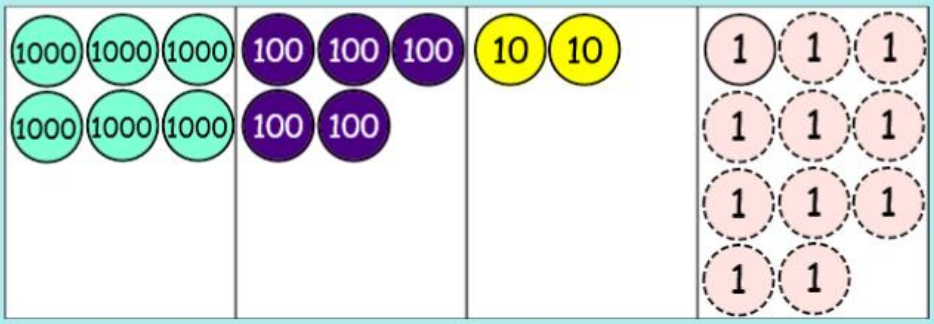
$$\begin{array}{r} 6\,5\,3\,1 \\ -\,2\,3\,8\,5 \\ \hline \\ \hline \end{array}$$

6 5 3 1

There aren't enough ones!

1000 100 10 1

Subtract 2385 from 6531

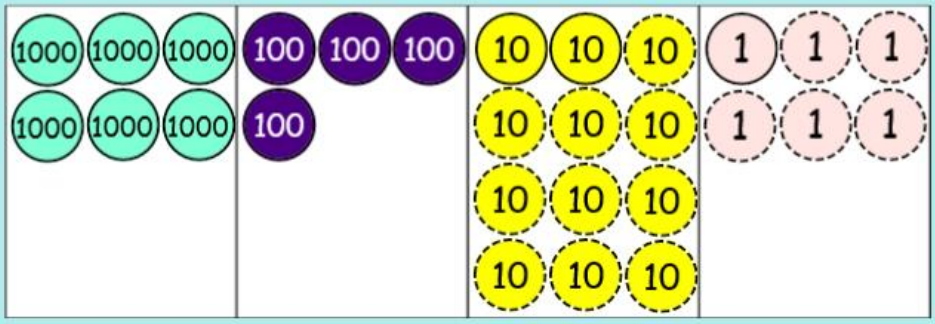


$$\begin{array}{r} {\scriptstyle 2\ 1} \\ 6\,5\,\not{3}\,1 \\ -\,2\,3\,8\,5 \\ \hline \\ \hline \end{array}$$

Let's exchange a 10 for ten 1s

1000 100 10 1

Subtract 2385 from 6531

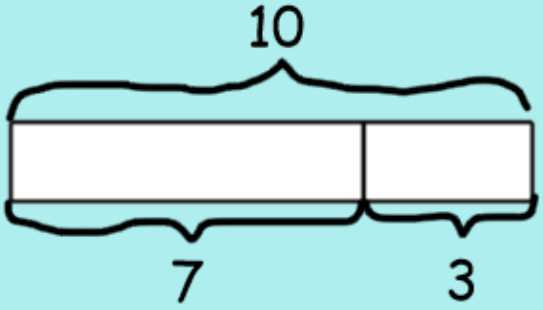


$$\begin{array}{r} {\scriptstyle 4\ 12\ 1} \\ 6\,\not{5}\,\not{3}\,1 \\ -\,2\,3\,8\,5 \\ \hline 4\,1\,4\,6 \\ \hline \end{array}$$

Let's exchange a 100 for ten 10s

Bar Modelling

The bar method is a popular visual strategy used in Singapore to visualise a question, usually a word problem, before attempting to solve it.



Children can use the 4 rules (addition, subtraction, multiplication and division) confidently but need support in applying it in **reasoning** style questions.

Greater depth thinking - can you explain how or why you have reached an answer?

Extend Page

A farmer is tending to his plants.

He uses 19 buckets of water on 2 plants.

How many buckets of water does he use on 6 plants?

buckets

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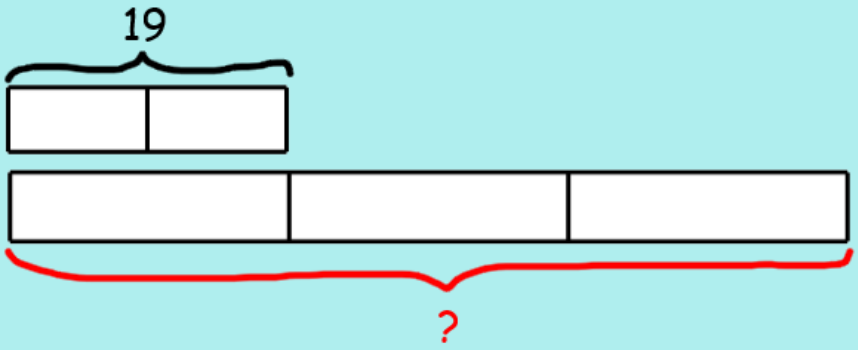

buckets

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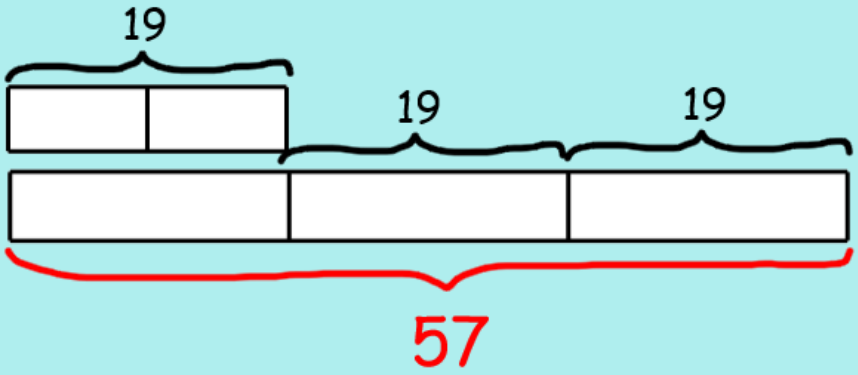

$$\begin{array}{r} 19 \\ \times\ \ 3 \\ \hline 57 \\ \hline \not{7} \end{array}$$

57 buckets

The girls football team score 69 goals in two weeks.

$\frac{2}{3}$ of the goals were scored in week one.

How many were scored in week two?

goals

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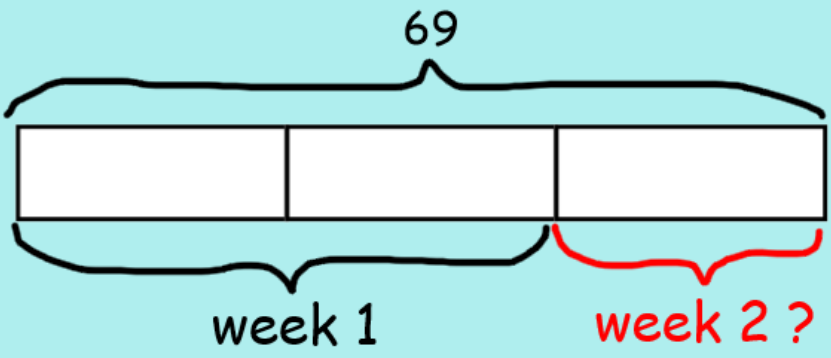

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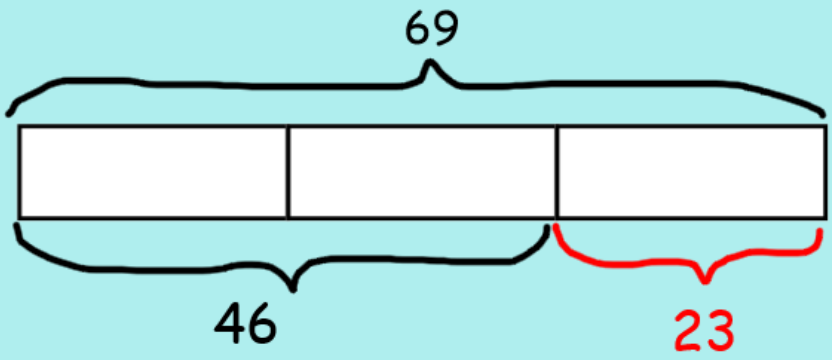


23 goals

Mathematical vocabulary

Addition +

count up

total

sum

add

more

increase

Subtraction −

take away

difference

subtract

less

decrease

minus

Multiplication ×

Multiply

Multiplier

Times

Lots of

Multiplicand

By

Product

Factor

Repeated addition

Division ÷

Group

Divisor

Dividend

Quotient

Share

Divide

Split equally

Repeated subtraction

Extend Page

Formal written methods (Upton calculation policy)

Column addition

$$\begin{array}{r} 2380 \\ +\ 7945 \\ \hline 10325 \\ \hline \end{array}$$

1 1

Column subtraction

$$\begin{array}{r} 4\ 1 \\ 5047 \\ -\ 2326 \\ \hline 2721 \\ \hline \end{array}$$

Grid method followed by short multiplication

78 x 9

x	70	8
9	630	72

$$\begin{array}{r} 78 \\ \times\ 9 \\ \hline 702 \\ \hline \end{array}$$

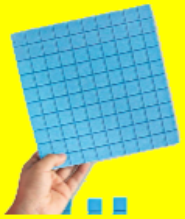
7

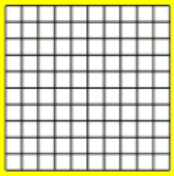
Short division (known by some as the bus stop method)

$$4\overline{)2^{2}48}\ \ 062$$

To conclude, at Upton we appreciate that all children learn in different ways. As a result of this, the CPA approach enables us to meet the needs of all learners in the class on their journey to mastery.

Concrete -> Pictorial -> Abstract





100

At home you can...

- Continue to recite the times tables up to 12x12.

- Complete the weekly Kung Fu Mathster homeworks (examples of these are on our table to look at).

-Complete the regular MyMaths tasks.

- To use MyMaths as an extra resources. MyMaths lessons are freely available for parents to use when needed.

- Use maths in day to day life. E.g. weighing ingredients, handling money and telling the time.

At home you can...

- In the foreseeable future (this term) your child will receive a personalised sheet of maths targets, highlighting the areas in which they could improve.

- You will also be able to refer to our website where you will find example test-style questions to complete with your child in each of the areas within the maths curriculum.

www.uptonjunior.com

- Within school we are using the Percy Parker times tables CD. If you would like to go out and buy this as an extra times tables resource you can get it from Amazon for around £8.00.

- Across this term you will also receive from the school a 12 x 12 times tables poster resource for your child to use at home.