



Maths Workshop

14th November 2022

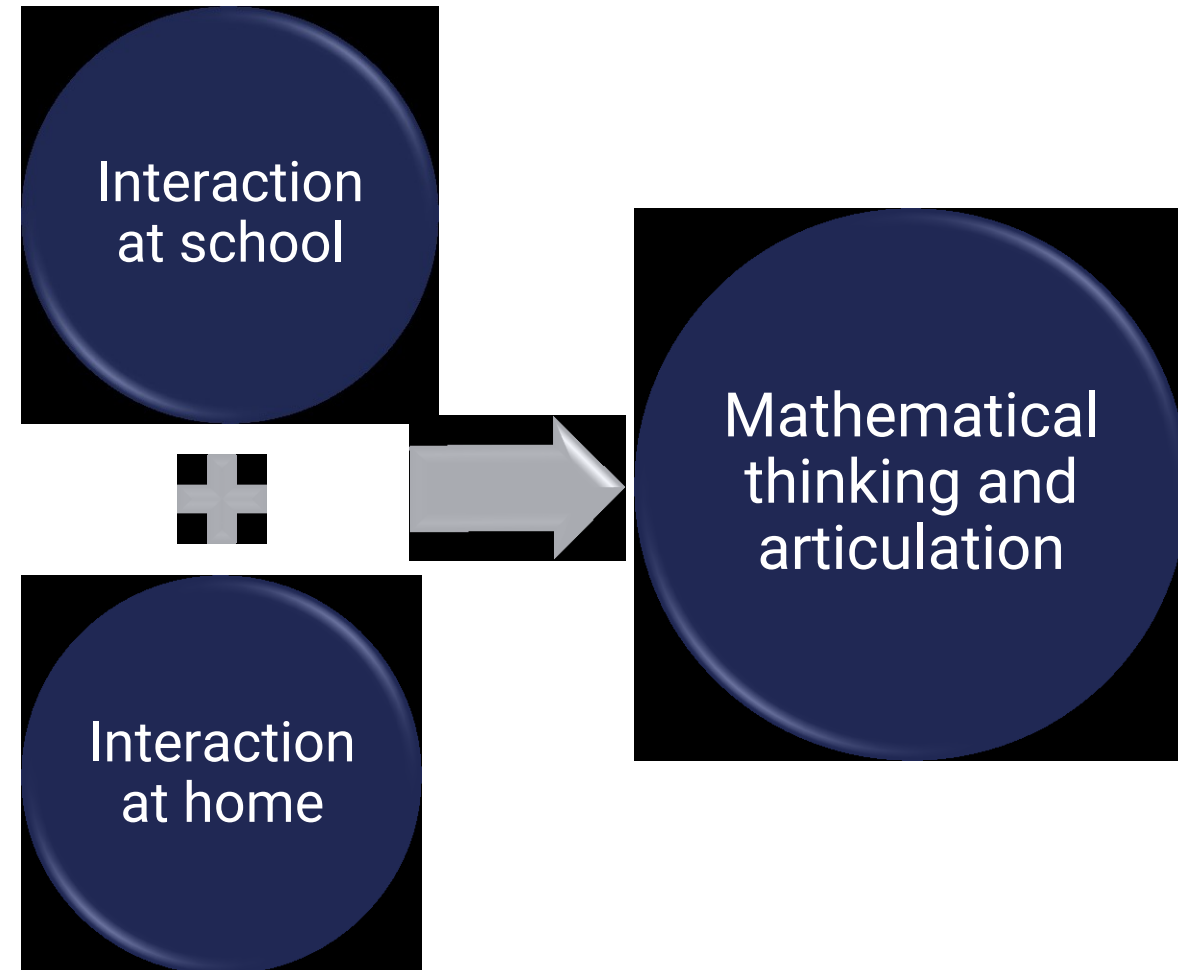
Mrs A Clark

Timings for this morning

- Presentation and Q&A to 9:30.
- Visit classroom(s) between 9:30 and 10:00
- Watch maths activities and ask your child what they are learning
- Look in maths book, arithmetic book and displays
- Reminder: staff will be working with children and not available for questions
- Questions?
- Please add questions and comments to post-it notes and stick them on the tables. Write your child's name on the note.

Our aims

- To welcome you in to our school to watch a learning session
- To provide information on how maths is taught
- To encourage a positive mindset towards maths
- To suggest ways parents can help with maths at home
- To allow children to demonstrate their maths skills, maths books and to share their enthusiasm for maths
- To demonstrate resources and problem solving activities in a positive learning environment



SATs questions: how do they make you feel?

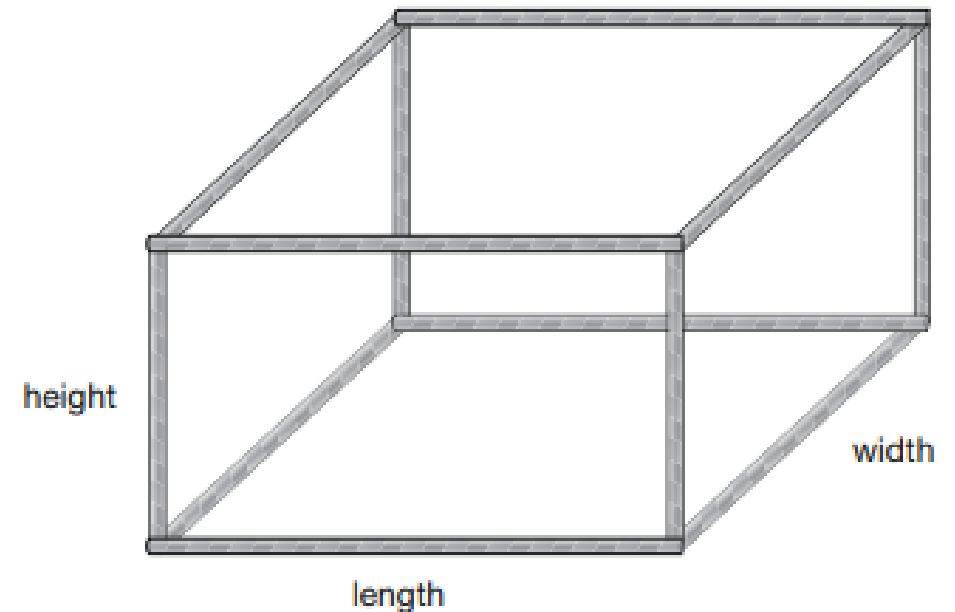
9

Complete the calculation.

$$1,000 \times 416 = 10 \times$$

17

Kim makes a cuboid model using straws.



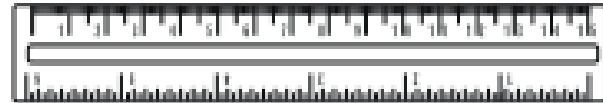
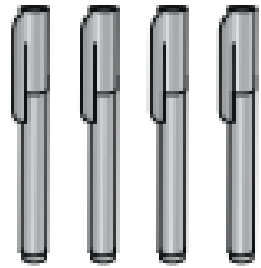
She uses straws that are 7.5 cm long for the height.

She uses straws that are 11 cm long for the length.

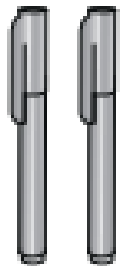
She uses straws that are 8.5 cm long for the width.

What is the **total** length of all the straws in her model?

Adam buys 4 pens and a ruler and pays £4.75 altogether.



Jack buys 2 pens and pays £1.98 altogether.

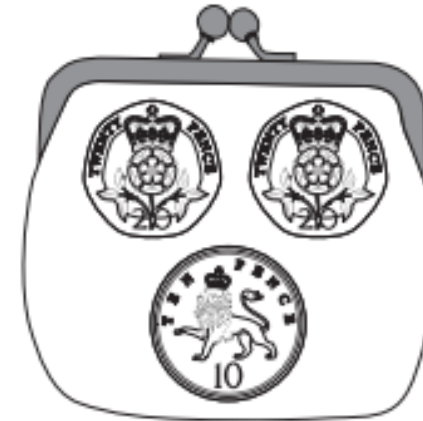


How much does a **ruler** cost?

19

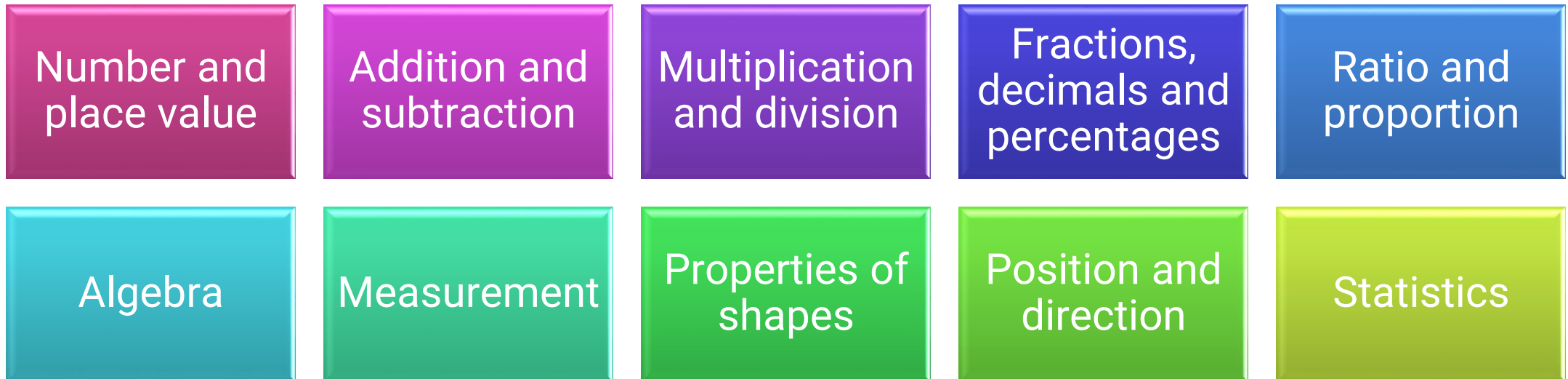
Two of these purses have the **same amount** of money.

Tick them.



What is maths?

- Mathematics is a **subject that deals with numbers, shapes, logic, quantity and arrangements**. Mathematics teaches to solve problems based on numerical calculations and find the solutions.



- Areas of maths are connected. It is essential for everyday life, crucial for employment, a foundation for understanding the world. It encourages creativity, logical thinking and fun!

“I’m not sure how to help my child
as I don’t know how they teach maths
these days.”

How to best support your child with maths

- We don't expect you to be a maths teacher!
- So what do children actually need from you?
- Positive mindset about maths
- Regular talk about maths
- Encourage regular (daily) practice of core skills
- Number bonds (10, 20, 100)
 - Times tables
 - Spotting patterns
 - Games



Mathematical interactions at home

- Ask questions to clarify thinking
- Give child time to think
- Take time to listen

$+5 \quad +5 \quad +5 \quad +5 \quad +5 \quad +5$
 $2, 7, 12, 17, 22, \underline{27}, \underline{32} \dots$

I notice that ...
...is the same as ...
...is different to ...
It reminds me of ...
I think that ...
I know that ...

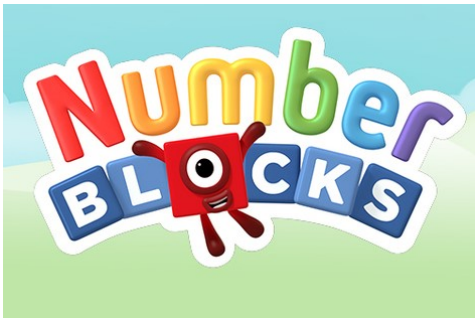


What do you notice?

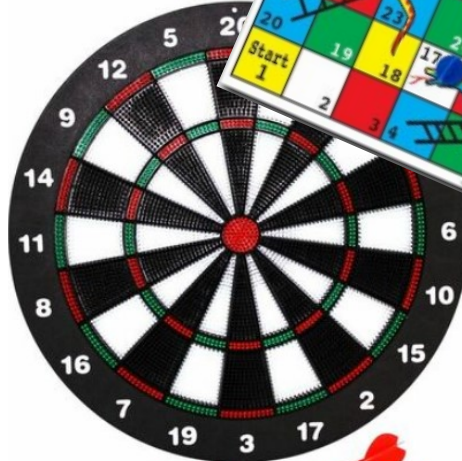
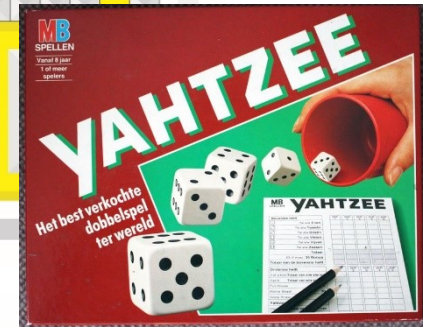
What does that remind you of?

What pattern can you see?





Maths at home



Talking leads to deeper thinking

Mastery 5: problem solving and reasoning steps

- Describe
- Explain
- Convince
- Justify
- Prove

Describe <ul style="list-style-type: none"> • Tell me what the problem is asking you to do. • What is the same, what is different? 	I need to... It says that... The calculation I will need is... First I need to... then I will... I notice that...
Explain <ul style="list-style-type: none"> • How did you solve the problem? • What did you have to do? • What maths knowledge/skills did you need to solve this problem? 	I have noticed that... I predict that...because... I estimate that ... because... I have tried.... therefore... It is a pattern because... I know this can't be true...because... The rule is...
Justify <ul style="list-style-type: none"> • Reasoning mathematically, in their own words. 	It doesn't work because... It did work because... It is the most accurate / efficient because... If I know... then I know... because... My strategy is different because... I have checked by...
Convince <ul style="list-style-type: none"> • Show your working out. • Further proof: show a concrete, pictorial or abstract solution. 	If this... then this... Another way to show this is... The pattern is... For example... This is another strategy... I have checked by...
Prove <ul style="list-style-type: none"> • Show me the inverse calculation. • Show the problem in more simplified terms so that it is shown to be true. 	Another way to show / prove is... We could summarise this... I have discovered that... I could start another way by... This is a more efficient way...

It's all about the talk

4LS16

Step 3 Conversation

Speaking Frame

is the sum of and .

and is altogether.

more than is .

The total of and is .

0.45 is greater than 0.7
because
45 is greater than 7.



0.7 is greater than 0.45
because 0.7 has 7 tenths and 0.45
only has 4 tenths and another
5 hundredths.

Which is greater 0.7 or 0.45?

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$$1024 - 512$$

$$887 - 63$$

$$55 - 27$$

$$323 - 198$$

I noticed that... so I chose this strategy.

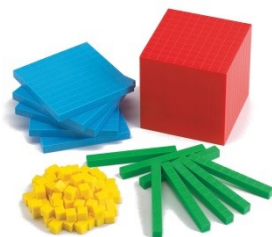
Template provided by © Herts for Learning

Manipulatives that your children regularly use

Counters



Cuisenaire



Dienes/Base 10

Multilink

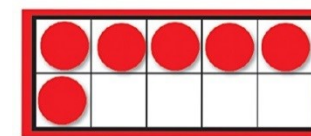


Dice

Numicon



Bead
strings

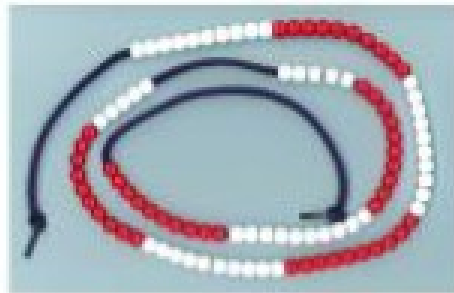


Tens
frames

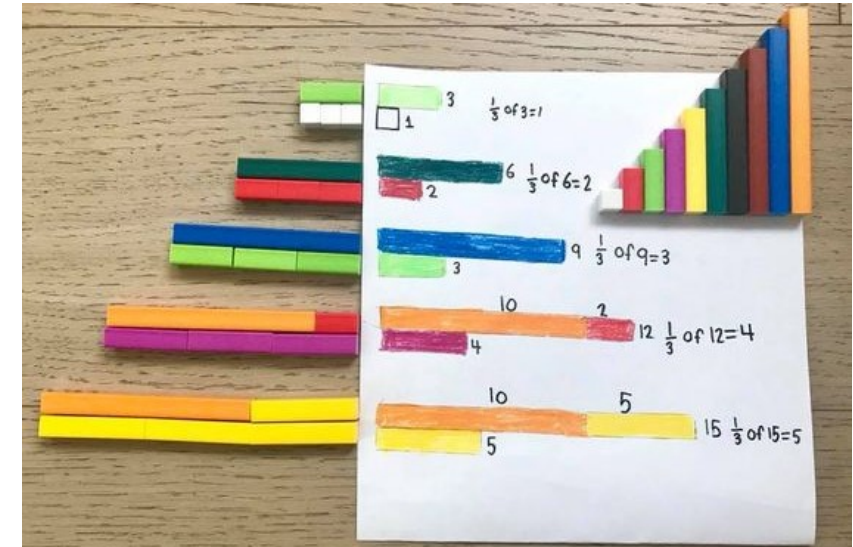
Manipulatives used to deepen thinking

Convince me that...

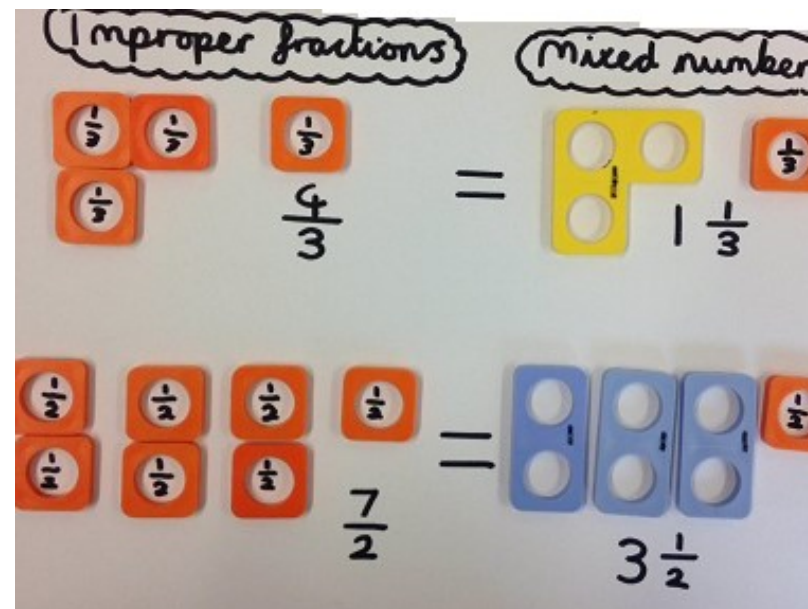
There are 7 different whole numbers **between** 5 and 13.



That 6.2 is halfway between 5.9 and 6.5

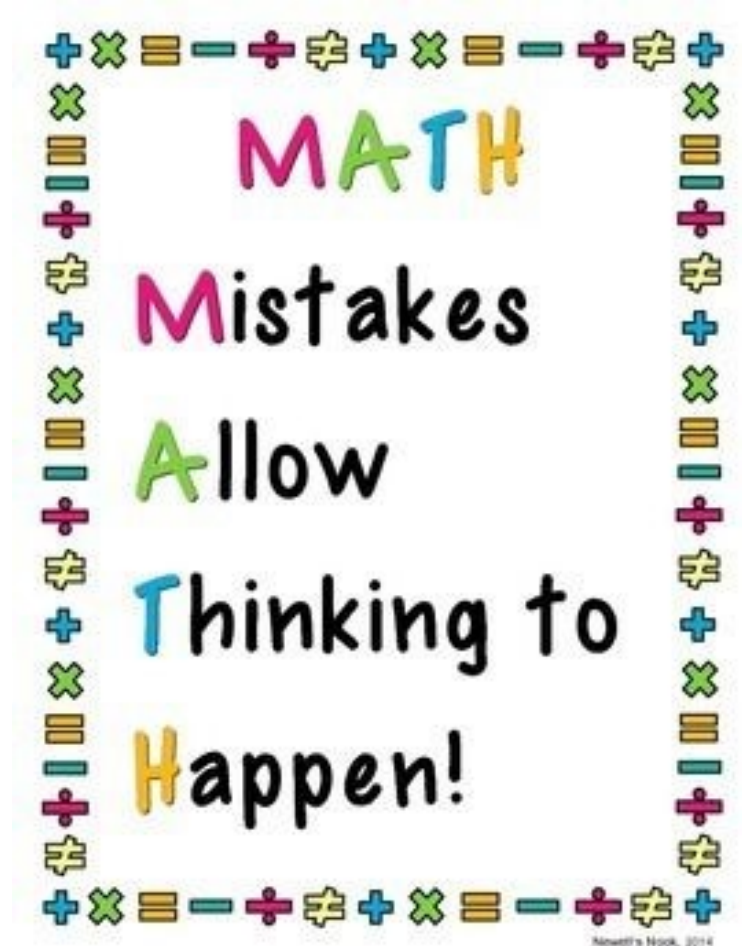


That 10% of 80 is equal to 80% of 10



Maths Curriculum

- <https://ashwell.herts.sch.uk/curriculum/subjects/maths/>
- Mastery Approach
 - Time given on key concepts to build secure foundations
 - Opportunities given to deepen thinking
 - Builds connections between maths topics
 - Inclusive approach that builds self-confidence
 - Concrete, pictorial, abstract
 - Giving time to think and talk
 - Being positive about maths and celebrating mistakes!



Skills progression: Addition

- How would you solve these problems?

Year 1

$$8 + 5$$

Year 2

$$43 + 35$$

Year 3

$$247 + 135$$

Year 4

$$2324 + 5646$$

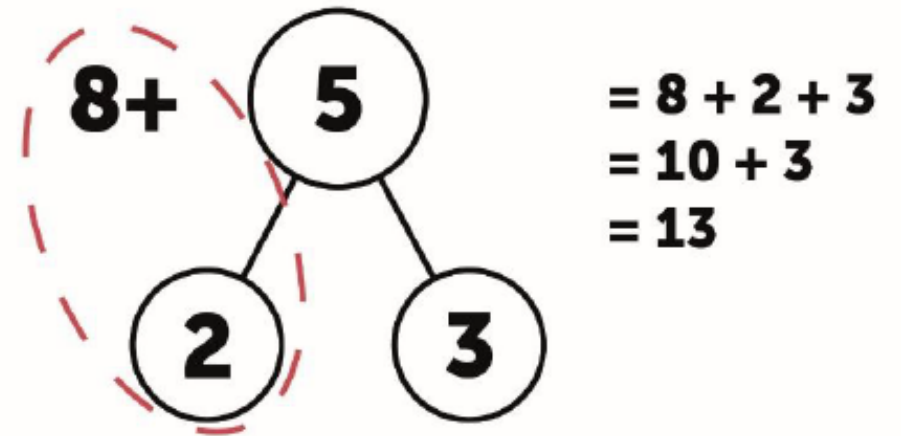
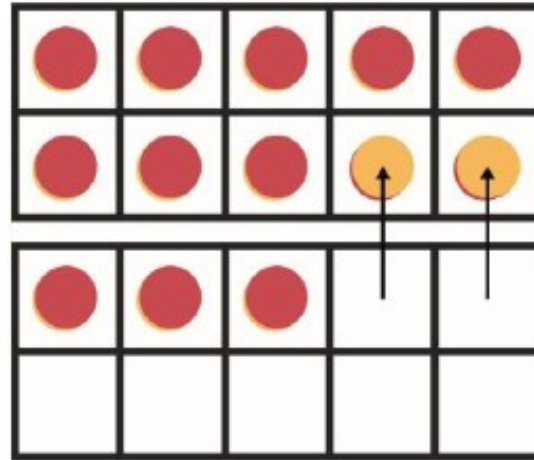
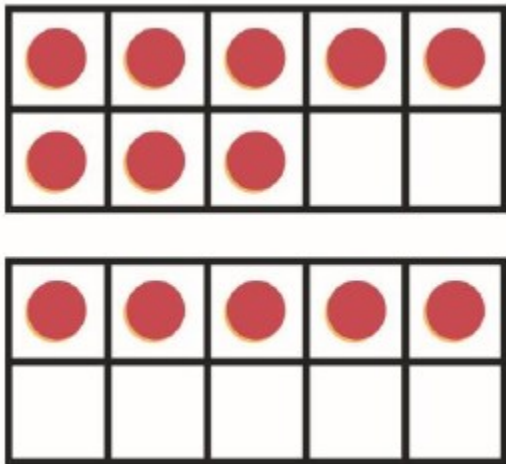
Year 5 and 6

More rehearsal of column addition with larger numbers, decimal numbers, money and measures, and more complex problem solving.

Teaching effective strategies: Year 1

$8 + 5$

We use tens frames (concrete) and a part-whole model (pictorial) to help us learn how to “Think 10”. Then we can write a number sentence (abstract).

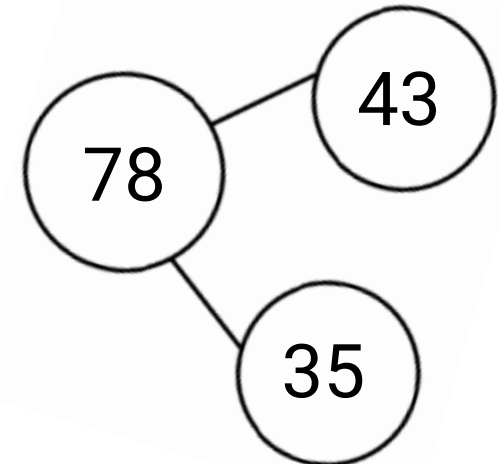
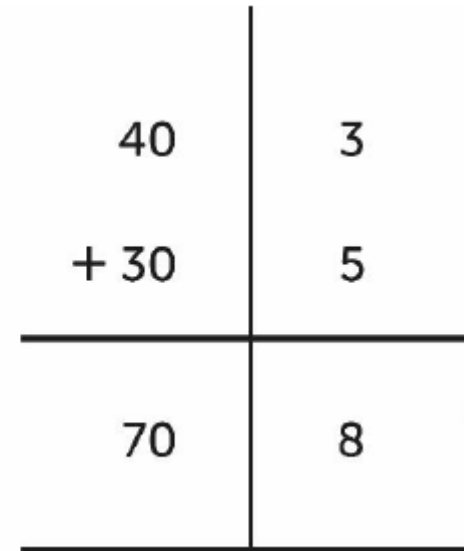
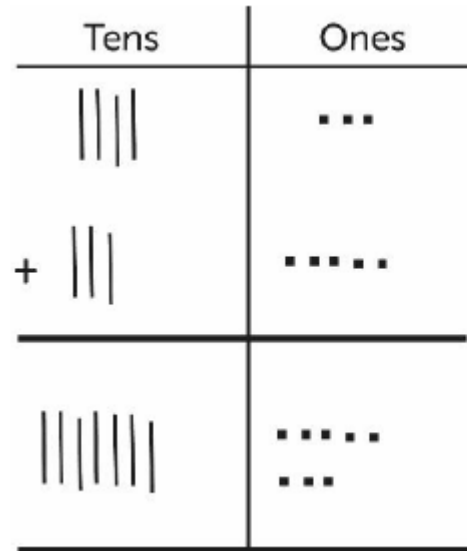
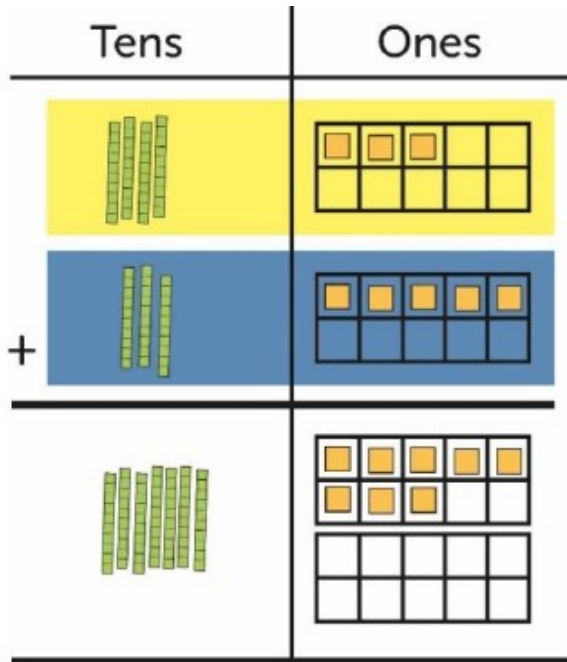


Teaching effective strategies: Year 2

$43 + 35$

The beginnings of column addition.

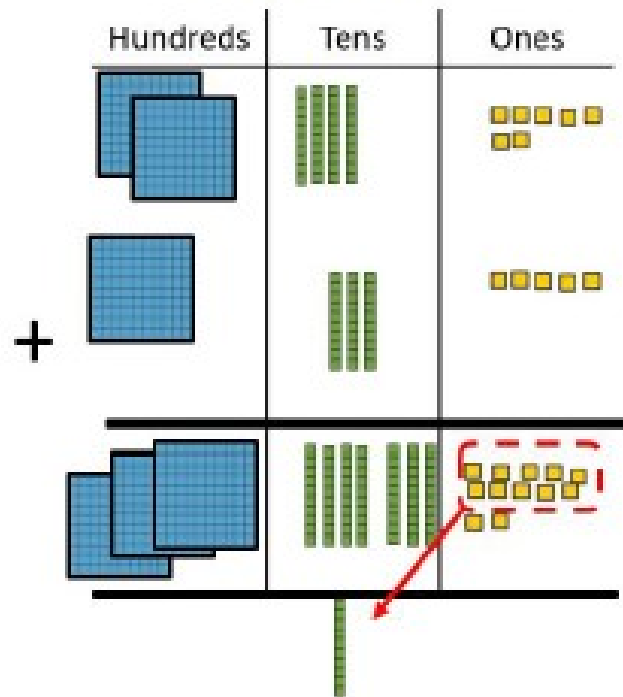
Children are taught to see the quantities first with manipulatives (concrete), then drawing (pictorial), then numbers (abstract).



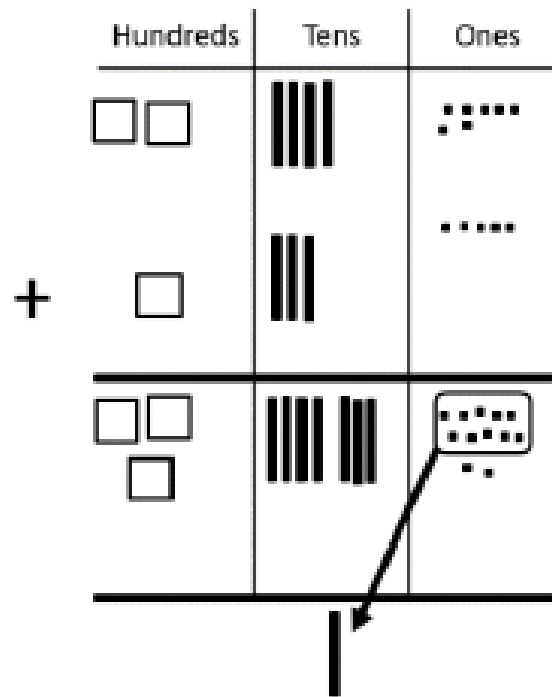
Teaching effective strategies: Year 3

247 + 135 Developing column addition.
Regrouping (language has changed)

Concrete



Pictorial

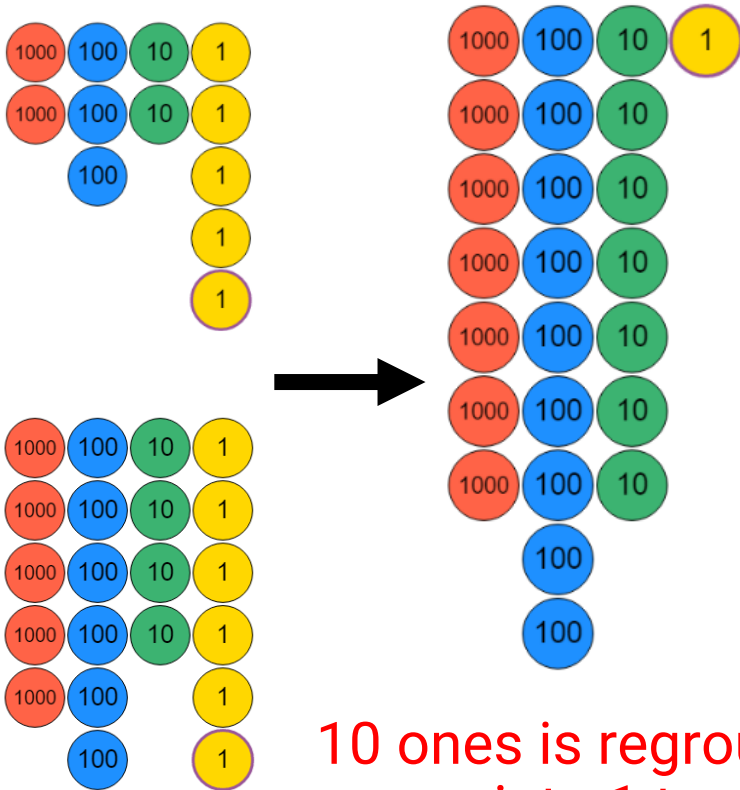


$$\begin{array}{r} 247 \\ + 135 \\ \hline 382 \\ 1 \end{array}$$

382	
247	135

Teaching effective strategies: Year 4

$$2325 + 5646$$



10 ones is regrouped into 1 ten.

Column addition

$$\begin{array}{r} 2325 \\ 5646 \\ + 7971 \\ \hline \end{array}$$

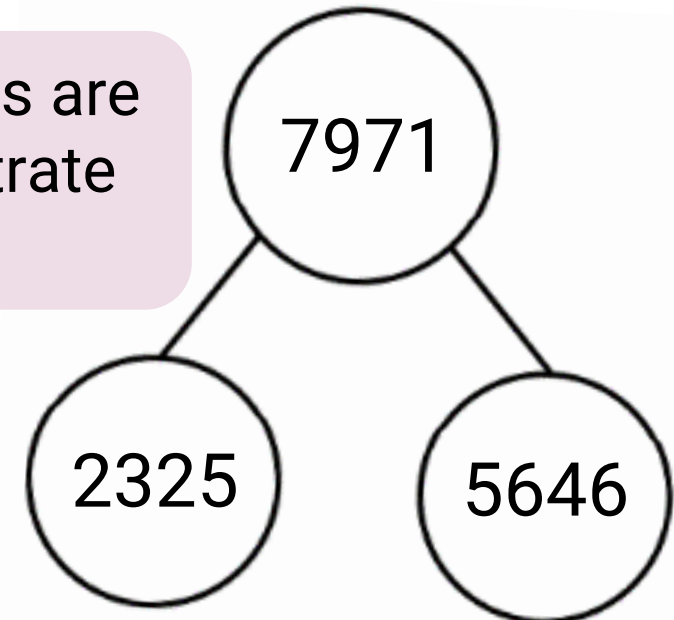
5646	2325
7971	

First we would estimate the answer!

$$2327 + 5646 \approx 7900$$

(rounded to nearest 100)

Part-whole models are used to demonstrate the inverse



Teaching effective strategies: Year 5 and 6

More rehearsal of column addition with larger numbers, decimal numbers, money and measures, and more complex problem solving.

Adam has a bag of fruit that weighs **1.25 kilograms**.



He takes out a banana. Now the bag of fruit weighs **1.1 kg**.

Next, he takes out an orange. Now the bag weighs **920 g**.

How much **more** does the orange weigh than the banana?

Introduction to algebra (year 6)

$$\triangle + \square = 1,200$$

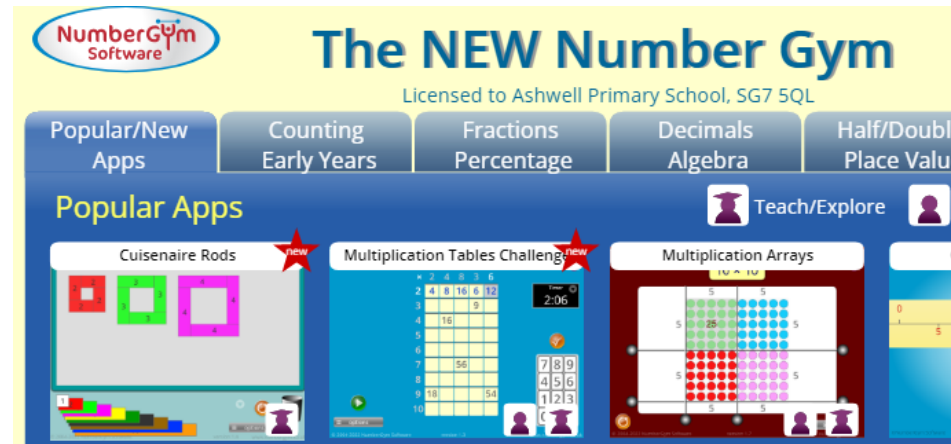
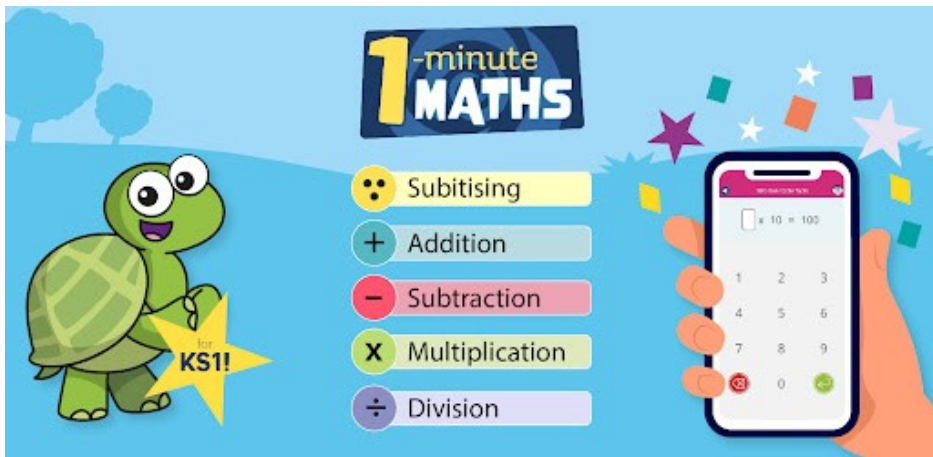
$$\triangle + \square + \square = 1,900$$

$$\square + \triangle + \triangle =$$

Children are encouraged to estimate first and check their answer using a mental method.

How you can help at home: Maths online

- Numbergym.co.uk (username Ashwell, password silver)
- TT Rockstars and Numbots
- Hit the Button (topmarks.co.uk)
- White Rose Maths free app (1-Minute Maths)





A focus on

Times Tables

Times tables

Year 1:

- count in multiples of twos, fives and tens
- solve simple multiplication and division using objects, pictures and arrays with support

Year 2:

- count in steps of 2, 3, 5 and 10
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables

Year 3:

- count from 0 in multiples of 4, 8, 50 and 100
- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Year 4:

- count in multiples of 6, 7, 9, 25 and 1000
- recall multiplication and division facts for multiplication tables up to 12×12

Multiplication and counting

Speaking Frame - Counting in Multiples

We are using _____ to count in multiples of

The multiple of is

This could also be + + + ...

groups of is

This is also x =



Learning a times table



$$1 \times 3 = 3$$

1 group of 3 is
worth 3



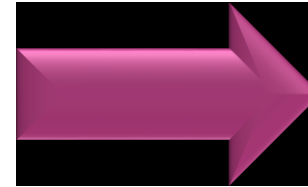
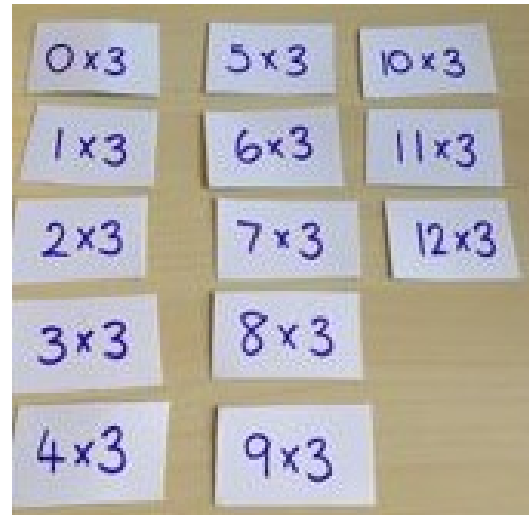
$$4 \times 3 = 12$$

4 groups of 3 is
worth 12

1, 2, 3,
4, 5, 6,
7, 8, 9,
10, 11, **12...**

Learning a times table

$1 \times 3 = 3$
 $2 \times 3 = 6$
 $3 \times 3 = 9$
 $4 \times 3 = 12$
 $5 \times 3 = 15$
 $6 \times 3 = 18$
 $7 \times 3 = 21$
 $8 \times 3 = 24$
 $9 \times 3 = 27$
 $10 \times 3 = 30$
 $11 \times 3 = 33$
 $12 \times 3 = 36$



Time to visit the class or classes!

- Visit classroom(s) between 9:30 and 10:00
- Watch maths activities and ask your child what they are learning
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Thank you!

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