KS2
Maths Parents Workshop

Supporting your child in Maths

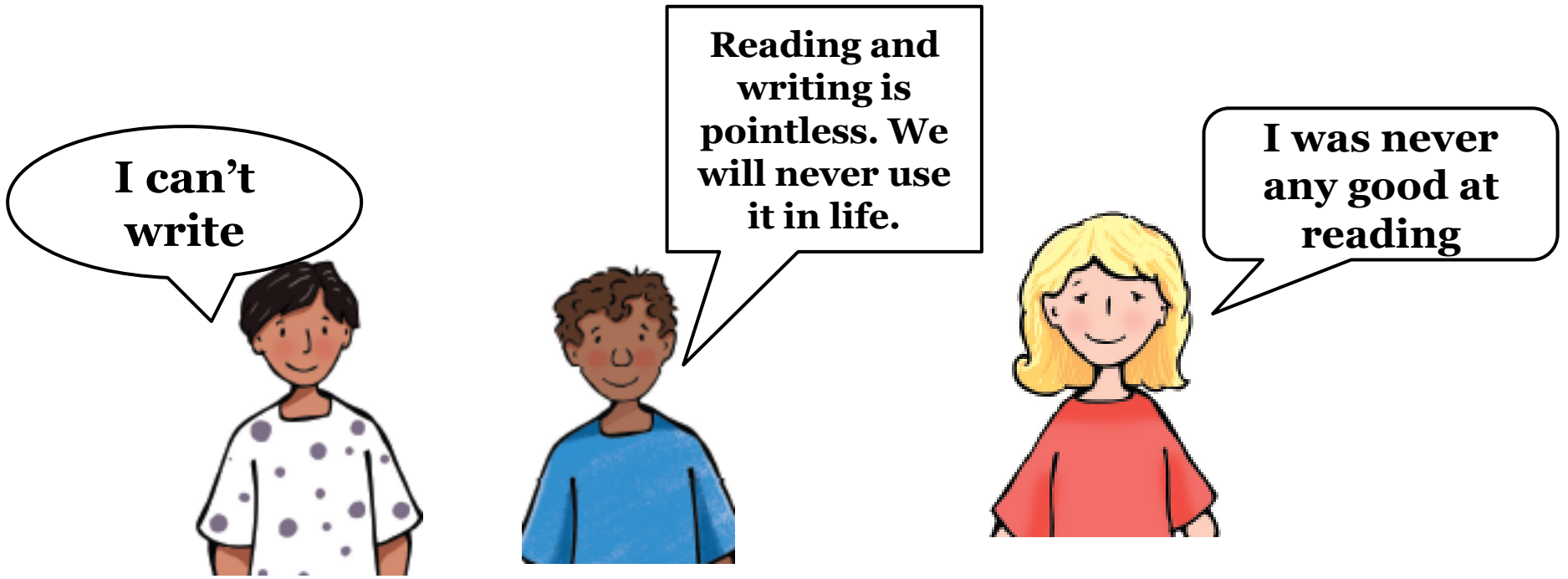
Wednesday 12th November

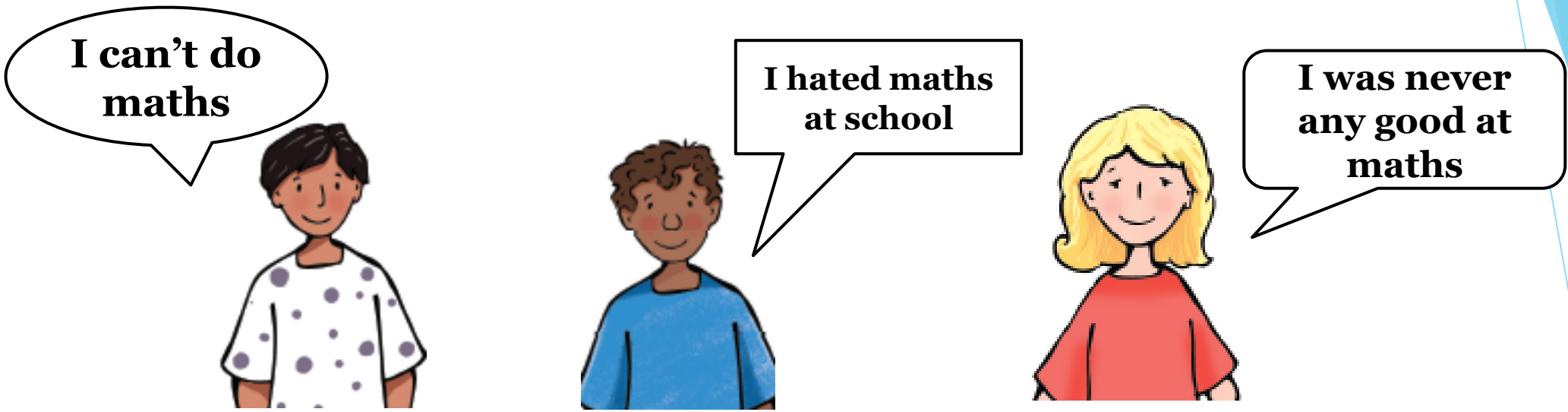
Please take some time to explore some of the physical resources on the tables whilst you wait for the workshop to begin. These are regularly used in all classrooms across the school.

Mrs H. Mistry and Miss R.Willmott

Aims:

- Identify the impact of attitudes towards Maths
- Look at National Curriculum objectives for KS2
- Understand how Maths is taught at Cannon Lane
- Exploring some of the strategies covered within school
- Exploring the ways you can support your child in Maths at home


I can't write
Reading and writing is pointless. We will never use it in life.
I was never any good at reading


I can't do maths
I hated maths at school
I was never any good at maths
...it's ok to be rubbish at maths
...maths isn't important

National Curriculum

Year 3	Year 4
Number and Place Value (up to 1,000) Addition and Subtraction Multiplication and Division (3, 4, 8s) Fractions Measurement Geometry (properties of shapes, position and direction) Statistics	Number and Place Value (beyond 1,000) Addition and Subtraction Multiplication and Division (up to 12x12) Fractions (**including decimals)** Measurement Geometry (properties of shapes, position and direction) Statistics
	Decimals (2 of 5) - count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 - recognise and write decimal equivalents of any number of tenths or hundreds

https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study

National Curriculum

Year 5	Year 6
Number and Place Value Addition and Subtraction Multiplication and Division Fractions (including decimals and **percentages**) Measurement Geometry (properties of shapes, position and direction) Statistics	Number and Place Value Addition and Subtraction Multiplication and Division Fractions (including decimals and percentages) **Ratio and Proportion** **Algebra** Measurement Geometry (properties of shapes, position and direction) Statistics
Percentages Objective - recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction	**Ratio and Proportion (2 of 4)** - solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison - solve problems involving similar shapes where the scale factor is known or can be found **Algebra Objective (1 of 4)** - express missing number problems algebraically

https://www.cannonlaneprimary.org/progression-map/

Maths at Cannon Lane

- Our aim is to teach children the mathematical skills and knowledge so they are confident to go out and use these in real life contexts.

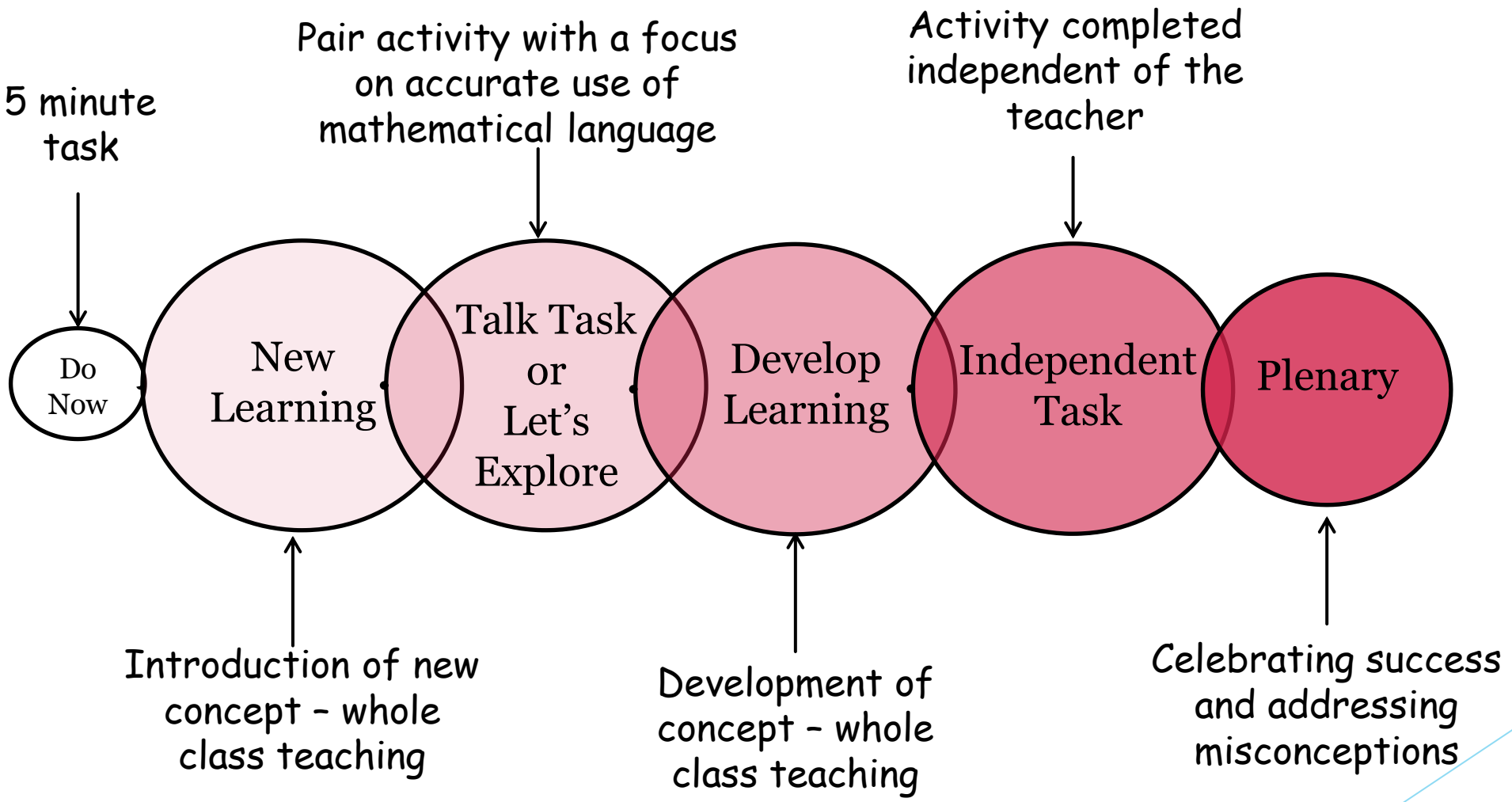
- Within each year group, we give the children the knowledge and skills needed for the next year group or phase of learning.

- Mathematics Mastery by Ark Curriculum Plus
  - Whole school approach – Reception to Year 6
  - Success for all - 'We need to believe all pupils can learn maths and we need to help them do so."

Maths at Cannon Lane

- Lessons aims to provide children with a deeper knowledge and understanding
  - Six-part structure
- Support is given within the lesson, to children who need help to grasp new concepts and children who need more challenge.
- Maths is taught daily throughout the school.
- Children use a variety of resources and pictures to support their deeper understanding.
- We want our children to learn in a safe environment, where they are resilient and not afraid to make mistakes.

Lesson Structure



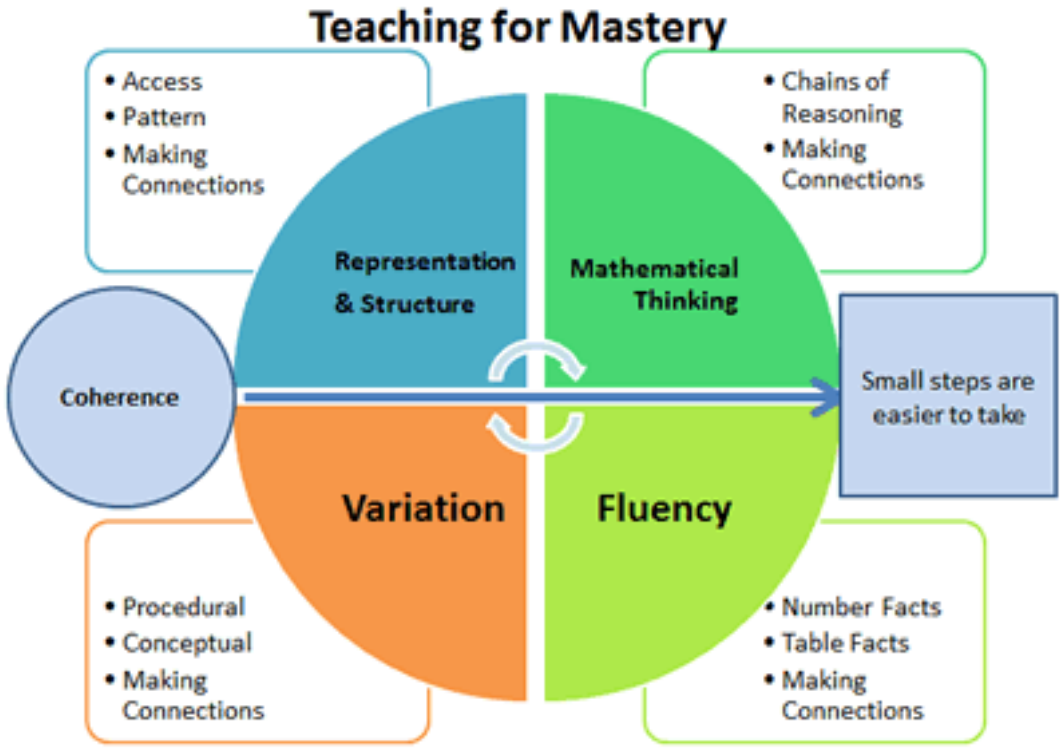
Maths at Cannon Lane

Year 3	**Number and Place Value:** Number sense **Addition and Subtraction:** exploring calculation strategies **Statistics:** Graphs **Addition and subtraction** **Measurement:** Length and Perimeter	**Multiplication and division** **Multiplication and division:** Calculating with multiplication and division **Measurement:** Time **Fractions**	**Geometry:** Angles and shape **Measurement** **Multiplication and division**: Applying multiplicative thinking **Addition and subtraction**: Exploring calculations strategies **Number and Place value**
Year 4	**Number and Place value:** Reasoning with large numbers **Addition and subtraction** **Multiplication and division** **Statistics:** Discrete and continuous data	**Multiplication and division:** Calculating with multiplication and division **Fractions** **Measurement:** Time **Fractions, including decimals:** Decimals **Measurement**: Area and perimeter	**Measurement:** Solving measures and money problems **Geometry:** Shape and symmetry **Geometry:** Position and direction **Geometry:** Reasoning with pattern and sequences **Geometry:** 3D Shape
Year 5	**Number and Place Value:** Reasoning with large whole intergers **Addition and subtraction:** Integer addition and subtraction **Statistics**: Line graphs and timetables **Multiplication and division** **Measurement:** Perimeter and area	**Fractions, including decimals** **Geometry:** Angles **Fractions, including percentages** **Geometry:** Transformations	**Measurement:** Converting units of measure **Number:** Calculating with whole numbers and decimals **Geometry**: 2D and 3D shape **Measurement**: Volume Problem solving
Year 6	**Number:** Integers and decimals **Multiplication and division** **Addition and subtraction** Calculation problems **Fractions, including decimals** **Fraction, including decimals and percentages** (with equivalences)	**Number:** Decimals and measures **Geometry:** Missing angles and length **Geometry:** Co-ordinates and shapes **Statistics** **Ratio and Proportion** problems	**Measurement:** Finance and money Consolidation investigations **Ratio and proportions** Mathematical concepts in Art

Mastery

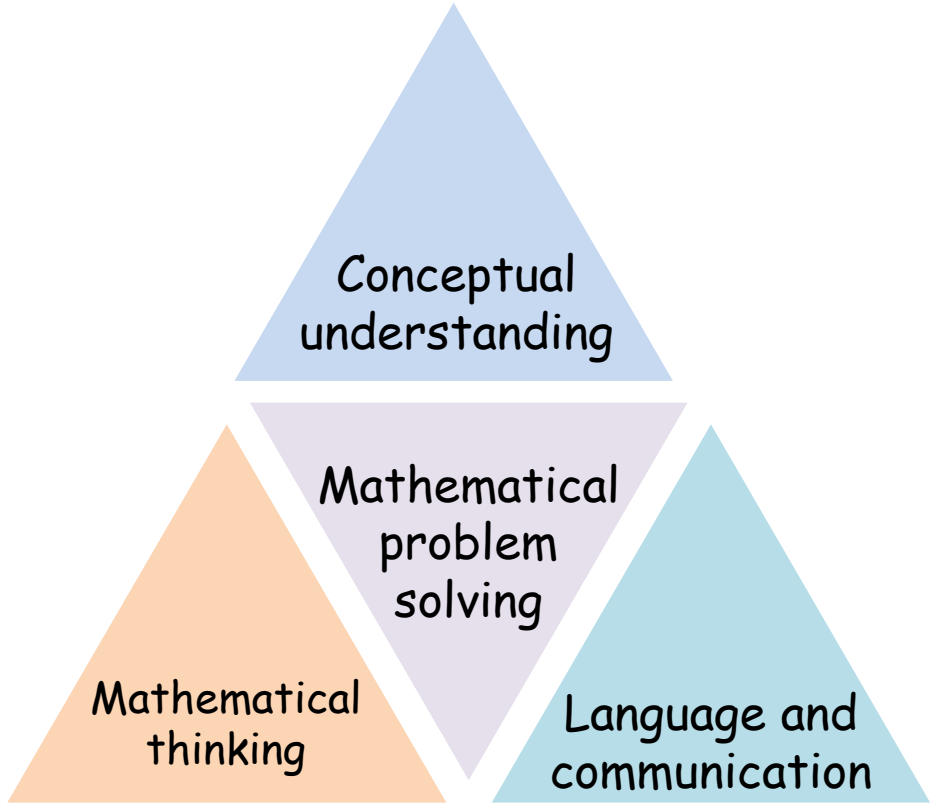
The focus is on depth – **not acceleration**, so that all children have the chance to embed their learning.

It is really important that learning is not superficial. A child might be able to 'do' a particular method, but can they explain how it works and why it is efficient?



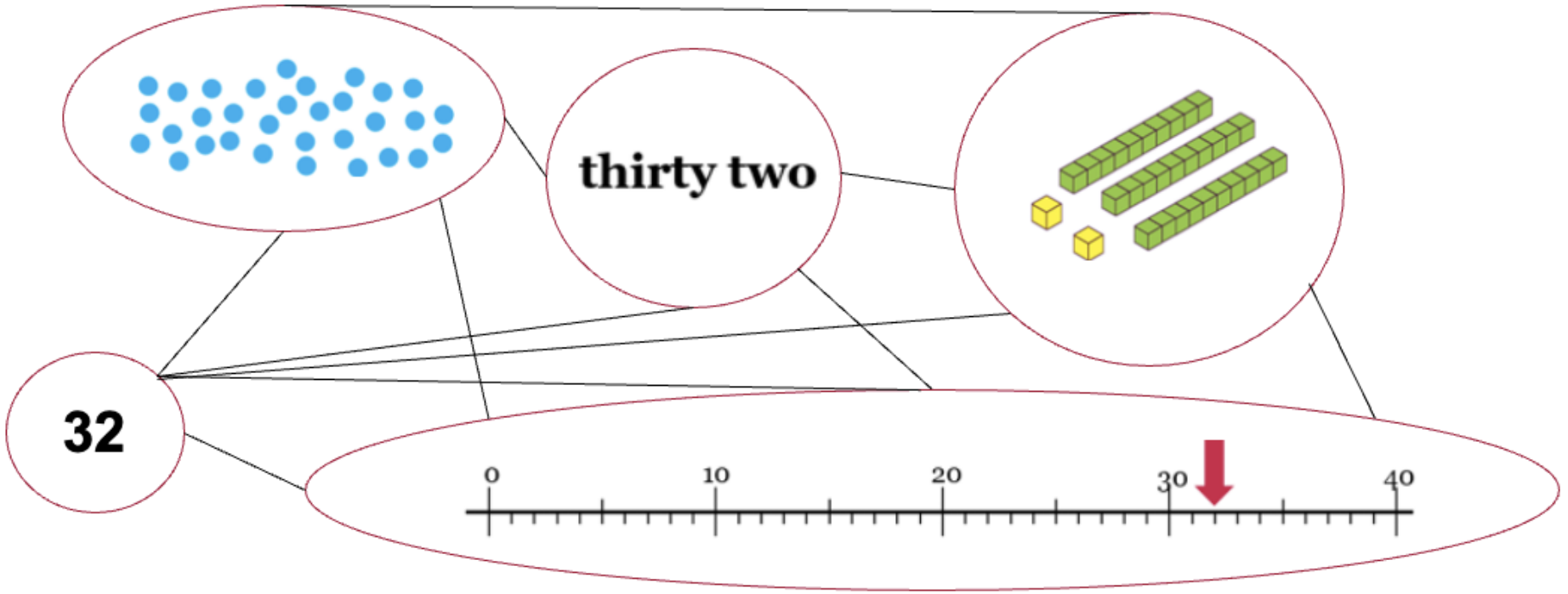
Dimensions of Depth.

- *Focused on four aspects called the 'Dimensions of Depth'.*



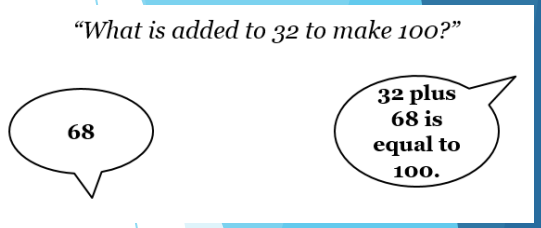
Conceptual Understanding

- Representing a concept in different ways
- Making connections between each way to deepen their understanding.



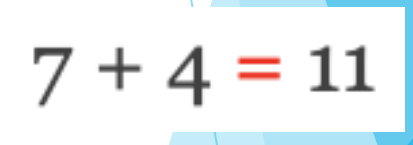
Language and Communication

- Key vocabulary is shared at the beginning of the lesson and it is used consistently throughout the lesson by all adults.
- Language should be modelled in full sentences and pupils should always respond using full sentences.

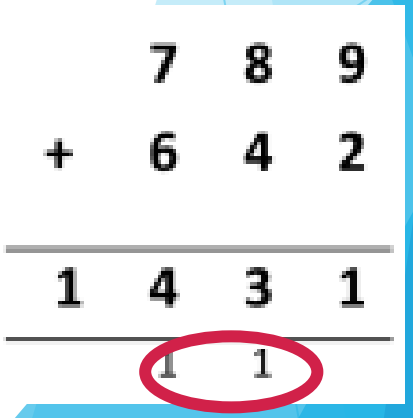


Focused updates:

…is equals to / makes / equals?



…borrowing / carrying / knocking next door / exchanging / regrouping?

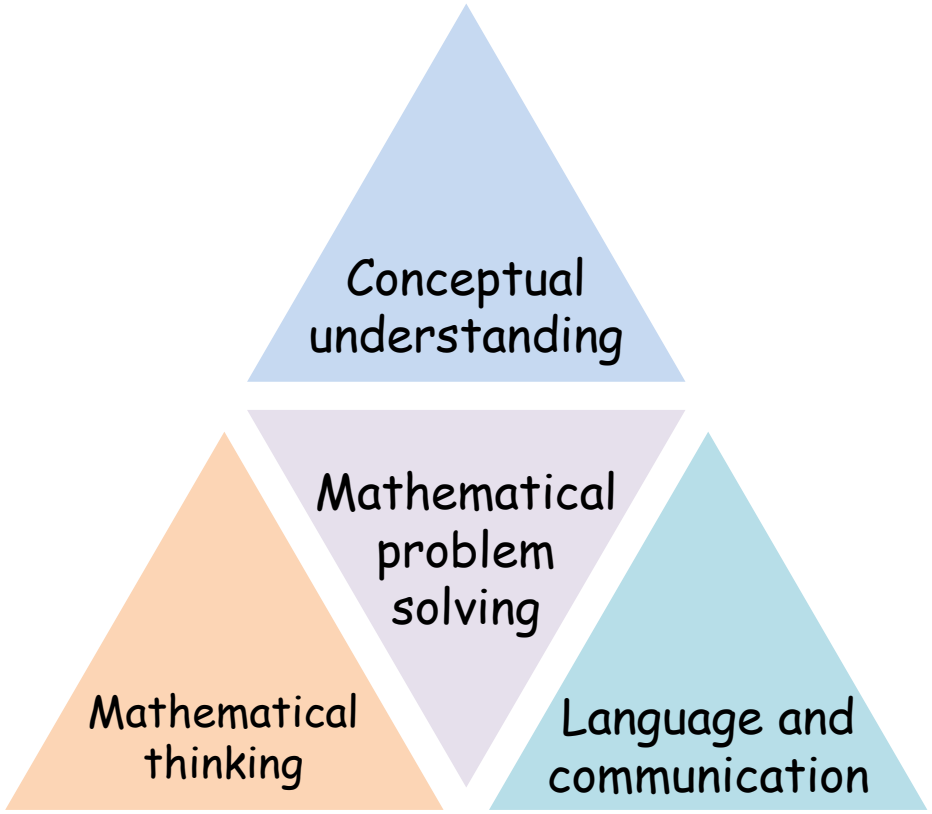


Mathematical Thinking

Questioning stems:

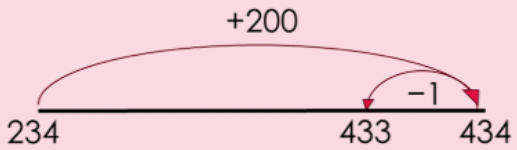
- Tell me what is wrong with…
- Is it always, sometimes, never true?
- Explain why…?
- What if … I changed this number…
- What if … I did it this way…
- How do you know? Tell me… Show me…
- Does this always happen?

Deep Dive into Mathematics Mastery

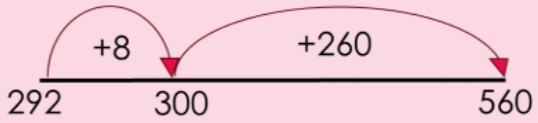


What is the most efficient strategies to calculate 39 + 54?

round and adjust



partitioning



known facts

If I know …

4 + 3 = 7

derived facts

Then I know…

40,000 + 30,000 = 70,000

Round 2346 to the nearest 100

Write your answer on a whiteboard.

Prove it.

Find the sum of 34 x 100

Show your understanding on a place value chart.

We need to remember to show the maths rather than 'cheat' and drop or add zeros.

Fractions – Key Knowledge

1 <- **Numerator**: shows how many parts we have.

<- **Vinculum** – the line between the numerator and denominator

2 <- **Denominator**: shows how many parts equals a whole

Proper fraction: the numerator is less than the denominator.

Improper fraction: the numerator is greater than the denominator.

Mixed number: a whole number and a proper fraction combined.

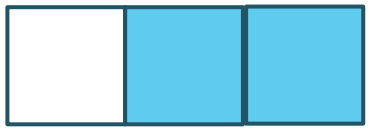
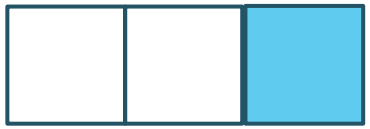
Unit fraction; a fraction with a numerator of 1.

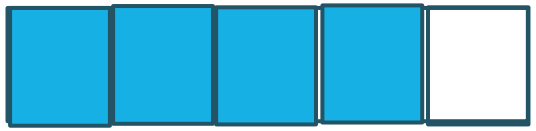
Non-unit fraction: a fraction with a numerator more than 1.

Fractions

Comparing fractions – All year groups

Compare the fractions, using the symbols < > =

$\frac{1}{3}$  > $\frac{2}{3}$ 

$\frac{2}{4}$  < $\frac{4}{5}$ 

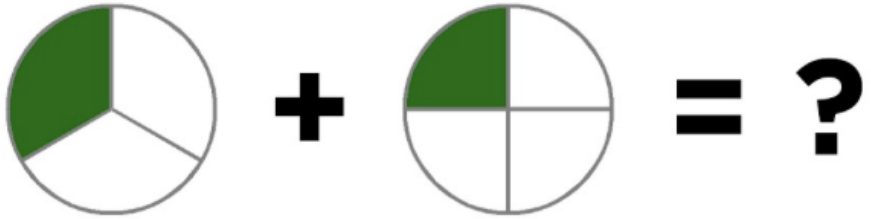
Fractions

Adding and subtracting fractions with the same denominator – Year 3/4

Adding and subtracting fractions with denominators that are multiples of the same numbers – Year 5

Adding and subtracting fractions with different denominators and mixed numbers – Year 6

$$\frac{1}{3} + \frac{1}{4}$$



Year 4 - Multiplication Test

This is a statutory check for all pupils in Year 4.

- Children are tested on their multiplication tables up to 12 x 12

- **Twenty-five questions** with **six seconds** to answer each question and **three seconds** between questions

- Resources
  - Times Table Rockstars – Soundcheck
  - https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check

Year 6 SATs

The Key Stage 2 mathematics test comprises of:

- Paper 1: arithmetic (**40 marks**)
  Time: 30 minutes

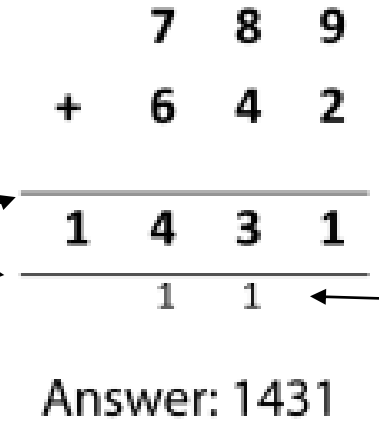
- Paper 2: reasoning (**35 marks**)
  Time: 40 minutes

- Paper 3: reasoning (**35 marks**)
  Time: 40 minutes

The following slides are the layout for formal written methods that we will be using in school.

Addition

789 + 642 becomes



Answer: 1431

A ruler should be used to draw these lines.

When adding numbers, number that need regrouping go underneath the bottom line.

Subtraction

874 – 523 becomes

$$\begin{array}{r} 8\ 7\ 4 \\ -\ 5\ 2\ 3 \\ \hline 3\ 5\ 1 \\ \hline \end{array}$$

A ruler should be used to draw these lines.

Answer: 351

932 – 457 becomes

$$\begin{array}{r} {\scriptstyle 8\ \ 12\ \ 1} \\ 9\ \ 3\ \ 2 \\ -\ 4\ 5\ 7 \\ \hline 4\ 7\ 5 \\ \hline \end{array}$$

A ruler should be used to draw these lines.

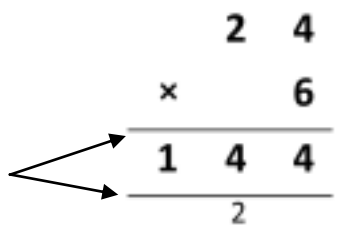
When exchanging numbers, a line is draw through the old number and the new number is written above to the left.

Answer: 475

Multiplication

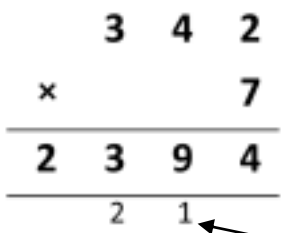
A ruler should be used to draw these lines.

24 × 6 becomes



Answer: 144

342 × 7 becomes



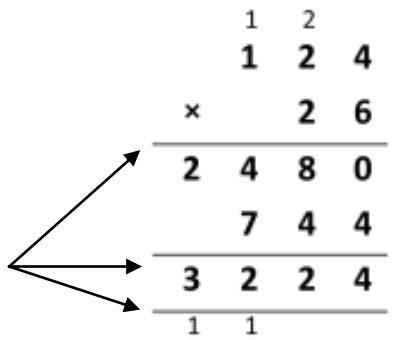
Answer: 2394

Similar to adding, numbers that need regrouping go underneath the bottom line.

Multiplication

A ruler should be used to draw these lines.

124 × 26 becomes



Answer: 3224

124 × 26 becomes



Answer: 3224

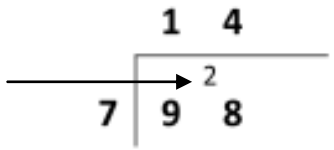
When multiplying, the numbers that need regrouping go above the equation.

When adding to get the final total, numbers that need regrouping go underneath the bottom line.

Division

When dividing, numbers that need regrouping are carried over to the next number.

98 ÷ 7 becomes



Answer: 14

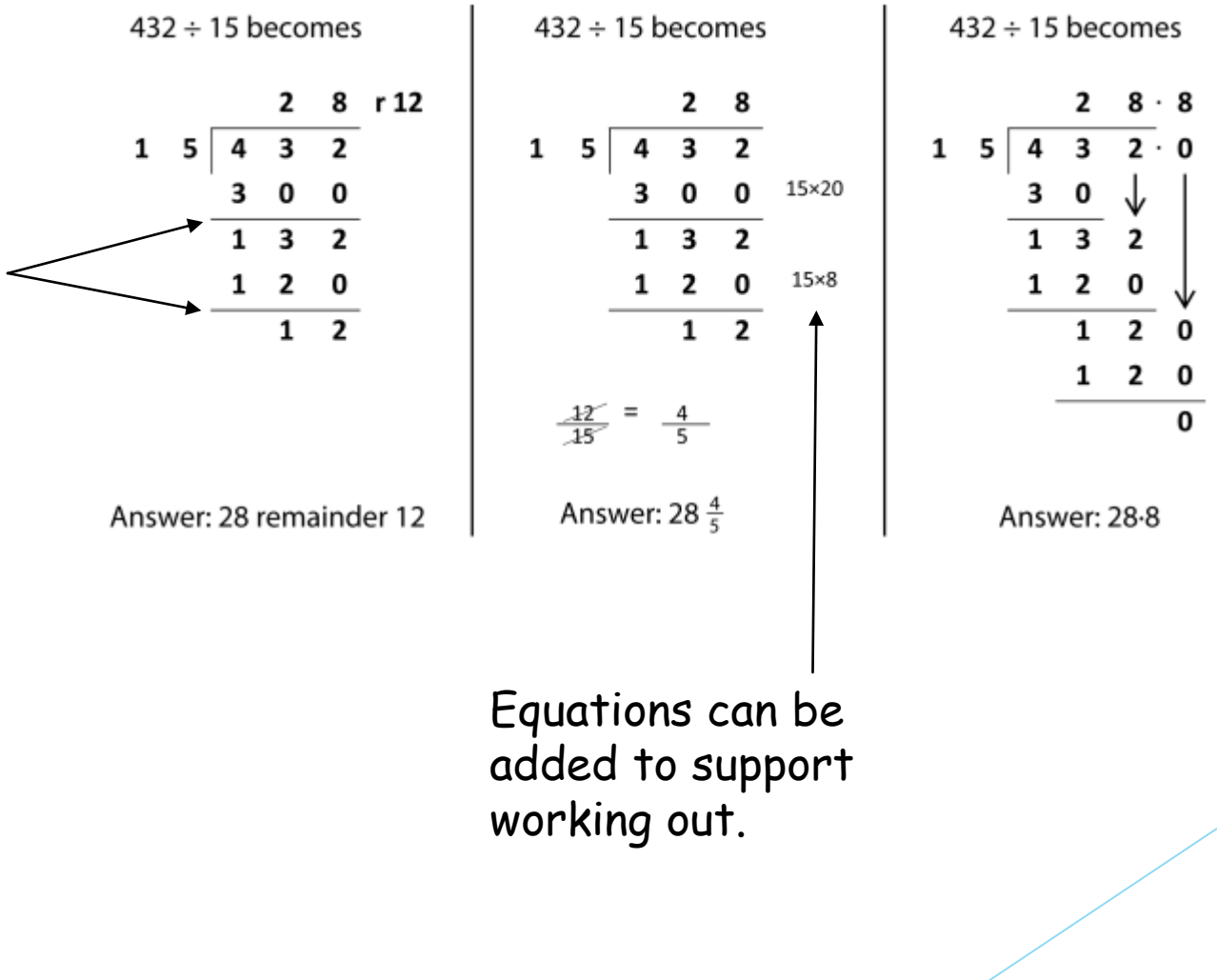
432 ÷ 5 becomes



Answer: 86 remainder 2

Division

A ruler should be used to draw these lines.



Equations can be added to support working out.

Ways to help at home

Make sure it's fun.

Make it practical.

Give lots of encouragement.

Discuss strategies used at home – remember calculations maybe different from when you remember them. Get them to teach you.

Cook together to help read scale

Turn over 2 playing cards and ask your child to multiply, add, subtract or divide the numbers.

Play bingo for any topic.

When there are sales, encourage your child to calculate the percentage of the full price.

Read a bus or train timetable together and calculate the time it will take to get to your destination.

Apps and Websites

Cannon Lane Website

https://www.cannonlaneprimary.org/rolling-numbers/

Useful websites:

http://www.familymathstoolkit.org.uk/

https://www.lgfl.net/learning-resources/summary-page/maths-at-home

http://www.mad4maths.com/parents/

http://www.bbc.co.uk/bitesize/ks2/maths/

https://www.youtube.com/watch?v=AuX7nPBqDts

https://parentsintouch.co.uk/Maths-word-problems

Apps:

Maths Roxx – fun way to learn times tables

Mr Thorne's Times table terra

Mr Thorne's divide and conquer

Thinking blocks – Singapore maths model

Let's do mental maths – won the innovation award

For your own understanding:

https://whiteroseeducation.com/parent-pupil-resources/maths/home-learning?year=year-5-new

https://www.thenational.academy/teachers/programmes/maths-primary-ks2/units

https://www.mathsisfun.com/definitions/


Any Questions

Thank you for listening and participating!

MATHEMATICS
is not about
numbers, equations,
computations, or
algorithms:
it is about
UNDERSTANDING.

Please complete the evaluation forms on your tables.