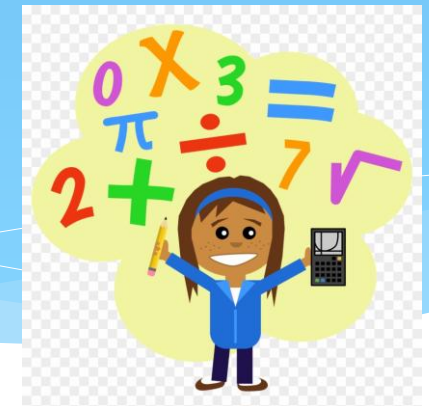


Welcome to our Maths workshop

Year 3 and Year 4





Our School Prayer

This is our school,
Let peace be found here.
Let the rooms be full of happiness.
Let love abide here,
Love for one another,
Love for God.
Let us remember,
That as many hands build a house,
So many hearts make a school.
Amen.





Session Aims

How is Maths taught at St Joseph's?

What does Maths look like in Year 3 and Year 4?

What does Maths look like in Year 3?

Consistently use the correct number formation (0-9).

To recognise the place value of each digit in a three-digit number (hundreds, tens and ones).

To read and write numbers up to 1,000

To add and subtract mentally and scaling these by 10 e.g. $6 + 3 = 9$, $60 + 30 = 90$.

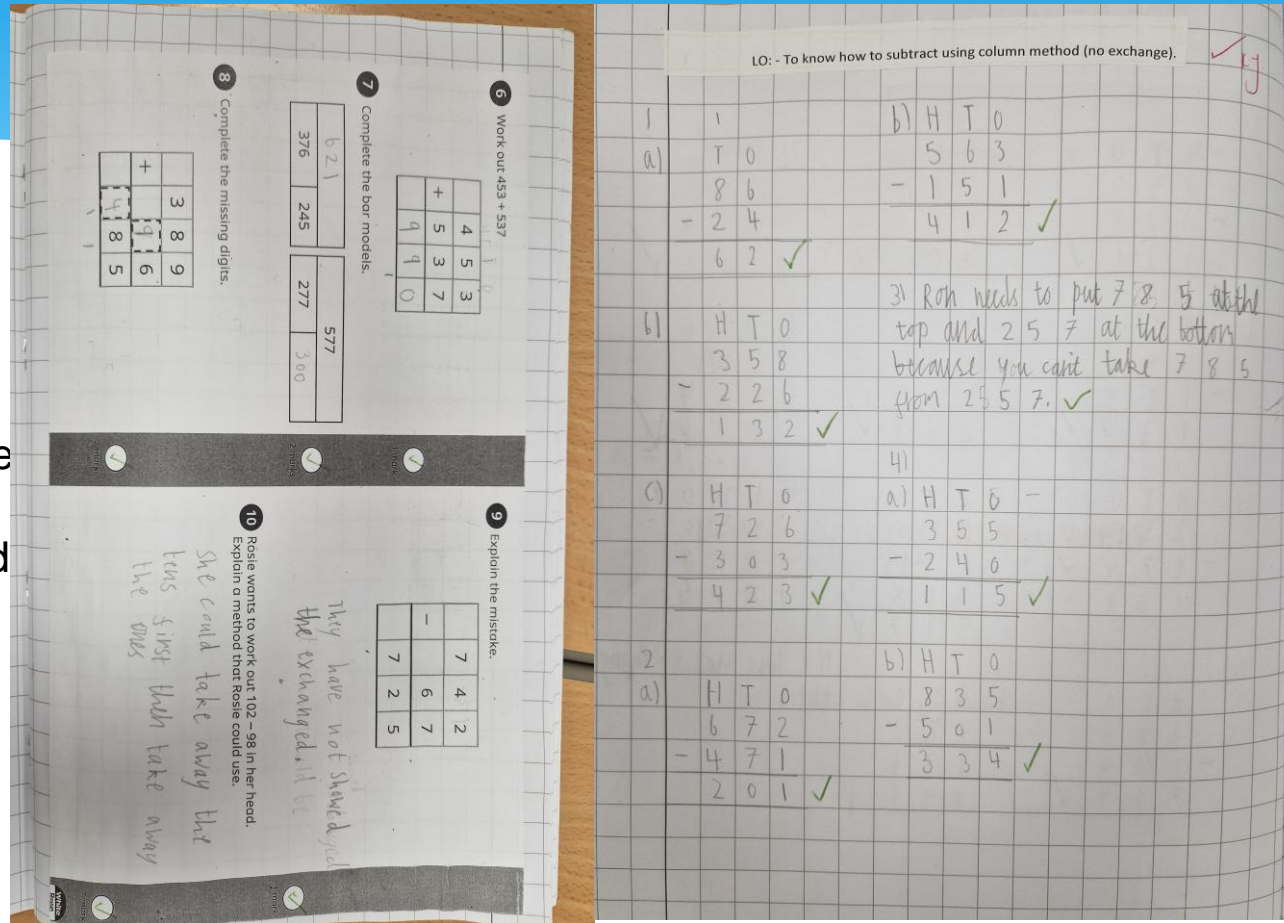
To understand the inverse relationship between add and subtract

To solve number and practical problems, including reasoning using my number knowledge.

To choose strategies to help me answer questions such as partitioning, number lines, counting on, counting back, bar models and eventually formal methods such as the column method.

To identify angles greater than or less than a right angle

To recall my 2, 5, 10s, 3, 4 and 8 times tables and related division facts.



The image shows two pages of handwritten student work on grid paper. The left page contains several problems and solutions:

- Problem 6:** Work out $453 + 537$. The student has written the numbers in a bar model and the sum is 1000.
- Problem 7:** Complete the bar models. The student has written the numbers in a bar model and the sum is 1000.
- Problem 8:** Complete the missing digits. The student has written the numbers in a bar model and the sum is 1000.
- Problem 9:** Explain the mistake. The student has written the numbers in a bar model and the sum is 1000.
- Problem 10:** Rosie wants to work out $102 - 98$ in her head. Explain a method that Rosie could use. The student has written the numbers in a bar model and the sum is 1000.

The right page shows a student's work on subtraction using the column method:

- LO:** To know how to subtract using column method (no exchange).
- Problem 1:** $86 - 24 = 62$
- Problem 2:** $358 - 226 = 132$
- Problem 3:** $726 - 303 = 423$
- Problem 4:** $672 - 471 = 201$
- Problem 5:** $563 - 151 = 412$
- Problem 6:** $355 - 240 = 115$
- Problem 7:** $835 - 501 = 334$

Handwritten notes include: "3) Roh needs to put 7 8 5 at the top and 2 5 7 at the bottom because you can't take 7 8 5 from 2 5 7." and "They have not shared the exchanged, it's the tens first then take away the ones."

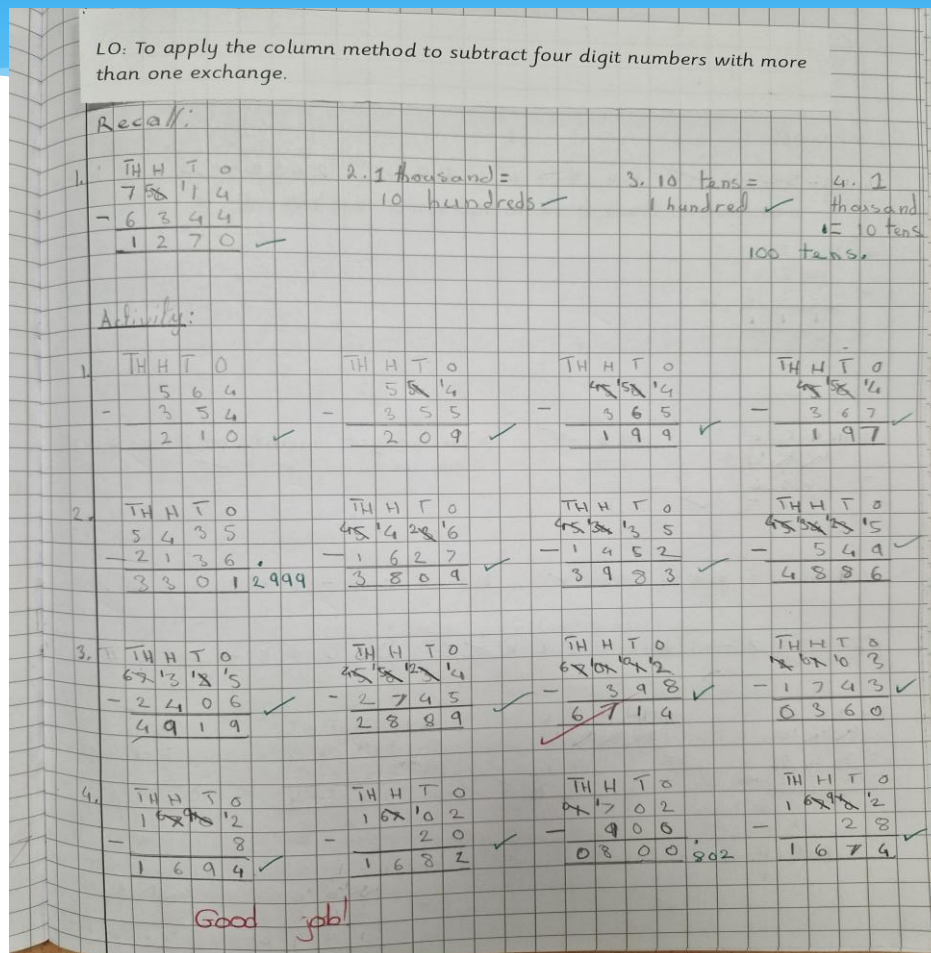
What does Maths look like in Year 4?

Find the perimeter of regular and irregular polygons

Begin to use expanded formal methods for addition and subtraction.

Have a secure understanding of number: confidently identifying the value of each digit in a 4 digit number E.g. 2378 the 3 represents 300.

To solve practical and number problems using reasoning to justify answers.



To confidently and securely know times tables facts, including the inverse up to 12x12

Solve addition and subtraction two-step problems deciding which operations and methods to use and why

Recognise common groups of equivalent fractions and finding the corresponding decimal.

Multiply two-digit and three-digit numbers by a one-digit number using formal written layout



Maths Mastery - What is it?



What is mastery?

- All children of all ages are capable of succeeding at mathematics
- Deep, long-term, secure and adaptable understanding of the subject
- Solid understanding that enables pupils to move on to more advanced material

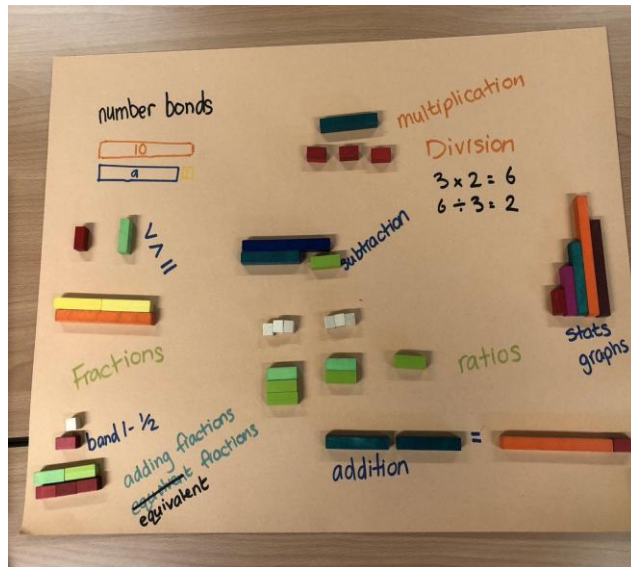
Concrete



Pictorial







Abstract



1 Work out the additions.

Use the bar models to help you.

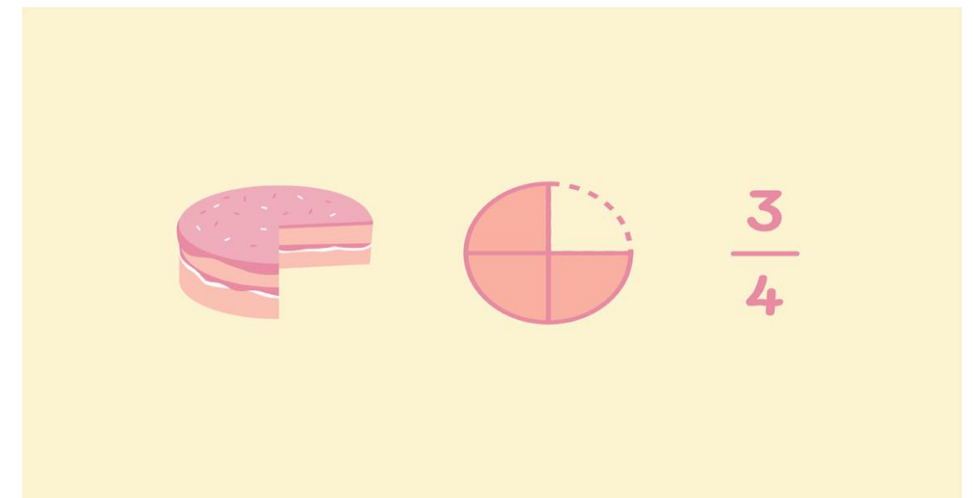
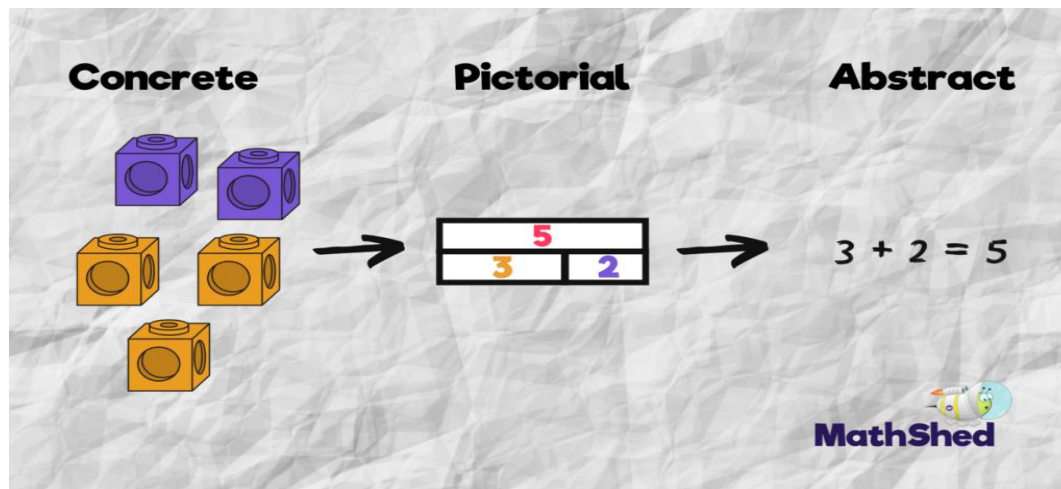
- a)  $\frac{1}{3} + \frac{1}{3}$
- b)  $\frac{1}{5} + \frac{1}{5}$
- c)  $\frac{1}{5} + \frac{2}{5}$
- d)  $\frac{1}{5} + \frac{3}{5}$

7 Work out the additions.

- a) $\frac{3}{8} + \frac{4}{8}$ d) $\frac{3}{103} + \frac{4}{103}$
- b) $\frac{3}{9} + \frac{4}{9}$ e) $\frac{5}{31} + \frac{9}{31}$
- c) $\frac{3}{29} + \frac{4}{29}$ f) $\frac{17}{111} + \frac{33}{111}$

Concrete, Pictorial & Abstract

The Concrete Pictorial Abstract (CPA) approach is a system of learning that uses physical and visual aids to build a child's understanding of abstract topics. Pupils are introduced to a new mathematical concept through the use of concrete resources (e.g. fruit, Dienes blocks etc).

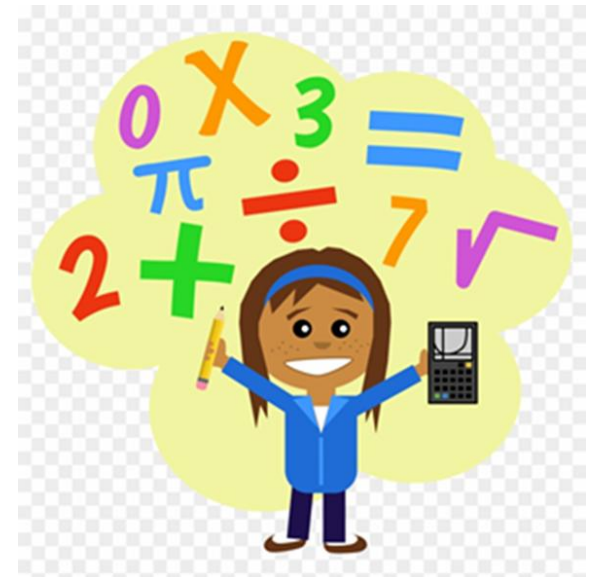




Questioning Children

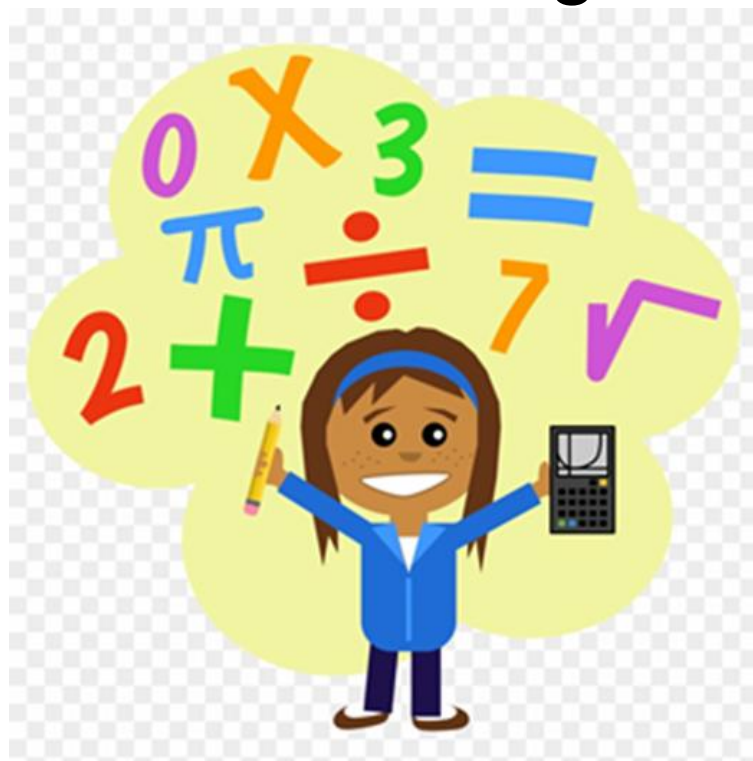
Good questions, and equally important, good listening, can help children make sense of Mathematics, build their confidence, and encourage mathematical thinking and communication. A good question opens up a problem and supports different ways of thinking about it. Some questions to try while helping a child might include:

- ☐ 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?



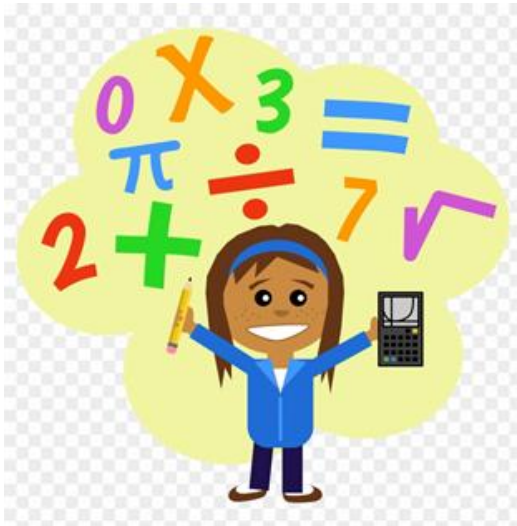
Reasoning and Problem Solving

- What is 'reasoning'?



Reasoning is...The action of thinking about something in a logical, sensible way.

Progression in Reasoning



Describing

Simply tells what they did

Explaining

Offers some reasons for what they did (may or may not be correct)

Convincing

Confident that their chain for reasoning is right (inductive reasoning)

Justifying

A correct logical argument that has a complete chain of reasoning

Proving

A watertight argument that is mathematically sound (deductive reasoning)

How to help at home

- Times tables understanding – TT Rockstars, MTC check, YouTube songs
- Number Bonds – Numbots, how do you form 10?
- Handling money
- Practising telling the time (analogue, digital, 24 hours)
- Recognising equivalencies – $\frac{1}{2}$ is the same as $\frac{2}{4}$
- Recognise basic 2D & 3D shapes.
- Key Instant Recall Facts – school website



**Thank you for listening.
Any questions?**

**We hope that you enjoy the
lessons this morning!
If there are any questions
about Maths, Miss Duffy & Mr
Drumm will be available in this
hall at 10am.**