



# Maths Parent Partnership Workshop

An insight into the teaching of Mathematics at  
St Christopher's the Hall.

Tuesday 7th November 2023

# Itinerary

- Welcome
- Introduction & Maths as part of STEM
- Maths as a broader subject
- Importance of multiplication
- MTCs
- Mathematics at St Christopher's the Hall: VF, RPS and Mastery > CPA Approach
- Calculation Policy
- Maths assessments (How we inform our teaching)
- Targeted Maths learning at St. Christopher's.
- Building upon learning.
- Lesson Time!

## **Maths as a broader subject:**

- Number
- Measures
- Geometry
- Statistics

# - Importance of multiplication

## **Why is it important to know times tables?**

Having a secure grasp of the basics of maths, including the fluent recall of times tables, is crucial for children's success in moving on to more complex maths.

Learning multiplication tables is a key part of maths education in many high-performing education systems such as those in Shanghai and Singapore.

# MTC

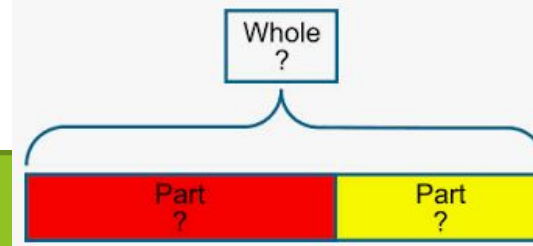
(Multiplication Tables Checks)

1/25 ◀ Back

Time left: 5

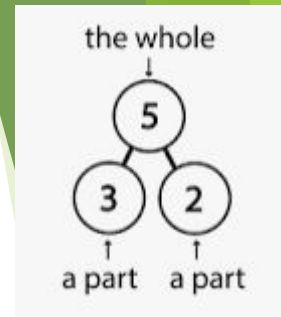
$6 \times 11 =$

1	2	3
4	5	6
7	8	9
C	0	Enter



# Mathematics at St Christopher's the Hall

- VF (Varied Fluency),
- RPS (Reasoning Problem Solving)
- Mastery



## CPS Approach

- C - Concrete,
- P - Pictorial,
- A - Abstract.

Objective and Strategy	Concrete	Pictorial	Abstract
<p>Combining two parts to make a whole: part-whole model</p> <p>Counting in near doubles</p>	<p>Use cubes to add two numbers together as a group or in a bar. (Some children may still need to use real objects)</p> <p>Use part-part whole model</p> <p>Sort people and objects into parts and understand the relationship with the whole.</p> <p><i>The parts are 2 and 4. The whole is 6.</i></p>	<p>Use pictures to add two numbers together as a group or in a bar.</p> <p>Children draw to represent the parts and understand the relationship with the whole.</p> <p><b>The Bar Model</b> will be continued from EYFS as a method to support problem solving involving addition, continuing with the concrete representations and moving onto using pictorial representations of objects.</p> <p>Some children will also move onto the abstract.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Pictorial (concrete)</p> </div> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>Abstract:</p> <p><i>The parts are 2 and 4. The whole is 6.</i></p> </div>	<p>Use the part-whole diagram as shown above to move into the abstract.</p> <p><math>4 + 3 = 7</math></p> <p><math>10 = 6 + 4</math></p> <p>Use a part-whole model to represent the numbers.</p> <p>Use a part-whole model alongside other representations to find number bonds.</p> <p>Make sure to include examples where one of the parts is zero.</p>

# Calculation Policy

<https://www.stchristophersthehall.org.uk/wp-content/uploads/2023/03/Calculation-policy-for-Maths-2023.pdf>

## KEY STAGE 2 – YEAR 3 & YEAR 4

In Years 3 and 4, children develop the basis of written methods by building their skills alongside a deep understanding of place value. They should use known addition/subtraction and multiplication/division facts to calculate efficiently and accurately, rather than relying on counting. Children use place value equipment to support their understanding, but not as a substitute for thinking.

**Key language:** partition, place value, tens, hundreds, thousands, column method, whole, part, equal groups, sharing, grouping, bar model

**Addition and subtraction:** In Year 3 especially, the column methods are built up gradually. Children will develop their understanding of how each stage of the calculation, including any exchanges, relates to place value. The example calculations chosen to introduce the stages of each method may often be more suited to a mental method. However, the examples and the progression of the steps have been chosen to help children develop their fluency in the process, alongside a deep understanding of the concepts and the numbers involved, so that they can apply these skills accurately and efficiently to later calculations. The class should be encouraged to compare mental and written methods for specific calculations, and children should be encouraged at every stage to make choices about which methods to apply.

In Year 4, the steps are shown without such fine detail, although children should continue to build their understanding with a secure basis in place value. In subtraction, children will need to develop their understanding of exchange as they may need to exchange across one or two columns.

By the end of Year 4, children should have developed fluency in column methods alongside a deep understanding, which will allow them to progress confidently in upper Key Stage 2.

**Multiplication and division:** Children build a solid grounding in times-tables, understanding the multiplication and division facts in tandem. As such, they should be as confident knowing that 35 divided by 7 is 5 as knowing that 5 times 7 is 35.

Children develop key skills to support multiplication methods: utilising, commutativity, and how to use partitioning effectively.

Utilising allows children to use known facts to multiply and divide multiples of 10 and 100 efficiently. Commutativity gives children flexibility in applying known facts to calculations and problem solving. An understanding of partitioning allows children to extend their skills to multiplying and dividing 2- and 3-digit numbers by a single digit.

Children develop column methods to support multiplications in these cases.

For successful division, children will need to make choices about how to partition. For example, to divide 423 by 3, it is effective to partition 423 into 300, 120 and 3, as these can be divided by 3 using known facts. Children will also need to understand the concept of remainder, in terms of a given calculation and in terms of the context of the problem.

**Fractions:** Children develop the key concept of equivalent fractions, and link this with multiplying and dividing the numerators and denominators, as well as exploring the visual concept through fractions of shapes. Children learn how to find a fraction of an amount and develop this with the aid of a bar model and other representations alongside.

In Year 3, children develop an understanding of how to add and subtract fractions with the same denominator and find complements to the whole. This is developed alongside an understanding of fractions as numbers, including fractions greater than 1. In Year 4, children begin to work with fractions greater than 1.

Decimals are introduced, as tenths in Year 3 and then as hundredths in Year 4. Children develop an understanding of decimals in terms of the relationship with fractions, with dividing by 10 and 100, and also with place value.

Multiplication- Year 2			
Objective and Strategy	Concrete	Pictorial	Abstract
<b>Doubling</b>	Model doubling using dienes and PV counters.  $40 + 12 = 52$	Draw pictures and representations to show how to double numbers.	Partition a number and then double each part before recombing it back together.  $20 + 12 = 32$
<b>Counting in multiples of 2, 3, 4, 5, 10 from 0 (repeated addition)</b>	Count the groups as children are skip counting, children may use their fingers as they are skip counting. Use bar models.  $5 + 5 + 5 + 5 + 5 + 5 + 5 = 40$ 	Number lines, counting sticks and bar models should be used to show representation of counting in multiples. 	Count in multiples of a number aloud. Write sequences with multiples of numbers. 0, 2, 4, 6, 8, 10 0, 3, 6, 9, 12, 15 0, 5, 10, 15, 20, 25, 30 $4 \times 3 = \square$

# Addition

## Addition- EYFS

Objectives	Concrete	Pictorial	Abstract

# Informing teaching

- Formative
  - Assessment for Learning (AfL) every lesson as part of our teaching approach
  - In class questioning.
- Summative
  - Termly assessment (on paper covering the units covered)
  - Mini assessment at the end of each unit (on paper every two/three weeks)



# Targeted Maths learning at St Christophers.

- 5 Maths lessons weekly
- Targeted adult support in class
- White Rose scheme of Learning
- Other high quality resources such as:-
  - Power Maths
  - Twinkl Mastery
  - Classroom Secrets
  - Times Table Rock Stars
  - SumDog
  - Testbase

# Building upon learning

Taking the Year 3 example, after the Addition and Subtraction block, pupils will revisit and practice these skills again in these blocks later in the year:

- Multiplication and Division
- Money
- Length and Perimeter
- Mass and Capacity

...and then they are built on and extended in Year 4 and beyond.

# Lesson time!

- If your child is currently in **Pre-School, Reception, Year 1 and Year 2**, please go to the **Upper Hall**.
- If your child is currently in **Year 3 or 4**, please go to **4M**.
- If your child is currently in **Year 5 or 6**, please go to **6C**.

**Thank you for listening, and we hope you enjoy the rest of the evening.**



Thank you

