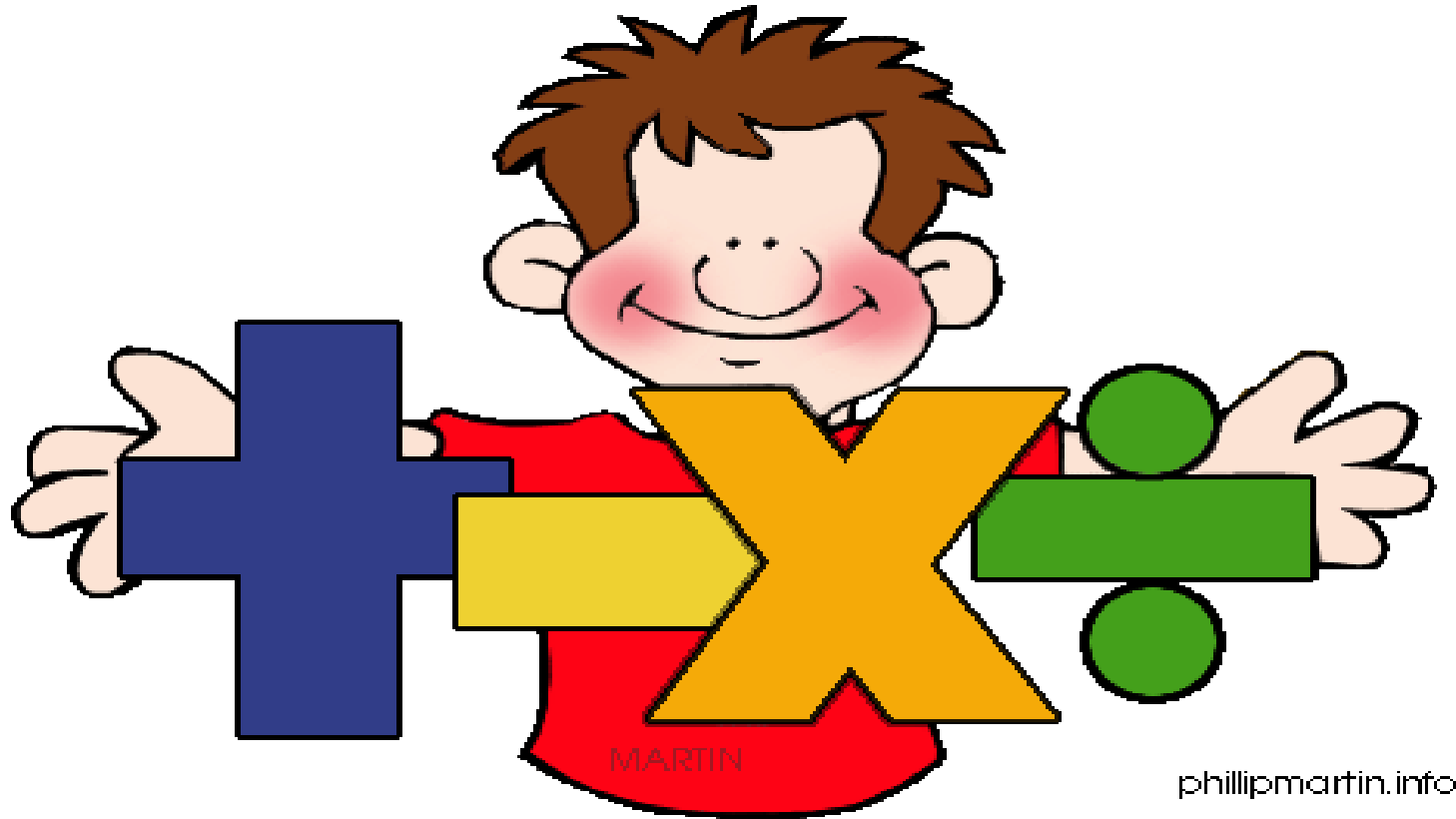


# Year 4 Maths Workshop

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Thursday 7th October, 2021



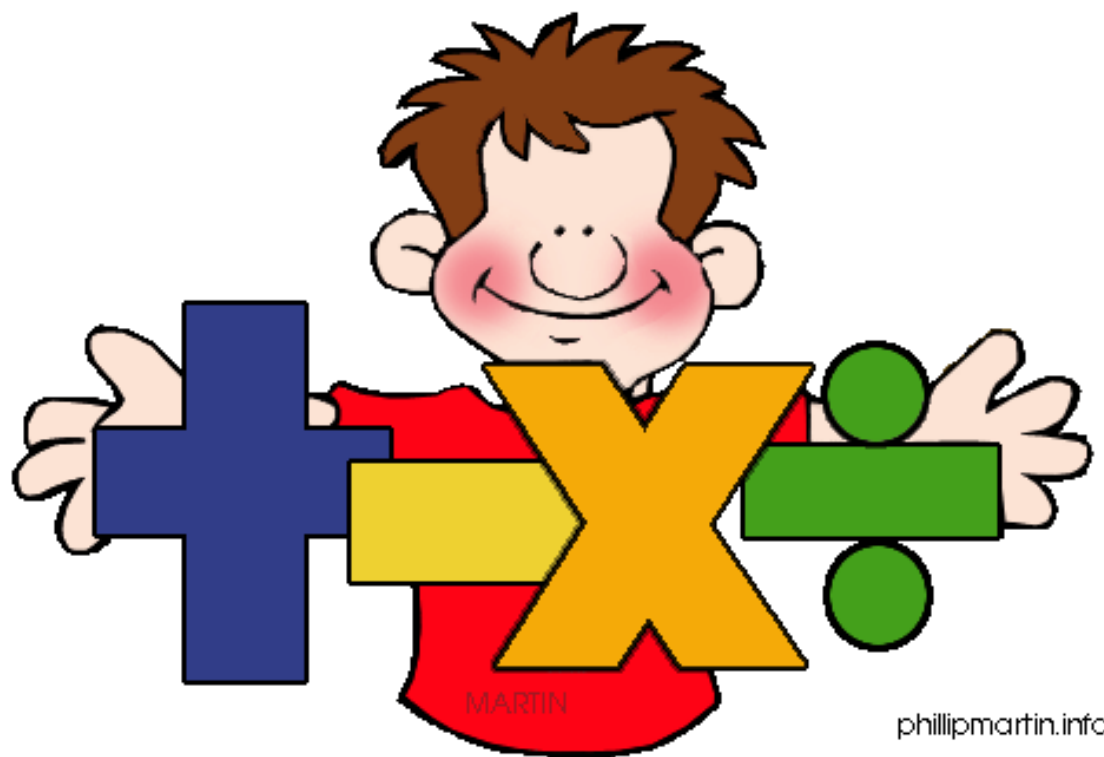
**POPE PAUL CATHOLIC PRIMARY SCHOOL**

*Learning in the light of Christ*

# Maths at Pope Paul

## Aims of this afternoon session

- To get an insight into how Maths is taught at Pope Paul.
- To take away some ideas to support your child(ren) at home.



## National Curriculum

- The national curriculum for mathematics aims to ensure that all pupils:
- become **fluent** in the fundamentals of mathematics,
- **reason mathematically**
- can **solve problems**

- At Pope Paul School, the mathematical learning that children are presented with enables them to respond to mathematics in many forms. Being a '**mathematician**' is not, simply, completing mathematical tasks: it is the ability to **formulate** and **choose** an appropriate, efficient response **which** utilises a true understanding of the problem or situation.
- Using **Essential Maths** as a key driver for our planning of mathematics at Pope Paul School, we aim to provide children with deeper knowledge and understanding of mathematical procedures and related concepts.
- As such teachers identify the key learning for each class and plan to secure these. Learning sequences are developmental and, depending on the concept, a good proportion of time will be spent securing key learning. Teachers will use their judgement about when it is the right time to move on.

# What does this look like at in our school?

Whole class direct teaching with clear and progressive modelling of concepts and procedures with sequences of varied examples.


The consistent use of core manipulatives and representations to support ability to access learning and to deepen children's understanding.

Rich mathematical talk is given high status and supported by the learning environment and teachers' questioning.

Emphasis placed on 'learning' through reasoning, developing multiple strategies and concepts towards understanding.


Pupils 'grappling' with learning mathematical concepts

Challenge for pupils grasping concepts quickly is provided through depth and breadth of experience.



We encourage **maths talk** and **collaborative learning** – they work together to master a concept.

~~Some people just can't do maths~~




By working hard, **all** **children can succeed**

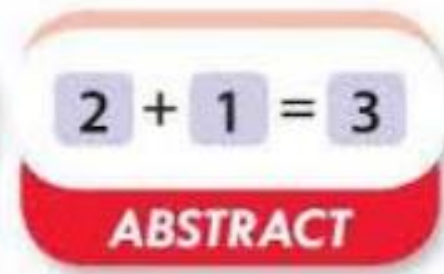
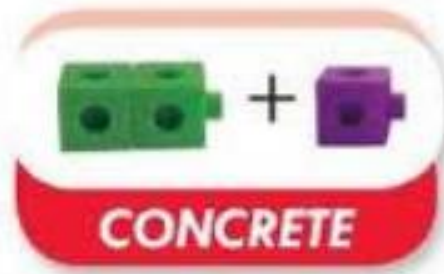
We provide time to **secure learning** before moving on

We encourage **intelligent practice** and use of key facts to 10.

Children are challenged through **depth** of experience



# CPA

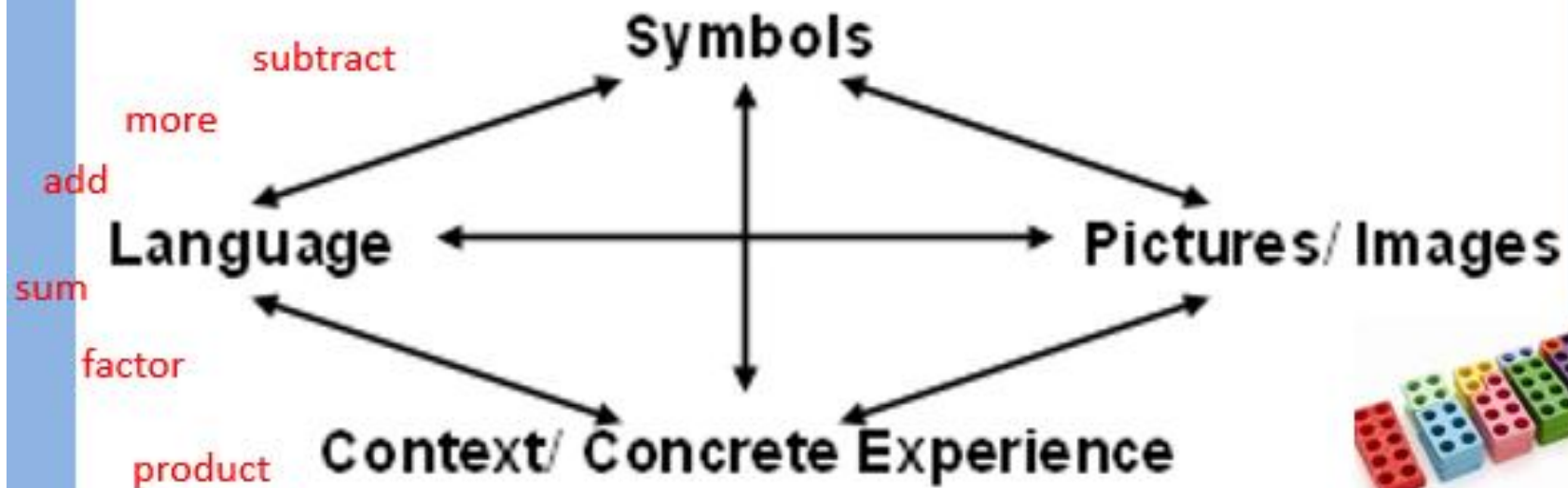


Moving freely between concrete materials, pictorial representations and abstract symbols.

1. The children are first introduced to an idea or skill using **objects**.
2. When the hands on experience is understood we relate them to representations such as a **diagram** or a **picture**.
3. The children represent their learning using **numbers** and **symbols**



= + x %



When we plan a Maths sequence we always ensure children are exposed to correct mathematical language, symbols (+ - = x), an image and a context.

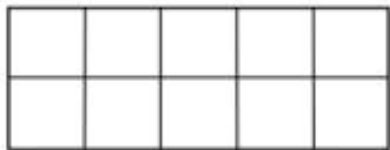


# Bringing concrete, pictorial and abstract together

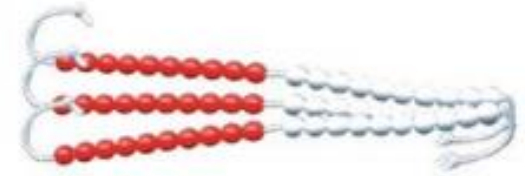
Have a go!

Try these calculations using some of the 'objects' on your table.

$$8 + 9$$



$$15 - 7$$



How could these be represented using pictures?

## The Year 4 Learner

### Working mathematically

By the end of year 4, children will apply their understanding of maths to solve a wide variety of problems with more than one step and be expected to prove their thinking through pictures, jottings and conversations. They will continue to make connections between different areas of maths and ask their own questions, working in an organised way to find solutions which help them identify common patterns or any errors more easily.

### Number

- **Counting and understanding numbers**

Children will be very familiar with numbers that have up to 4 digits and will be able to order and compare by showing them in different ways such as on a tape measure or using hands-on resources. Using their understanding of place value (how the value of each digit changes depending on its position in the number), children will be able to partition (break and make) numbers in different ways e.g.  $2345 = 2000$  and  $300$  and  $40$  and  $5$  but could also represent this as  $1000$  and  $1000$  and  $200$  and  $100$  and  $40$  and  $5$  or  $2000$  and  $200$  and  $145$ . They will work with numbers securely up to  $10,000$  and may begin to count beyond in  $1$ s,  $10$ s,  $100$ s and  $1000$ s. They will use this to help them find  $10$ ,  $100$  or  $1000$  more or less than any given number. They will multiply and divide whole numbers by  $10$  and  $100$  and understand that this changes the value of each digit rather than 'just adding a  $0$ '. They will develop their understanding to decimal hundredths, comparing and ordering these using contexts such as money. Children will also learn about the pattern to find any Roman

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# Learning Sequences, Speaking Frames, Destination Questions

## **Speaking Frame - Mental Strategy Reasoning**

**For the calculation ... I would use ... strategy because ...  
... strategy is efficient for this calculation because ...  
I know ... so I can apply it to ... because ...  
... strategy would be inefficient for this calculation because ...**

**Calculation strategies:**

**Place value - digit position, place value - use known facts, equal sum/difference, regrouping, one/zero effect, doubling/halving**

**Remember to talk about the individual digits within calculations when considering the efficiency of strategy.**

# Learning Sequences in Year 4

4LS1	Place Value – Order and Compare Numbers Beyond 1000
4LS2	Rounding, Estimation and Magnitude
4LS3	Securing Addition and Subtraction Mental Fluency
4LS4	Securing Formal Written Addition and Subtraction Fluency
4LS5	Counting in Multiples of 6, 7, 9, 25 and 1000
4LS6	Multiplication and Division Facts (Times Tables)

## Rounding, Estimation and Magnitude

### Steps within the Learning Sequence

Step 1: Estimate number magnitude

Step 2: Identify and estimate numbers using different representations

Step 3: Rounding numbers to the nearest ten, hundred and thousand

Step 4: Comparing and rounding numbers to the nearest ten, hundred and thousand

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## Rounding numbers to nearest ten, hundred or thousand

Pupils explore rounding numbers using their knowledge of number lines and then across a range of contexts. Teachers should use the approximately equal to symbol ( $\approx$ ) introduced in Year 3.

Use [handout\\_4LS2\\_step3\\_speaking\\_frame](#) to help structure pupils' responses.

### Round to the nearest ten

Round 43 to the nearest ten.



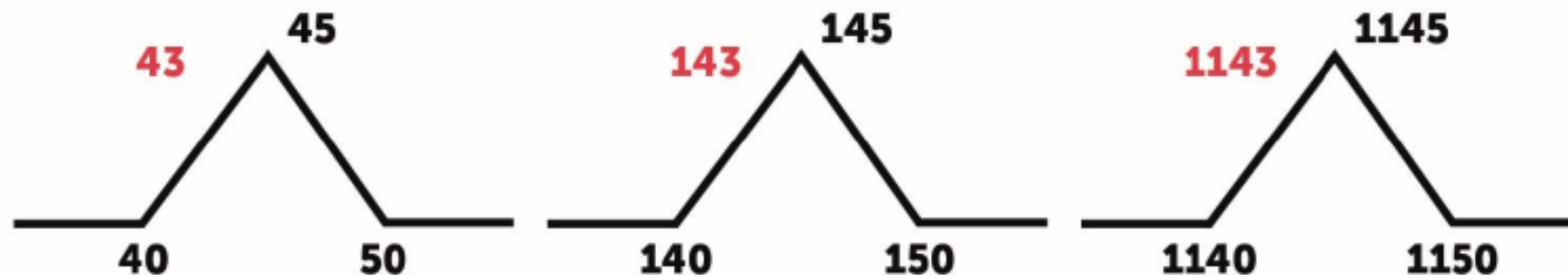
40 is the ten before and 50 is the ten after.  
43 is closer to 40 than 50.  
 $43 \approx 40$

Which tens are either side of 43?  
Label them on the number line.  
Where is 43? How do you know?

Ensure that the children are using benchmarks.

Keep the tens and ones the same but change other digits.

What's the same and what's different  
when rounding 43, 143 and 1143







## Rounding Numbers

5 or more,   
let it soar.

4 or less,   
let it rest.



Other activities to strengthen comparison and rounding could include:

- Roll four dice and create a 4-digit number asking pupils to round to the nearest ten, hundred and thousand.
- Ask pupils to create their own 4-digit numbers and round to the nearest ten, hundred and thousand.
- Ask pupils to solve rounding riddles.
- Ensure pupils can prove which number range would be included using equipment.
- Ask pupils to create rounding riddles of their own.

I am thinking of a number. It rounds to 6600 when rounded to nearest hundred. What numbers could I be thinking of?

Circle the numbers that will round to 3000 if rounded to nearest thousand.

- 3010   3801   3499   2501

2 

Complete this table:

Number	Rounded to nearest 10	Rounded to nearest 100	Rounded to nearest 1000
	950	900	1000
5701			6000
	3010	3000	3000

How can we solve this?  
Can you create your own similar chart?

3 

### Activities for exploring ideas at greater depth

Ask pupils to create rounding riddles, which also include place value clues as well.

For example:

- I round to 3000 when rounded to nearest thousand but 3500 when rounded to nearest hundred.
- I am an odd number.
- Two of my digits are equal.
- My ones digit is a multiple of 3.
- Which numbers could I be?

## Speaking Frame - Rounding

Rounding to the nearest

is between  and

When rounding to the nearest

it is closer to

than

So

rounds to

when rounding to the nearest

is approximately equal to

$\approx$

## Destination Questions

1 

Show the position of 4100 on this number line.



2 

Circle the numbers that will round to 3000 if rounded to nearest thousand.

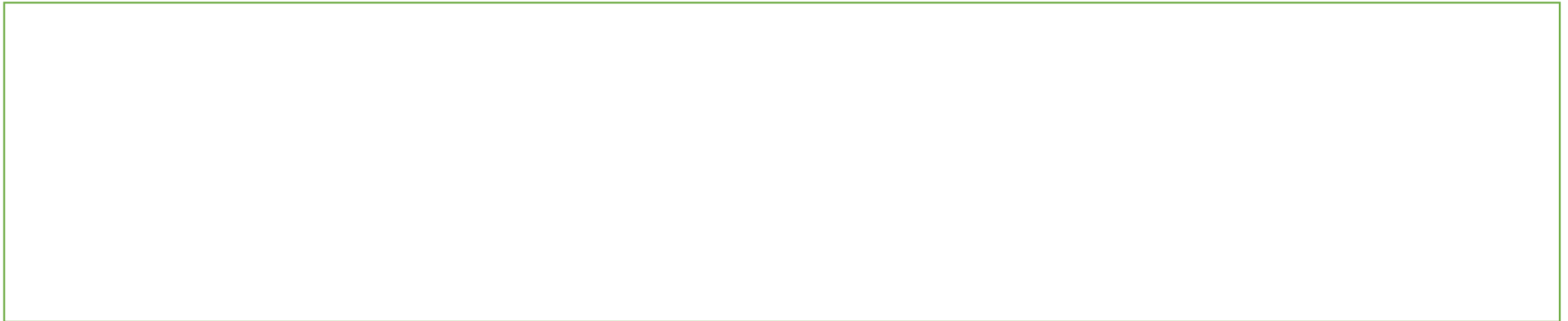
3010   3801   3499   2501

3 

Complete this table:

Number	Rounded to nearest 10	Rounded to nearest 100	Rounded to nearest 1000
	950	900	1000
5701			6000
	3010	3000	3000

# Multiplication tables check: development update



The [national curriculum](#) specifies that pupils should be taught to recall the multiplication tables up to and including  $12 \times 12$  by the end of year 4.

The purpose of the MTC is to determine whether pupils can recall their times tables fluently, which is essential for future success in mathematics. It will help schools to identify pupils who have not yet mastered their times tables, so that additional support can be provided.

<https://www.gov.uk/guidance/multiplication-tables-check-development-process>

[\(86\) Multiplication tables check: information video - YouTube](#)

# Introduction

Mathletics switches students onto maths. It's fun, supportive and effective for students of all ages and abilities, helping them achieve more.



Mathletics



# Pupil Engagement

Mathletics gives each student their very own personal learning space. Filled with targeted curriculum content, interactive tutorials and support, alongside engaging games and rewards – the Student Console is a powerful hub of learning.

- ➡ Curriculum content can be assigned and controlled by the teacher.
- ➡ Self-directed learning is the focus, with searchable access to activities, interactive content, eBooks and video.
- ➡ Targeted and adaptive practice activities for differentiated learning.

1

Encourage your child to play maths puzzles and games. Puzzles and games – anything with a dice really – will help kids enjoy maths, and develop 1 number sense, which is critically important.

2

Always be encouraging and never tell your child they are wrong when they are working on a maths problem. Instead find the logic in their thinking – there is always some logic to what they say. For example if your child multiplies 3 by 4 and gets 7, say – Oh I see what you are thinking, you are using what you know about addition to add 3 and 4, when we multiply we have 4 groups of 3...

3

Encourage your child to take time to understand the logic...speed comes later.

4

Encourage number sense. What separates high and low achievers is number sense – having an idea of the size of numbers and being able to separate and combine numbers flexibly.

5

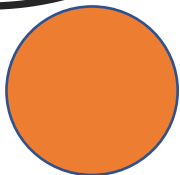
Encourage them to do their home learning and use the online resources.

How to assist your child

## Helpful Websites:



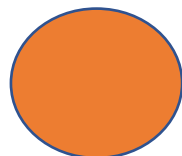
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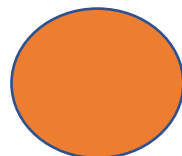
Maths Zone



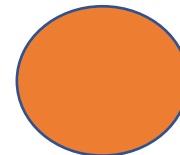
Multiplication



Oxford Owl



Times table  
check



Maths for mums  
and dads



### Maths games

Fun games and activities to help develop maths skills.

[Maths games](#)



Questions?