

Maths Workshop

Monday 7th October



POPE PAUL CATHOLIC PRIMARY SCHOOL

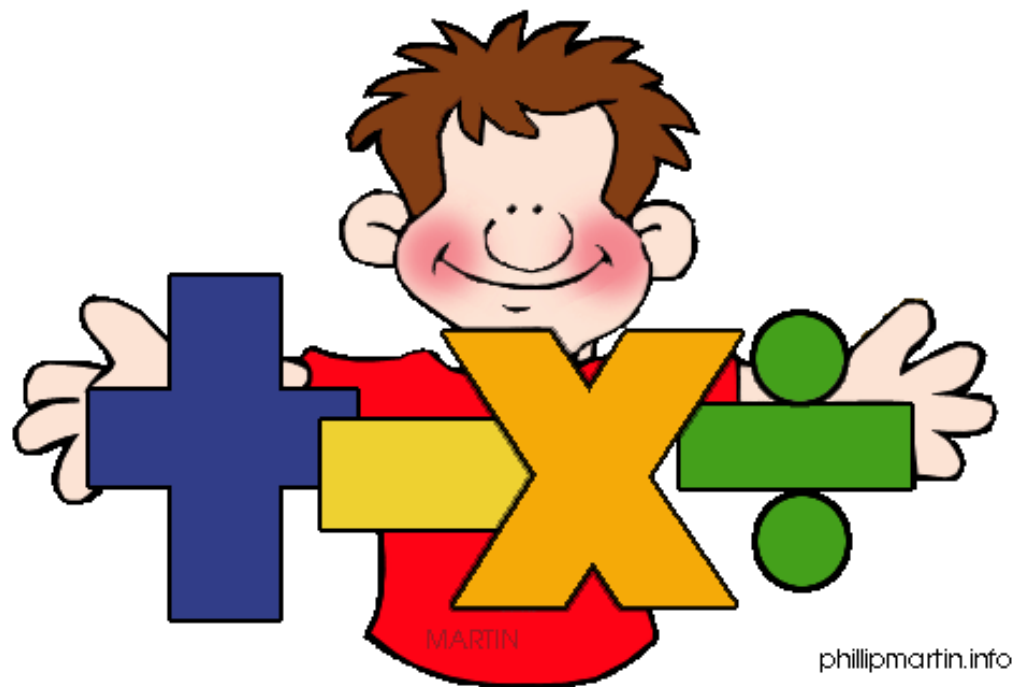
Learning in the light of Christ



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~~

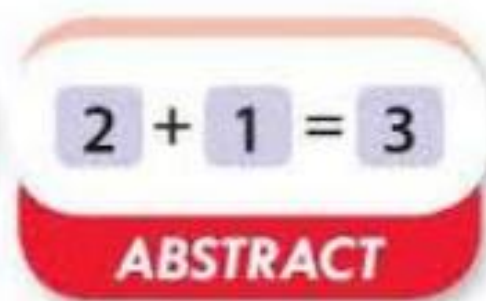
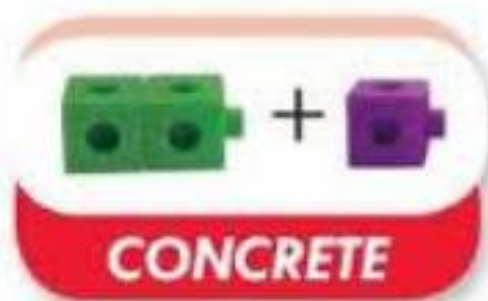
By working hard, **all children can succeed**

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

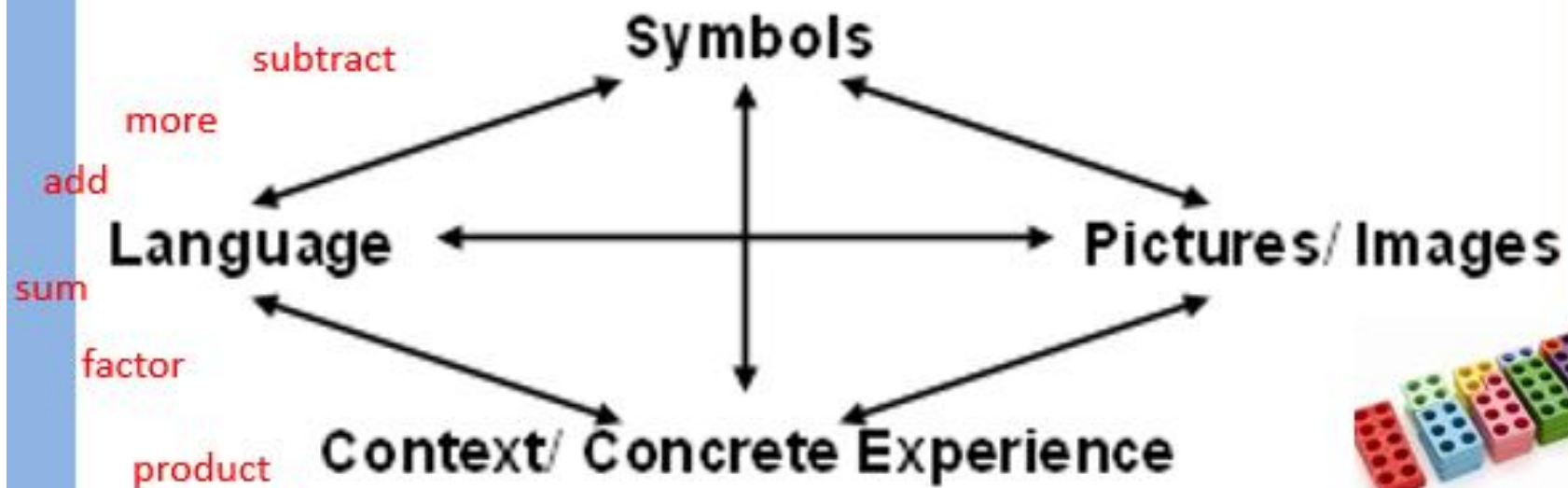
CPA



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 %



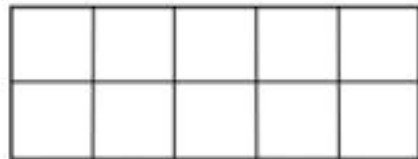
When we plan a Maths sequence we always ensure children are exposed to correct mathematical language, symbols (+ - = x), an image and a context.

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 1 Learner

Working mathematically

By the end of year 1, children begin to solve simple problems involving addition and subtraction in familiar contexts such as going shopping, using a range of hands-on equipment, symbols, images and pictures. They begin to use what they know to tackle problems that are more complex and provide simple reasons for their opinions.

Number

- **Counting and understanding numbers**

Children will identify and represent numbers using objects, pictures and models, such as the number line, and use 'equal to, more than, less than (fewer), most and least.' Children will accurately count numbers to, and across, 100 forwards and backwards from any given number with increasing understanding. They count, read, write and order numbers in numerals up to 100 and from 1 to 20 in words. When given a number, they can identify one more and one less. They can count in multiples of twos, fives and tens.

- **Calculating**

Children will understand known addition and subtraction facts within 20, including zero. They will demonstrate an understanding of multiplication and division through grouping and sharing using hands-on resources, pictorial representations and arrays (2, 5 and 10). They understand doubling and halving small quantities.

Learning Sequences, Speaking Frames, Destination Questions

1LS1	Geometry – Positional Language Including Ordinal Numbers
1LS2	Numbers to Ten – Finding Patterns in Numbers (including subitising)
1LS3	Numbers to Ten – Counting and Comparison (more, less, fewer)
1LS4	Numbers to Ten – Estimating and Ordering
1LS5	Numbers to Ten – Regrouping the Whole
1LS6	Numbers to Ten – Part Whole Addition and Subtraction
1LS7	Numbers to Ten – Solving Problems Using Part or Whole Unknown
1LS8	Numbers to Ten – Comparison
1LS9	Numbers to Ten – Equality and Balance
1LS10	Numbers to Twenty – Making 10 and Some More
1LS11	Numbers to 20 – Estimating and Ordering, 1 More and 1 Less
1LS12	Numbers to Twenty – Doubling and Halving
1LS13	Numbers to Twenty – Odd and Even Numbers
1LS14	Geometry – Names and Properties of 2-D and 3-D Shape

Year 1

Learning Sequence 3

Numbers to Ten – Counting and Comparison (more, less, fewer)

Key NC Statement

Given a number, identify one more and one less

Related NC Statements

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- read and write numbers from 1 to 20 in numerals and words
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- count, read and write numbers to 100 in numerals

Steps within the Learning Sequence

Step 1: Counting varied representations of number

Step 2: Matching values to mathematical models and numerals

Step 3: Finding more and fewer

Step 4: Finding 1 more and 1 less

Step 5: Representing one more and one less pictorially

Step one

Counting varied representations of number

Ask pupils to count different groups of objects alongside mathematical models representing numbers up to 10. For example, present pupils with a bowl with up to 10 pieces of fruit.



How many pieces of fruit
are there in the bowl?

Next, present pupils with a beadstring showing the same number of beads as the pieces of fruit.



How many beads are
there?

Pupils explore all numbers from 0 to 10 – through counting objects of differing sizes, varied mathematical models such as a tens frame and other counting equipment in the classroom – successfully identifying when they are the same value.

Destination Questions

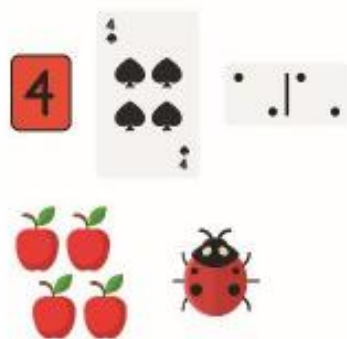
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Using different objects from the classroom:

show me 0

show me 8

2



Jo says one of these is different to the rest.

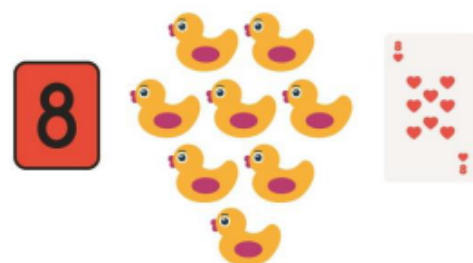
Do you agree?

Step two

Matching values to mathematical models and numerals

Provide pupils with playing cards (after removing the picture cards) and ask them to choose a random card from the pack.

Pupils then search and find the corresponding group of objects and numeral to make their set complete. For example:



How many hearts are there on the card and how do you know?

I know there are 8 hearts on the card because I saw the pattern.

Encourage pupils to subitise by recognising the value on the playing cards. In doing this, they will now begin to match the quantity in the set with a numeral.

Pupils will continue to explore varied values using the playing cards, objects and numerals whilst speaking in complete sentences.

Pupils will use the
handout_1LS3_step2_speaking_frame.

Speaking Frame - Matching Values to Representations

I think ☐ because ...

I know ☐ because ...

I can see ☐

2

Learning Sequences, Speaking Frames, Destination Questions

Speaking Frame - Matching Values to Representations

I think ☐ because ...

I know ☐ because ...

I can see ☐

Encourage pupils to subitise when recognising the value on the playing card and then to count the objects to agree it.

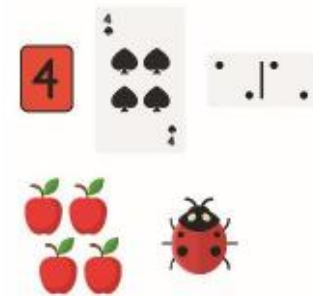
Activities for exploring ideas at greater depth

Pupils' language is further enriched and their sentences become more complex through reasoning.
For example:



I know there are 7 hearts on the card because I saw 3 hearts, then 1 heart and then 3 more hearts.

2



Jo says one of these is different to the rest.

Do you agree?

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



Questions?