

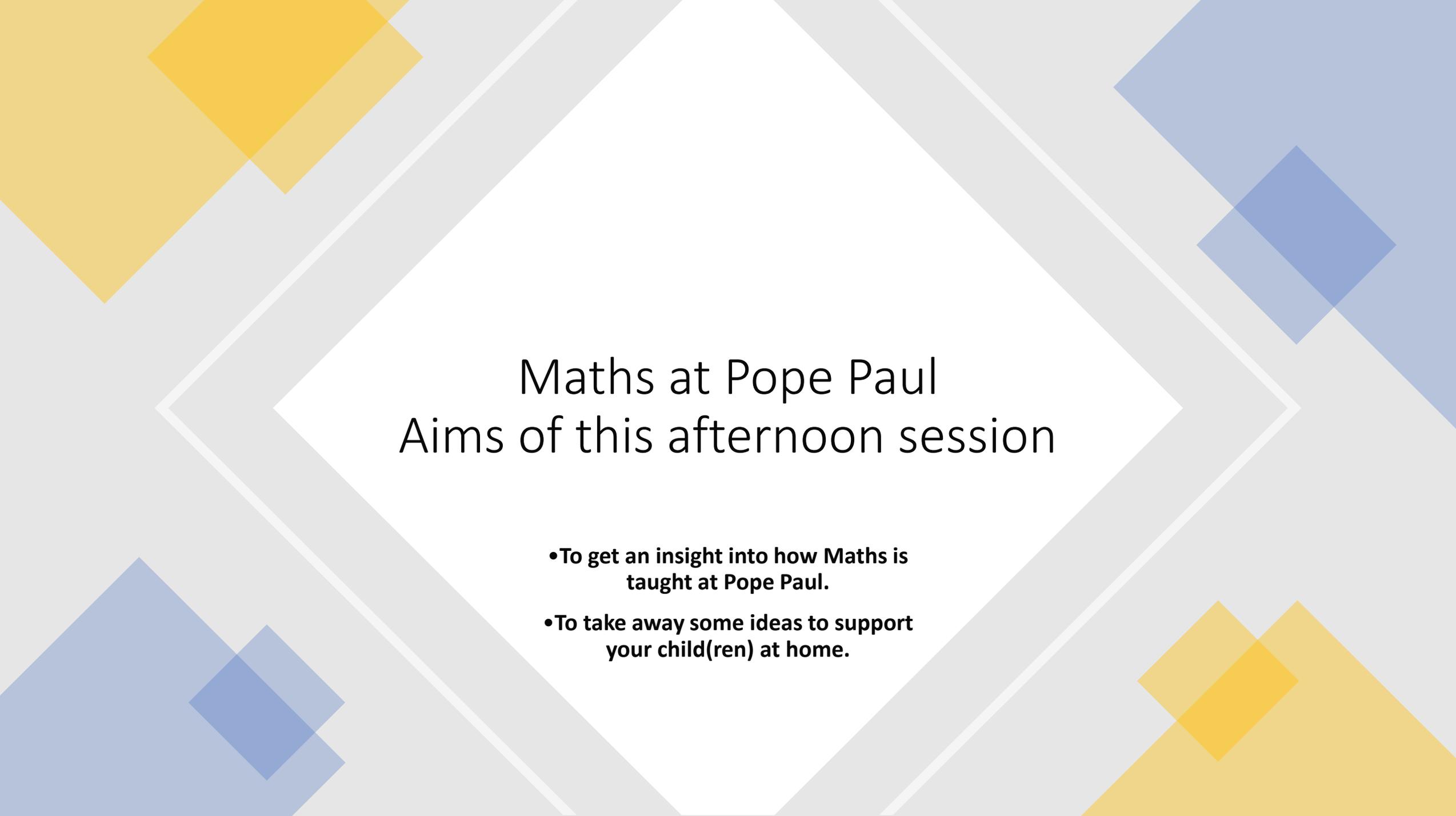
Year 2 Maths Workshop

Friday, 8th October, 2021



POPE PAUL CATHOLIC PRIMARY SCHOOL

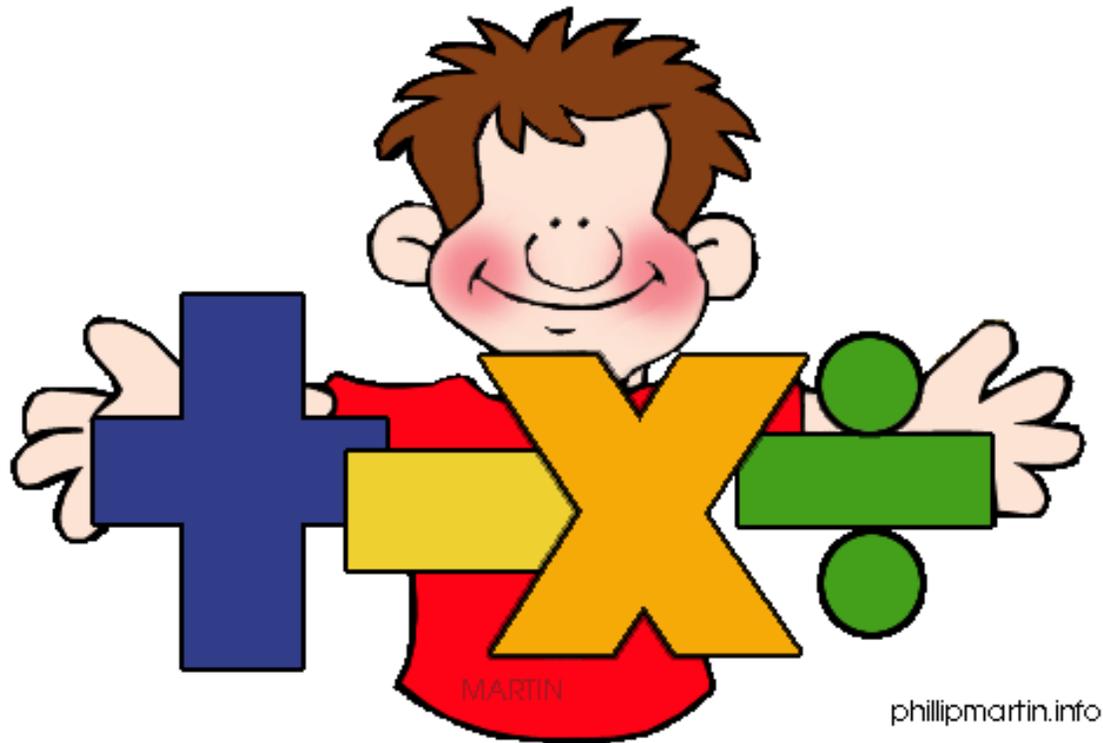
Learning in the light of Christ



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 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~~

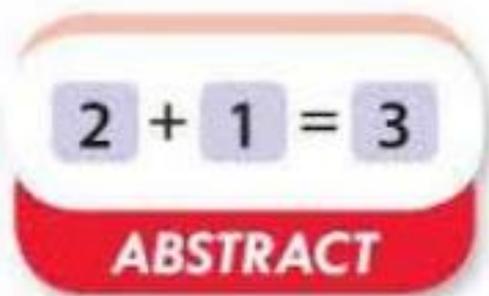
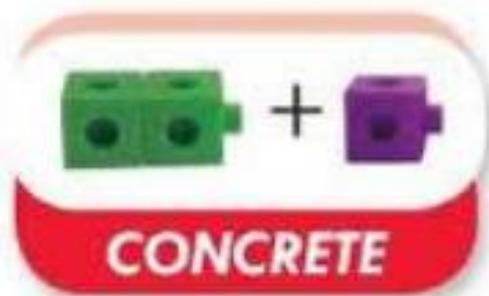
By working hard, **all children can succeed**

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

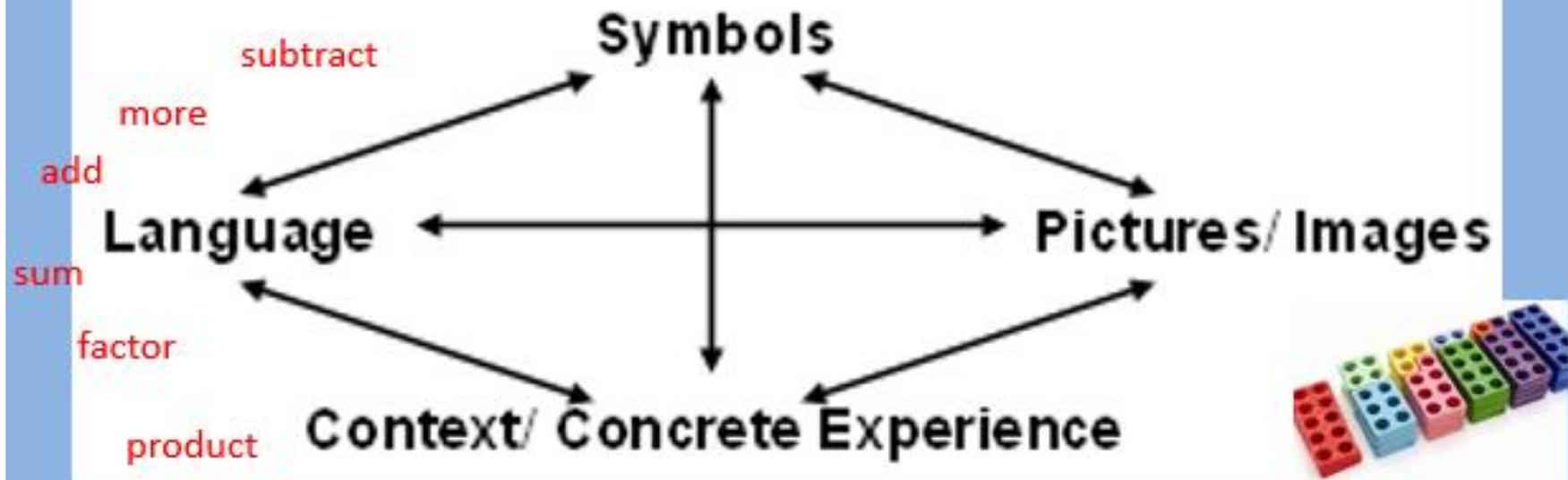
CPA



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.

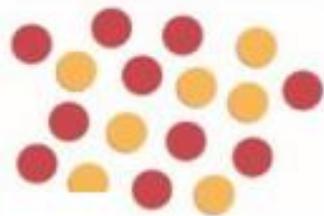
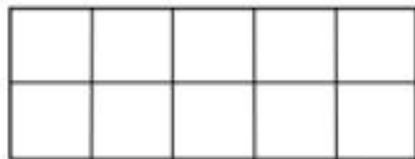


Bringing concrete, pictorial and abstract together

Have a go!

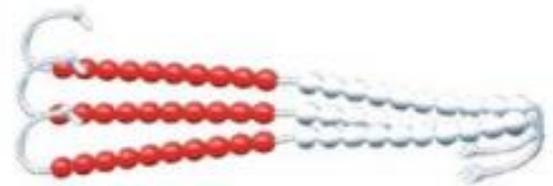
Try these calculations using some of the 'objects' on your table.

$$8 + 9$$



$$15 - 7$$

How could these be represented using pictures?



The Year 2 Learner

Working mathematically

By the end of year 2, children will solve problems with one or a small number of simple steps. Children will discuss their understanding and begin to explain their thinking using appropriate mathematical vocabulary, hands-on resources and different ways of recording. They will ask simple questions relevant to the problem and begin to suggest ways of solving them.

Number

- **Counting and understanding numbers**

Children will develop their understanding of place value of numbers to at least 100 and apply this when ordering, comparing, estimating and rounding. Children begin to understand zero as a place holder as this is the foundation for manipulating larger numbers in subsequent years. Children will count fluently forwards and backwards up to and beyond 100 in multiples of 2, 3, 5 and 10 from any number. They will use hands-on resources to help them understand and apply their knowledge of place value in two digit numbers, representing the numbers in a variety of different ways.

- **Calculating**

Children learn that addition and multiplication number sentences can be re-ordered and the answer remains the same (commutativity) such as $9+5+1=5+1+9$. They learn that this is not the case with subtraction and division. They solve a variety of problems using mental and written calculations for +, -, x, ÷ in practical contexts.

These methods will include partitioning which is where the number is broken up into _____

Learning Sequences, Speaking Frames, Destination Questions

2LS1	Securing Fluency to Twenty
2LS2	Place Value – Making Tens and Some More
2LS3	Place Value and Regrouping Two-Digit Numbers
2LS4	Counting On and Back in Ones and Tens from any Number
2LS5	Representing, Ordering and Comparing Numbers to 100 and Quantities for Measures
2LS6	Estimation and Magnitude
2LS7	Numbers to 20 – Mental Addition and Subtraction
2LS8	Finding Complements of 10 and 100 Including Measures
2LS9	Add and Subtract Numbers Mentally Using 1- and 2-Digit Numbers

Place Value and Regrouping Two-Digit Numbers

Key NC Statement

Recognise the place value of each digit in a two-digit number (tens, ones)

Steps within the Learning Sequence

Step 1: Identifying the place value in 2-digit numbers using place value cards and base-10

Step 2: Identifying the place value in 2-digit numbers using a proportional (base-10) and non-proportional (money) model

Step 3: Comparing representations of 2-digit numbers

Step 4: Making regroupings of the same number in different ways

Step 5: Identify missing parts of a regrouped number in a variety of models

Step one

Identifying the place value in two-digit numbers using place value cards and base-10

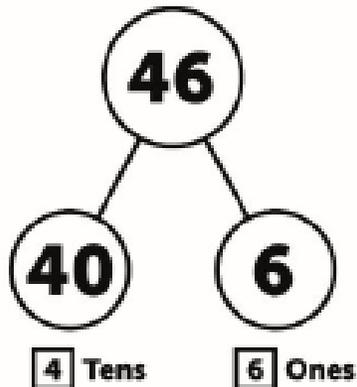
Display a 2-digit number.

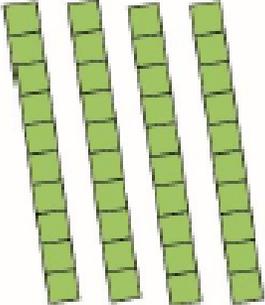
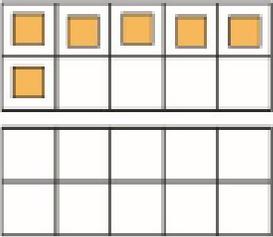
Model making the number in a place value chart with an embedded tens frame.

Use handout_2LS3_step1_place_value_chart_with_embedded_tens_frame with base-10 equipment.

Make the number with place value arrow cards as well.

Finally, model recording it on a part whole cherry model (see handout_2LS3_step1_place_value_part_whole_cherry_model) and as the abstract.



Tens	Ones
	

$46 = 40 + 6$
Forty-six is made up of 4 tens and 6 ones.
Forty add six equals 46.

Pupils generate their own 2-digit numbers and repeat modelled example.

Step two



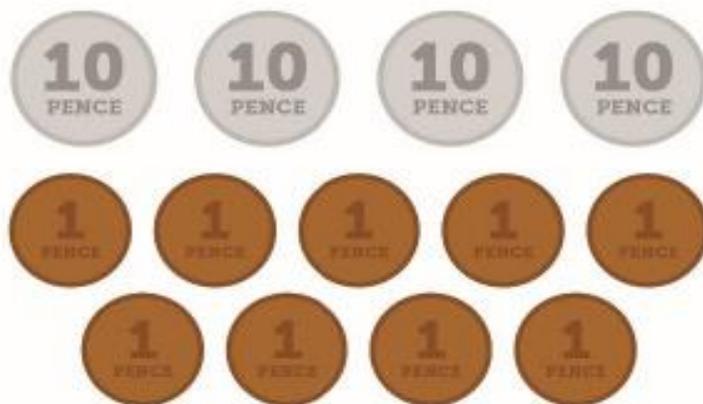
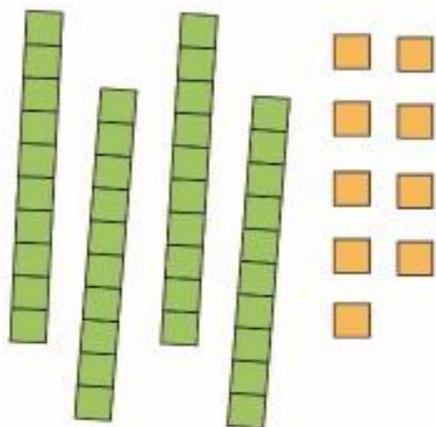
Identifying the place value in 2-digit numbers using a proportional (base-10) and non-proportional (money) model

Show a model of a number using base_10 in a place value chart with an embedded tens frame (handout_2LS3_step1_place_value_chart_with_embedded_tens_frame).

Pupils draw the part whole cherry model for the number as in Step 1.

Show pupils a collection of 1p and 10p coins of the same value.

Organise the coins into the place value chart.



Discuss 'what's the same and what's different?'

Identify that they are the same value but one is a measure of money and one is a number.

Highlight one difference is that p is written after the amount to show it represents pence.

Step three



Comparing representations of 2-digit numbers

Show pupils a number represented using a range of equipment:

- beadstrings
- place value arrow cards
- base-10 equipment
- money.

Speaking Frame - 'What's the Same? What's Different?'

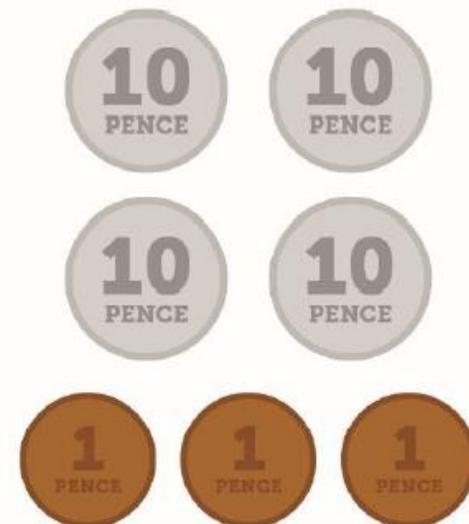
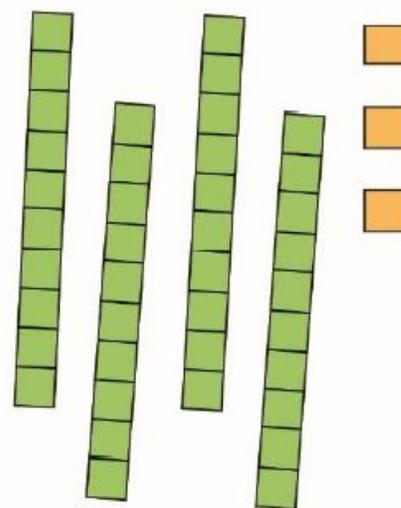
I notice ...

I can see that ... is the same.

I can see that ... is different.

I know that ...

I think that ...



Check that the pupils can identify what number is being represented.

Discuss 'what's the same and what's different?' about the different representations.

Provide pupils with other representation of the same number made with different equipment.

Discuss what they notice. Use [handout_2LS3_step3_speaking_frame](#).

Learning Sequences, Speaking Frames, Destination Questions

Speaking Frame - 'What's the Same? What's Different?'

I notice ...

I can see that ... is the same.

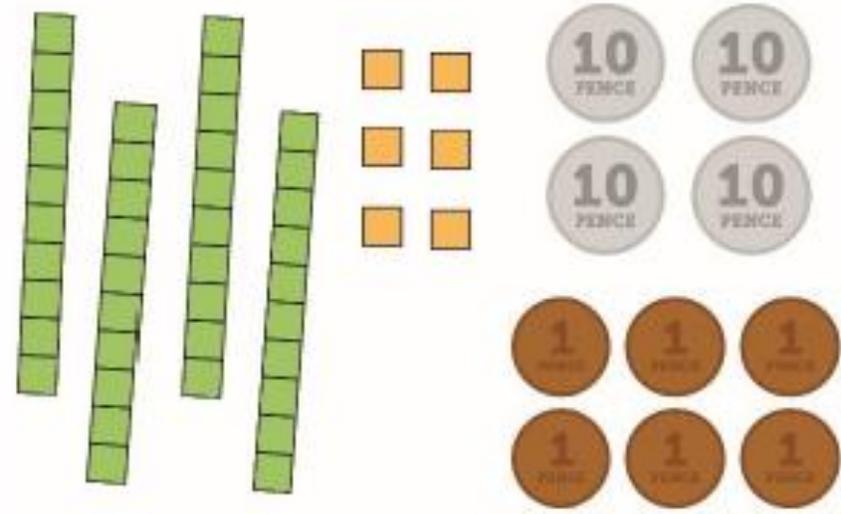
I can see that ... is different.

I know that ...

I think that ...

Destination Questions

1 

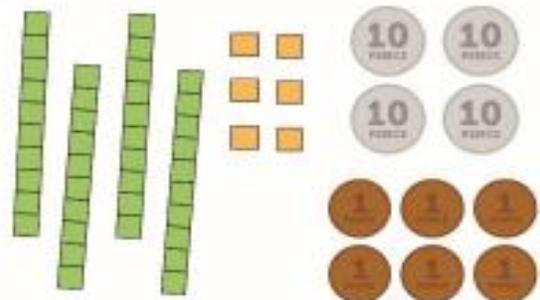


What is the same, what is different?

Activities for exploring ideas at greater depth

When making the values in money, challenge pupils to make the amounts in the fewest possible number of coins. They will need to be able to identify which coins are tens and which are ones.

1



What is the same, what is different?

2



Make this number with base-10 equipment and in a part whole model.

3

I have 17 ones and I am between 40 and 50.
Who am I?
How many tens do I have?

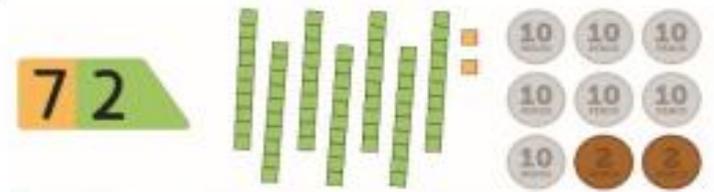
4

The sum of these two calculations is the same.
What is the missing information?
 $5 \text{ tens} + \square = 52$
 $\square + 22 = \square$

5

Numbers can only be regrouped into tens and ones like this:
 $37 = 30 + 7$
Can you prove that this statement is incorrect?

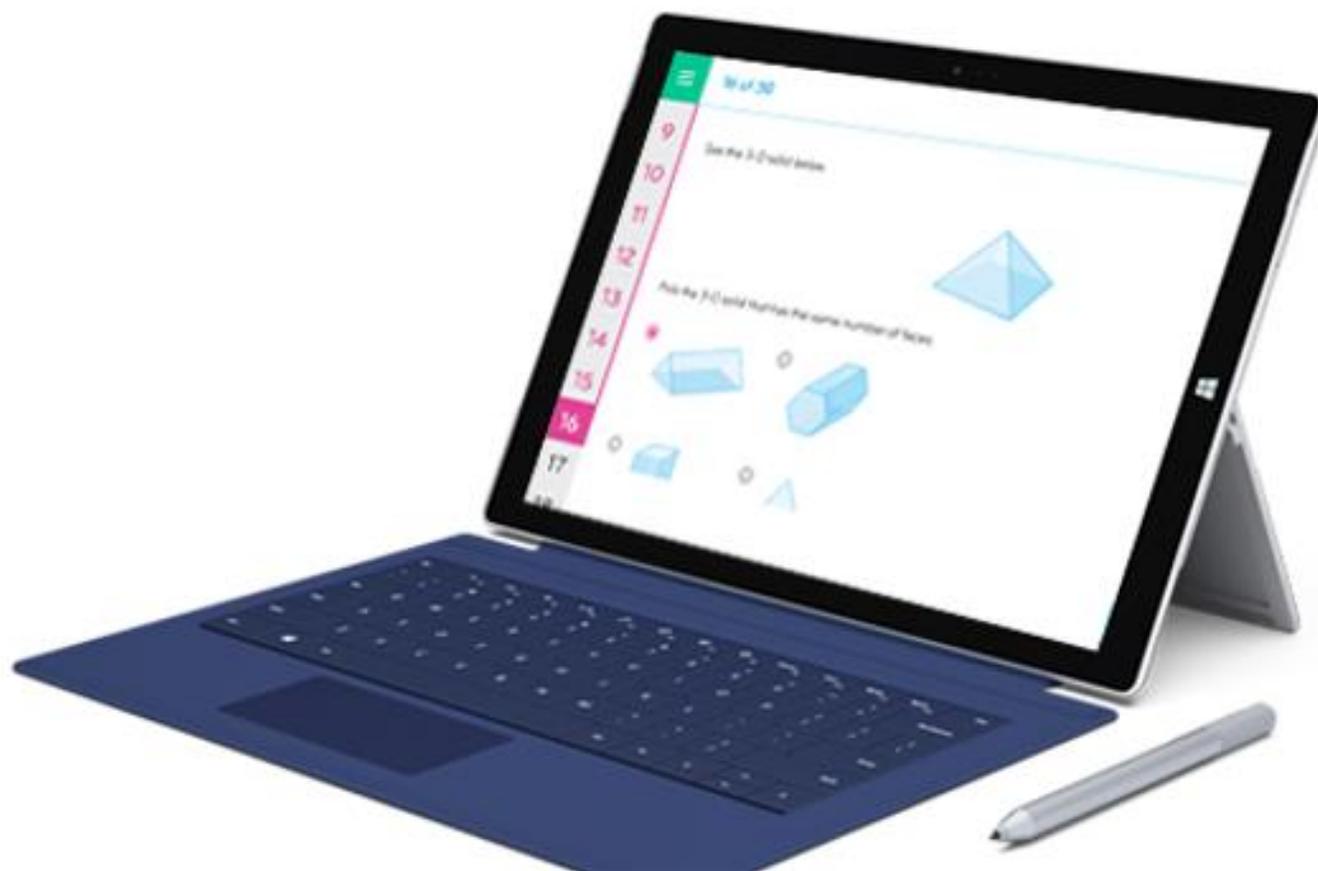
6



Which one is the odd one out?
Can you explain why?

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

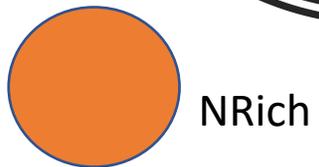
Encourage number sense. What separates high and low achievers is number sense – having an idea of the size of numbers and being able to separate and combine numbers flexibly.

5

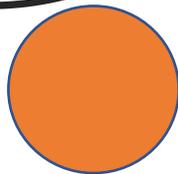
Encourage them to do their home learning and use the online resources.

How to assist your child

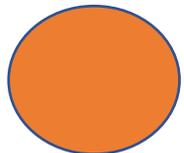
Helpful Websites:



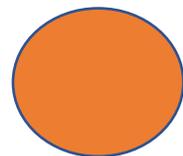
NRich



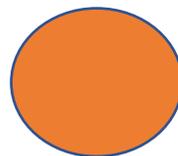
Maths Zone



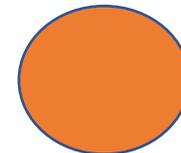
Multiplication



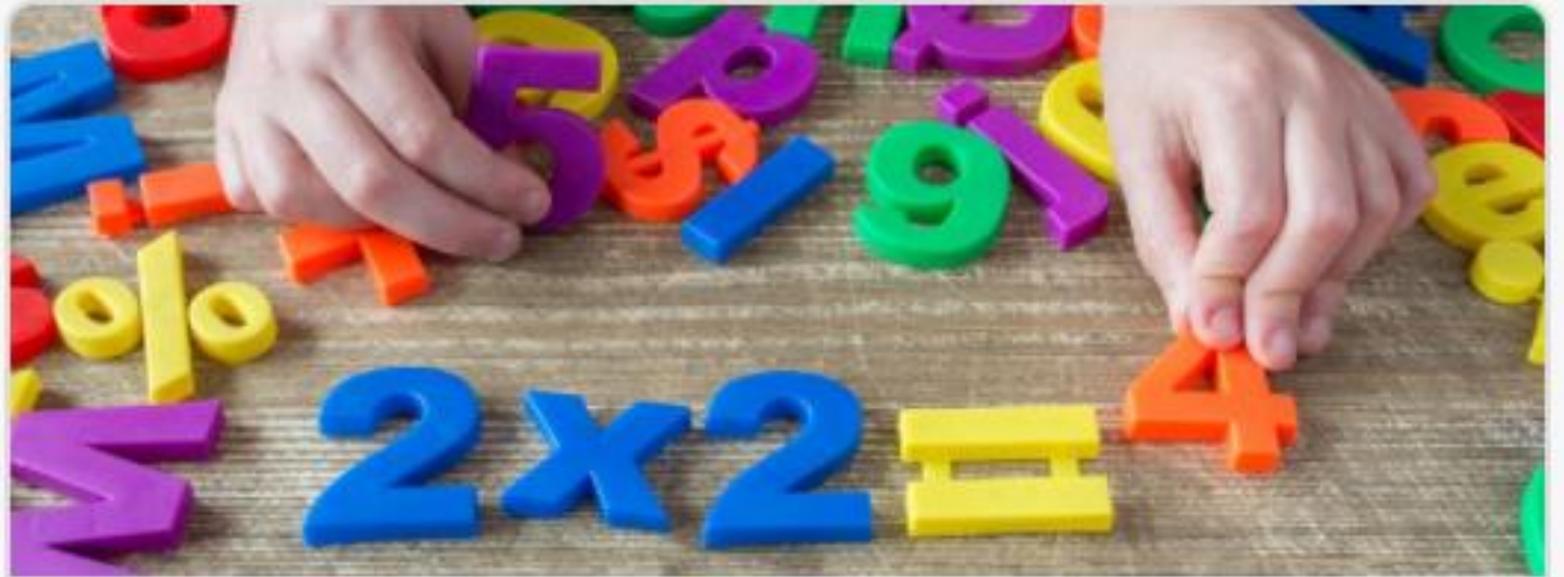
Oxford Owl



Times table
check



Maths for mums
and dads



Maths games

Fun games and activities to help develop maths skills.

[Maths games](#)

Resource ideas for parents:

- **Online Maths Activities**

- We make use of online maths games and activities in school. Some of the links are popular.
- Why not try some of them out and let us know what you think...?

- **Why should I play maths games with my child?**

- Children make progress best as mathematicians when they regularly **repeat skills** and practise them until they become **embedded**. This can be quite a long process sometimes, and so the use of the context of an exciting game or interesting activity can be highly motivating. In our experience, our children learn best when they are having fun and that's what games are for!

Internet-based Games relating to Times Tables Practice

- [Maths Chase](#)

Internet-based Activities relating to Number and Place Value

- [Chinese Dragon Ordering Numbers](#) Learn to order numbers by playing this fun Chinese Dragon game!
- [Underwater Counting Game](#) Learn to count up to 10 sea creatures accurately with this fun underwater themed game!
- <https://mathsframe.co.uk/en/resources/category/12/latest-resources>

This link takes you to many Maths Games such as:

[Balancing Sums](#) [Finding Difference using a Number line](#)

[Comparing Numbers using Dienes](#)



Questions?

