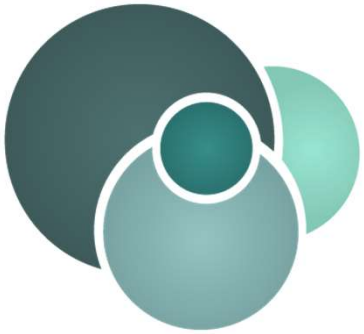
Maths at Salford Priors
November 2024

What we are aiming to cover today:

1. What do we mean by ‘mastery?’
2. What maths lessons look like here at Salford Priors.
3. Pupil voice
4. How can you help at home?

What do we mean by Mastery?



NCETM

NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

MATHS HUBS

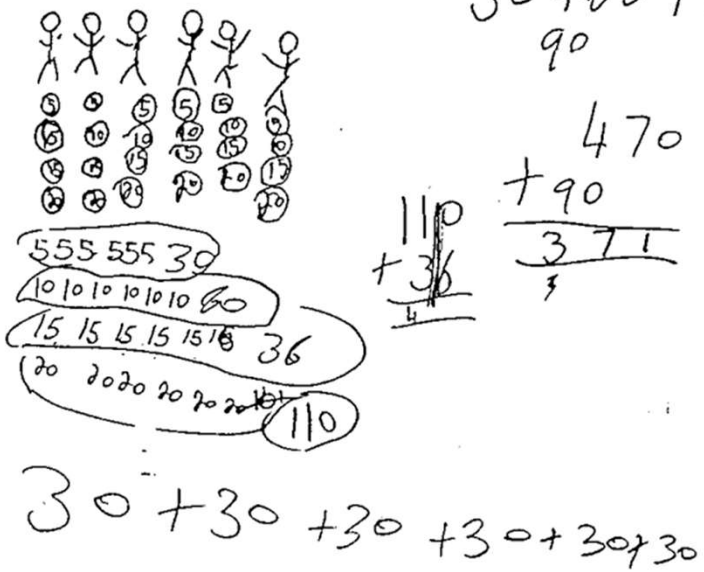
GLOW

What do we mean by Mastery?

1256 apples are divided among 6 shopkeepers
How many apples will every shopkeeper get?
How many apples will be left?

MathsHUBS

Working:



Answer:...

Is there evidence of conceptual understanding?

Is there procedural fluency and efficiency?

What do we mean by Mastery?

Sally knows all her tables up to 12 x 12

When asked what is 12 x 13 she looks blank.

Does she have fluency and understanding?

What do we mean by Mastery?

Mastery

Involves the development of three forms of knowledge:

Factual – I know that
Procedural – I know how
Conceptual – I know why

What do we mean by Mastery?

Whole Class Teaching

Provides a clear and coherent journey through the mathematics

Provides detail

Provides scaffolding for all to achieve

Provides the small steps

Provides the opportunity to question and think more deeply

How do we teach Maths at Salford Priors?

Our Vision:

At Salford Priors, we believe that mathematics is a creative and highly inter-connected discipline. Maths is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

How do we teach Maths at Lickey Hills?

Our Vision:

Our vision at Salford Priors is for all children to become fluent mathematicians, with a deep and secure understanding of concepts, enabling them to reason and solve problems in a range of contexts.

Our journey starts in EYFS…

New Statutory Framework for September 2021: Nursery:

- Fast recognition of up to 3 objects, without having to count them individually ('subitising').
- Recite numbers past 5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Compare quantities using language: 'more than', 'fewer than'.
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.

Our journey starts in EYFS…

New Statutory Framework for September 2021: Reception

ELG: Number

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Our journey starts in EYFS…

New Statutory Framework for September 2021: Reception

ELG: Numerical Patterns

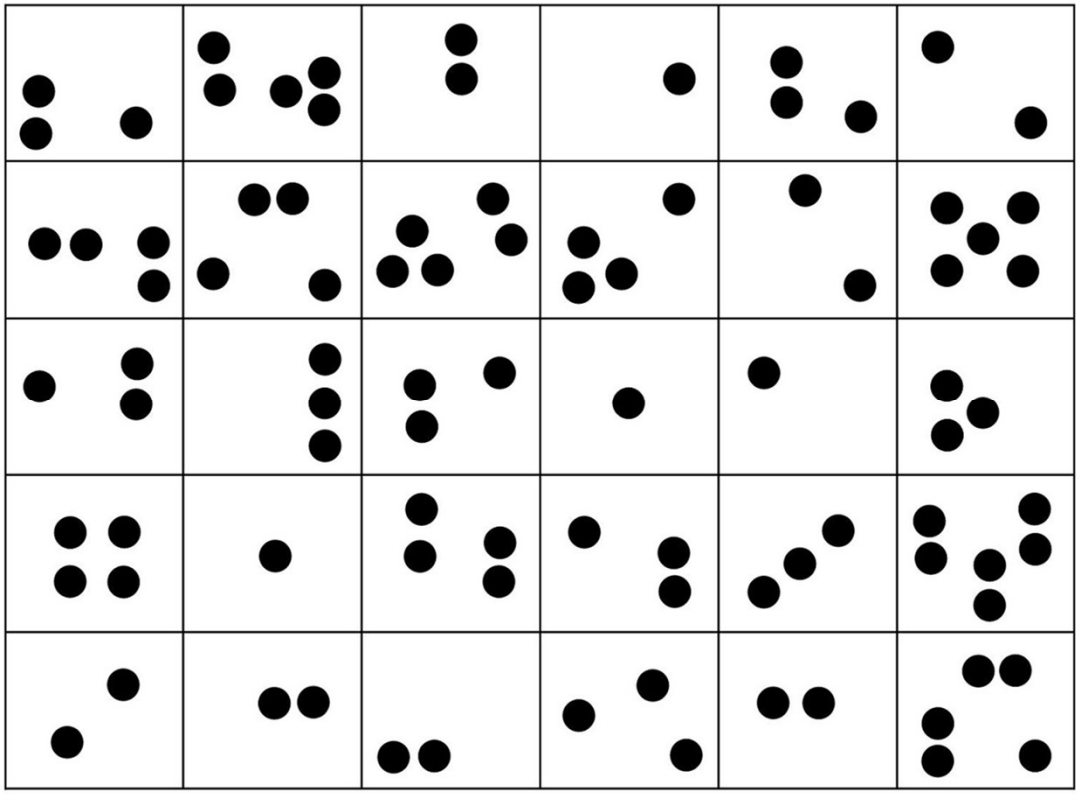
Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Our journey starts in EYFS…

Subitising:

Amount not count!



We are working within 10?!?

Cardinality, Ordinality and Composition:

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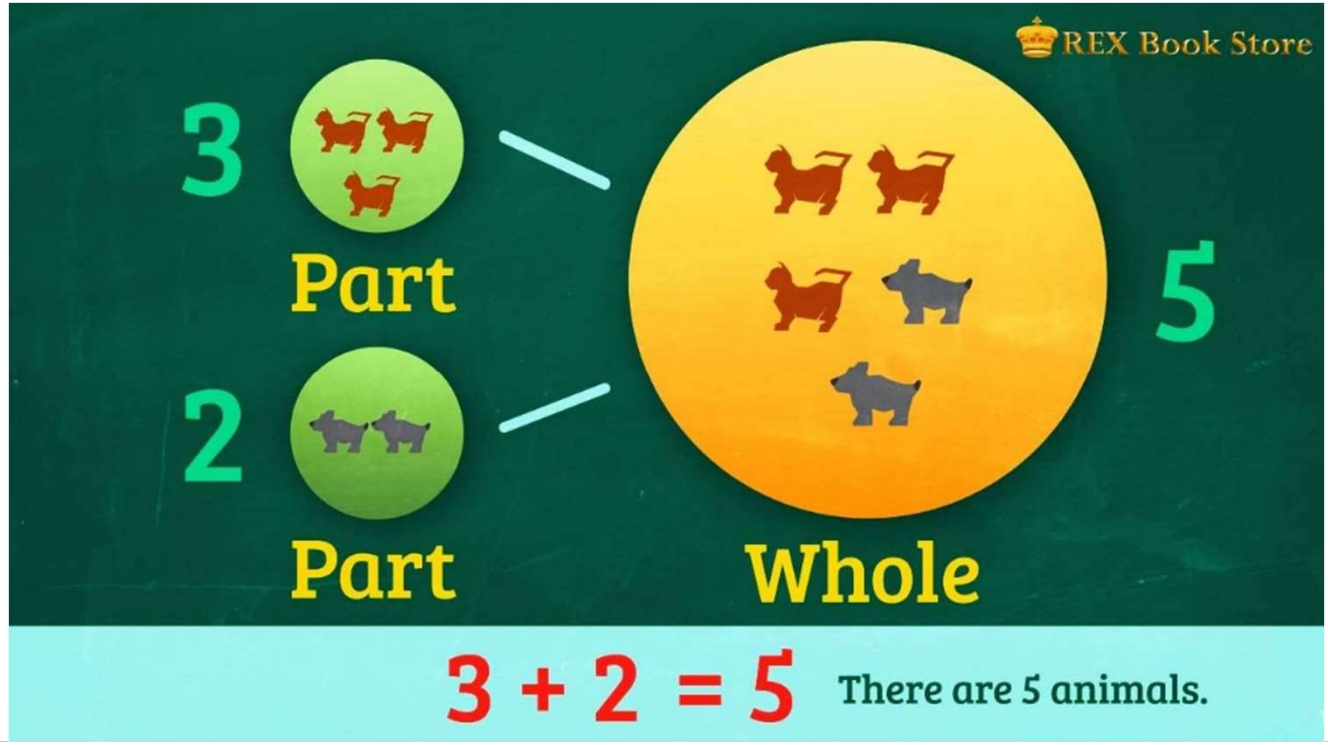
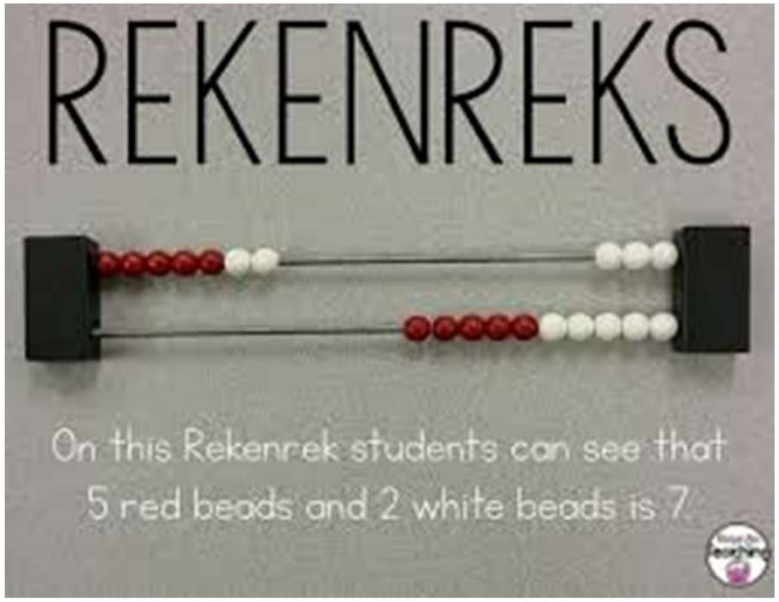
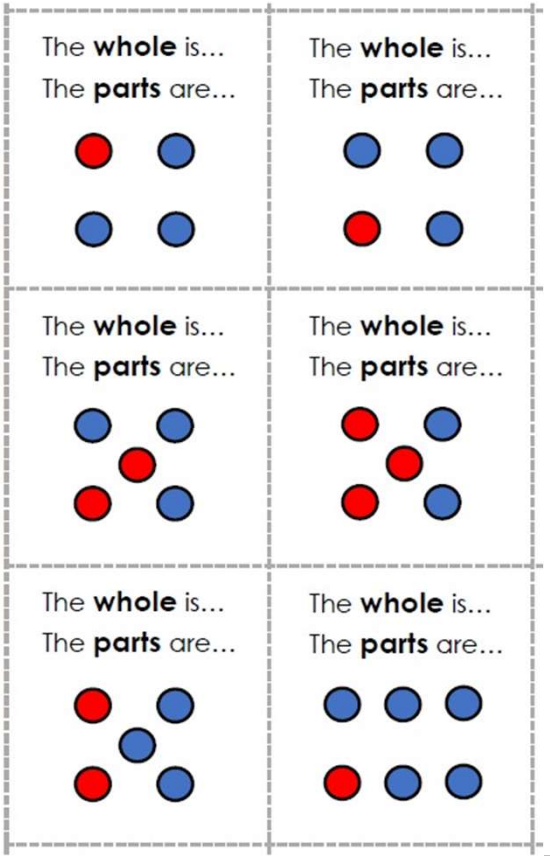


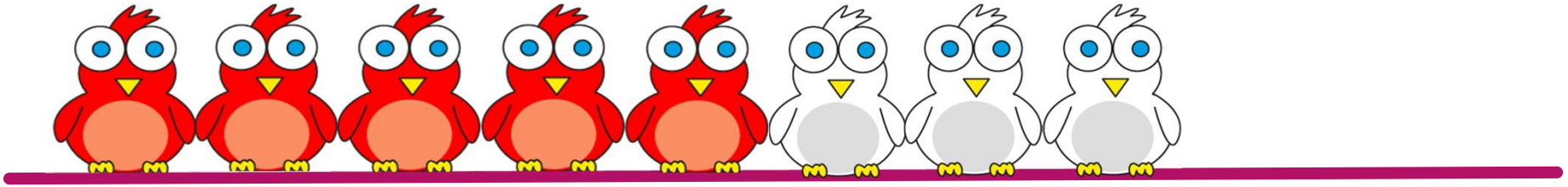
Mastering Number Programme

This project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.

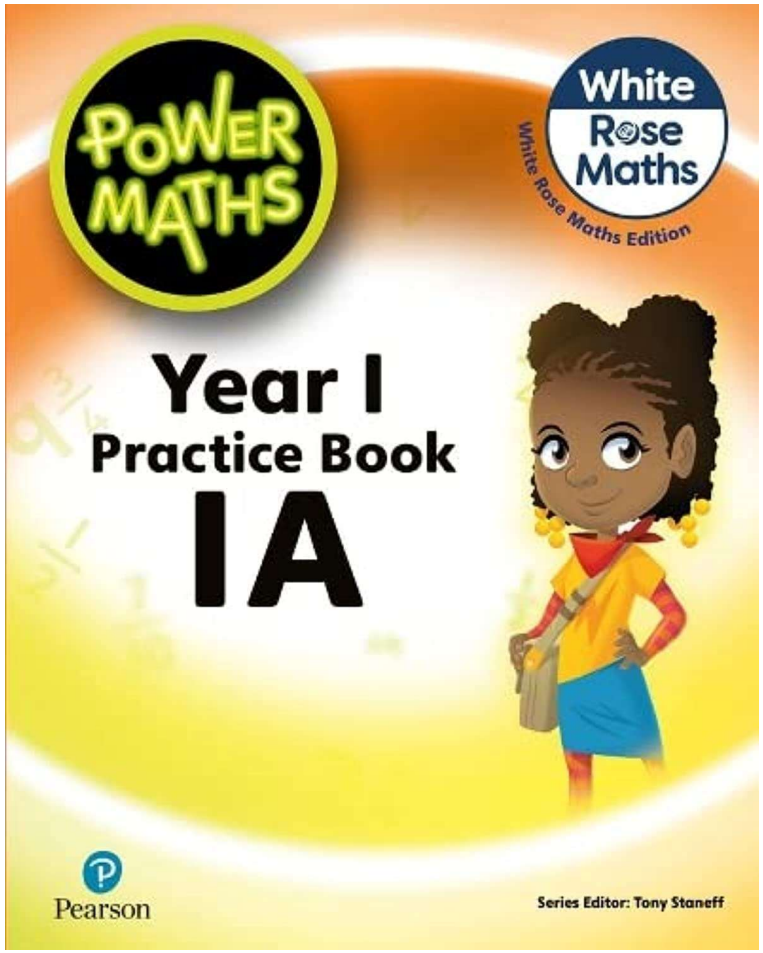


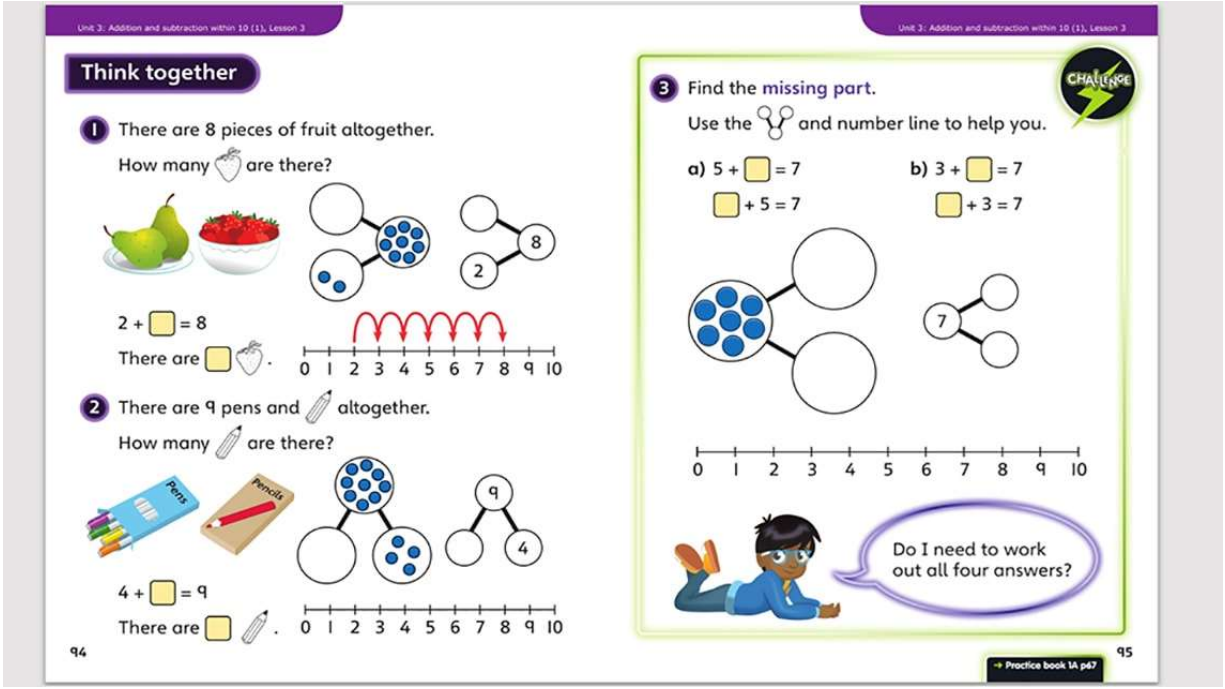


How many more to make 8 on 1 row?

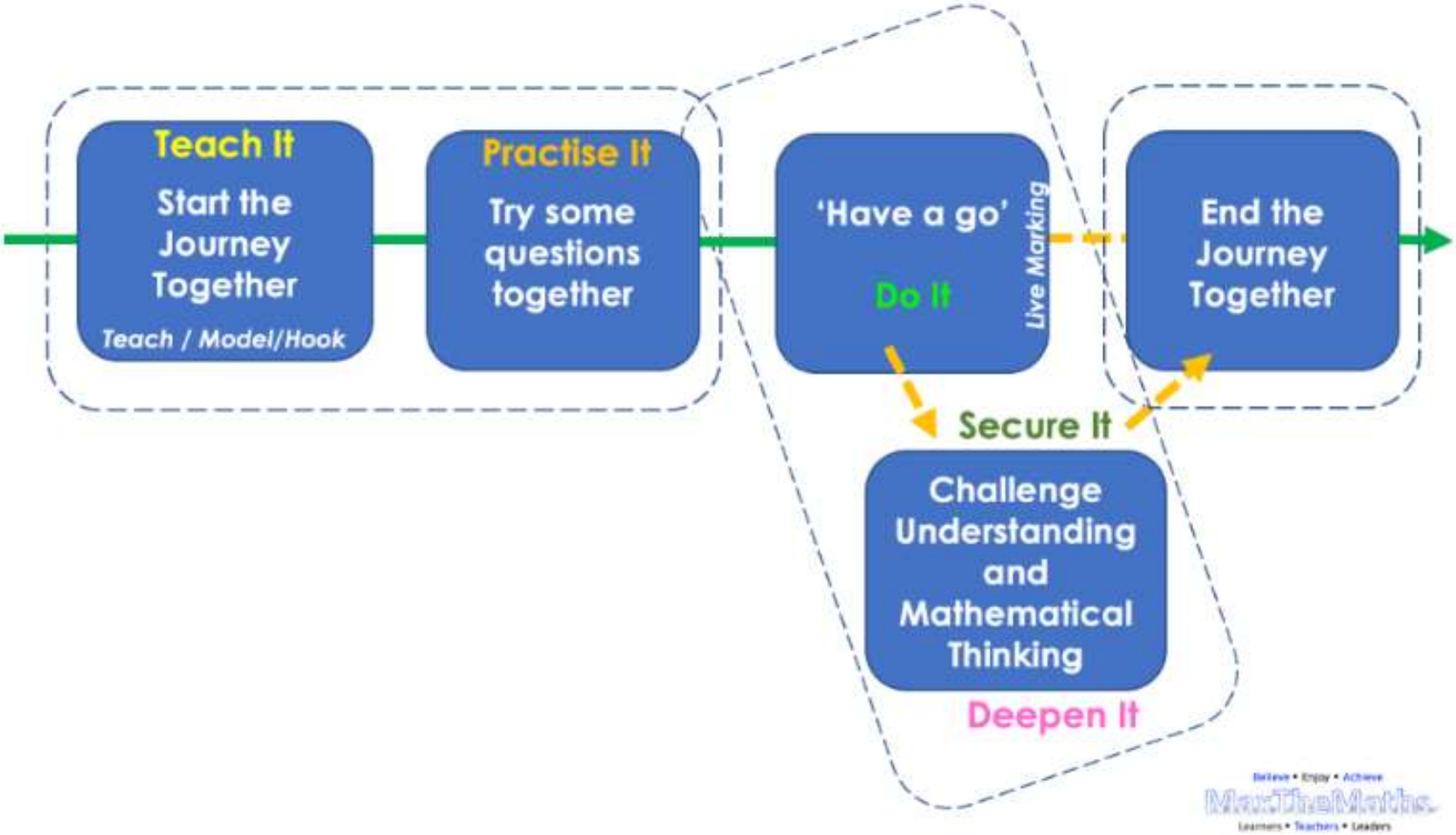


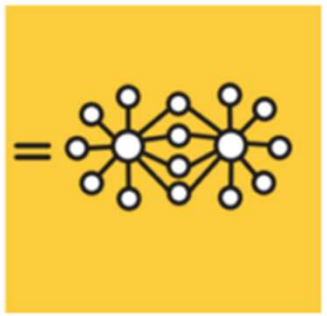
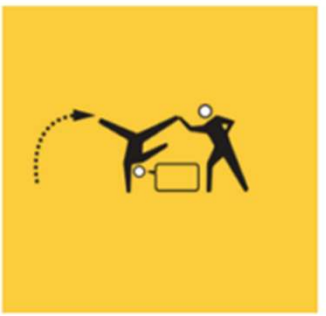
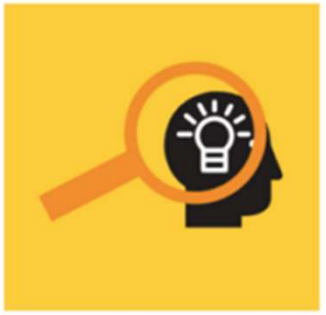
_____ needs _____ to make 8.


POWER MATHS
White Rose Maths
White Rose Maths Edition
Year 1
Practice Book
1A
Pearson
Series Editor: Tony Staneff


Unit 3: Addition and subtraction within 10 (1), Lesson 3
Think together
1 There are 8 pieces of fruit altogether.
How many are there?
8
2
2 + ☐ = 8
There are ☐.
0 1 2 3 4 5 6 7 8 9 10
2 There are 9 pens and altogether.
How many are there?
Pens
Pencils
9
4
4 + ☐ = 9
There are ☐.
0 1 2 3 4 5 6 7 8 9 10
94
Unit 3: Addition and subtraction within 10 (1), Lesson 3
CHALLENGE
3 Find the missing part.
Use the and number line to help you.
a) 5 + ☐ = 7
☐ + 5 = 7
b) 3 + ☐ = 7
☐ + 3 = 7
7
0 1 2 3 4 5 6 7 8 9 10
Do I need to work out all four answers?
95
Practice book 1A p67

This structure underpins both the Power Maths and mastery approaches. Rosenshine's Principles of Instruction form much of the theory behind both.

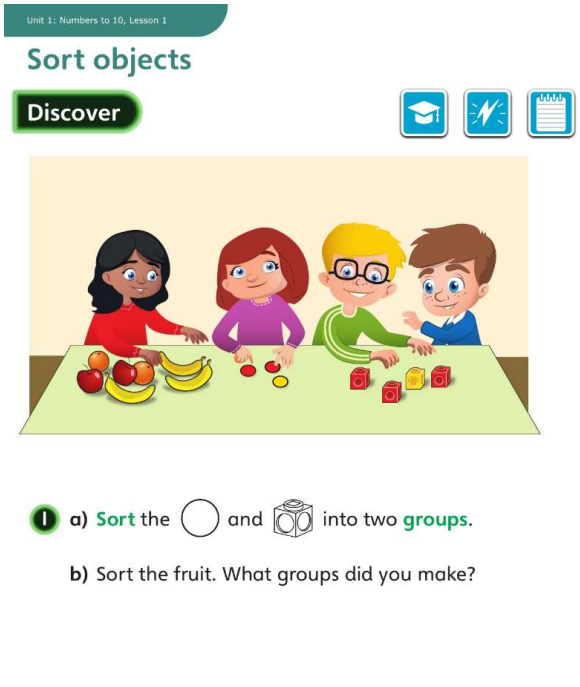


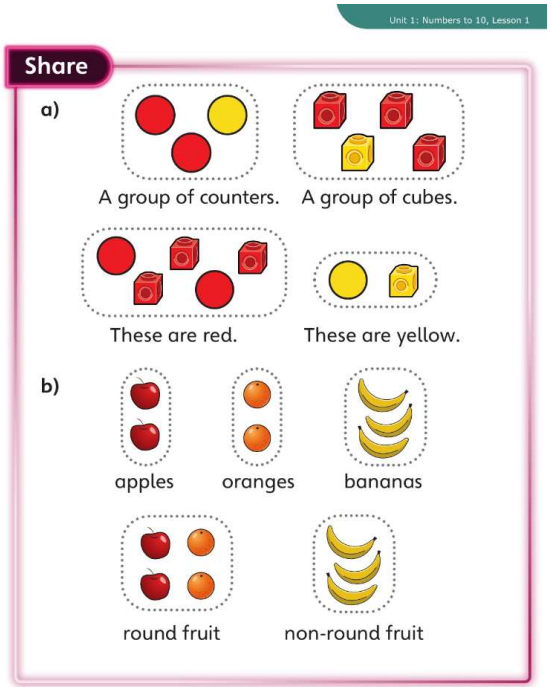
Rosenshine 1 - Daily review	Rosenshine 2 - New materials in small steps	Rosenshine 3 - Ask questions	Rosenshine 4 - Provide models	Rosenshine 5 - Guide student practice
				
Rosenshine 6 - Check student understanding	**Rosenshine 7 - Obtain high success rate**	**Rosenshine 8 - Scaffolds for difficult tasks**	**Rosenshine 9 - Independent practice**	**Rosenshine 10 Weekly and monthly review**
				

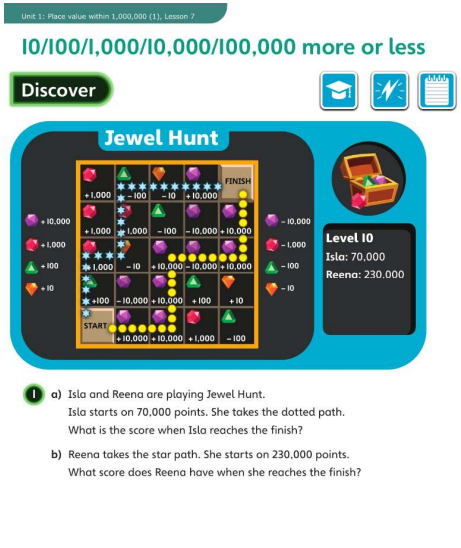
Teach It:

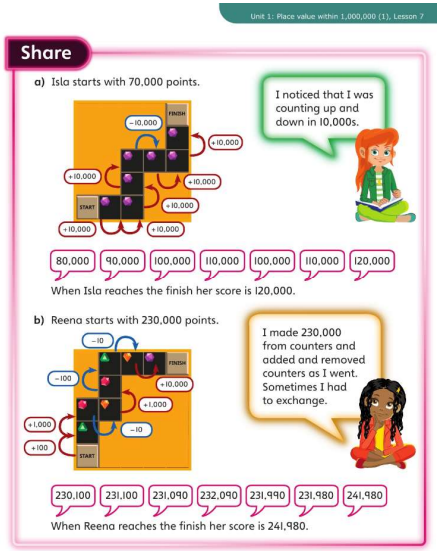
Teach It

Start the journey together through the exploration of the hook 'Discover' and the model 'Share' sections.







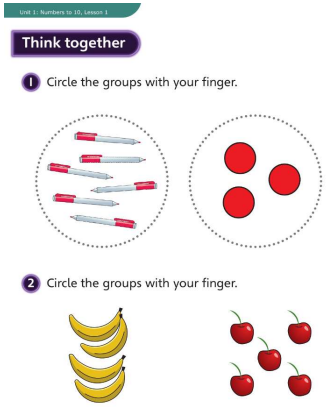


We start with the discover part of the lesson – to help children retrieve knowledge they already have that will provide an anchor and application for new learning.

Practise It:

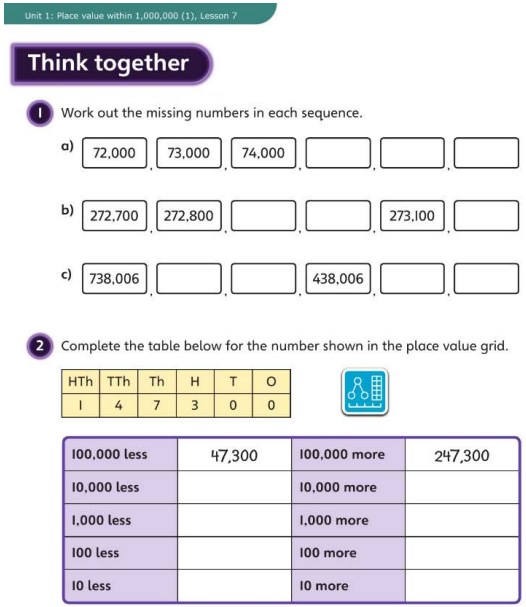
Practise It

Try some questions together through 'Think Together' sections.


Think together

1 Circle the groups with your finger.

2 Circle the groups with your finger.


Think together

1 Work out the missing numbers in each sequence.

a) 72,000 | 73,000 | 74,000 | | | |

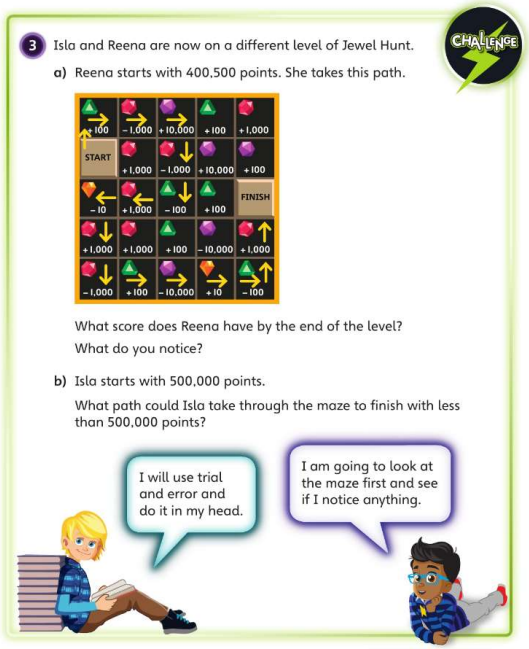
b) 272,700 | 272,800 | | | 273,100 | |

c) 738,006 | | | 438,006 | | |

2 Complete the table below for the number shown in the place value grid.

HTh	TTh	Th	H	T	O
1	4	7	3	0	0

100,000 less	47,300	100,000 more	247,300
10,000 less		10,000 more	
1,000 less		1,000 more	
100 less		100 more	
10 less		10 more	



The key word in Think Together is TOGETHER!

We are releasing the reins, and this task is GUIDED – not copying the teacher but guided by them. We may do a question together; let the children do the next one independently – then check/mark it together, showing the children the appropriate methodology.

Deeper Thinking Prompts

Which one is the odd one out? Explain how you know.	Somebody says that... Are they correct? Explain how you know.	Is it possible to... Explain how you know.
What comes next?	Spot and explain the mistake.	Sort these ... into groups. Is there another way?
What is... Explain how you know.	**Is it always true, sometimes true or never true that... Explain how you know.**	Somebody says the answer to ... is ... Are they correct? Explain how you know.
Here are three answers to the question ... Which is correct? Can you explain the different mistakes?	Somebody says ... and somebody else says ... Who is correct? Explain how you know.	Can you give an example of ... where...
Convince me that...	Give the children a provocative statement to prove or disprove. e.g. Numbers with two digits are always bigger than numbers with one digit.	**What is an example of... find another... and another that no-one else will think of... Explain what you notice.**
Arrange these questions in order of difficulty. Explain your choice.	Give me an easy question where the answer is... Give me a hard question where the answer is... Explain why one is harder than the other.	• If this is the answer, what is the question?
What do you notice? (Patterns, series of calculations with small changes)	If these are the workings out, what was the question? (Multistep)	**Give a piece of information (a calculation or a fact). What else do we know? And Why?**
What's the same and what's different? (Using three things where the children choose two to compare against the remaining item)	What's the same and what's different? (Using two things)	Inserting numbers (given or otherwise) into mathematical statements, etc. to achieve a desired effect.

Secure and Deepen It:

Secure It

Challenge mathematical thinking and understanding through tasks in journals.

Deepen It

Challenge higher level mathematical thinking and understanding through tasks in journals.

3 Jamie and Mo each have 20 cubes.

Jamie makes towers of 5 cubes.

Mo makes towers of 10 cubes.

Who makes the most towers?

20 ÷ 5 ◯ 20 ÷ 10

_____ makes the most towers.

4 Compare the following statements using <, > or =.

Try to complete them without working out the multiplications and divisions.

a) 8 × 5 ◯ 10 × 5

b) 3 × 3 ◯ 3 × 1

c) 4 × 10 ◯ 8 × 5

d) 24 ÷ 4 ◯ 24 ÷ 8

e) 7 × 2 ◯ 9 × 2

f) 40 ÷ 8 ◯ 40 ÷ 5

g) 24 ÷ 6 ◯ 24 ÷ 8

5 Fill in numbers to make the sentences correct.

Try to complete them without working out the multiplications and divisions.

a) 5 × 3 > ☐ × 3

b) 9 × 4 = ☐ × 9

c) 12 ÷ ☐ > 12 ÷ 4

d) 8 × ☐ < ☐ × 8

During this part of the lesson – adults 'helicopter' around the children to support as needed. Common misunderstandings should be addressed as a whole group by briefly stopping all.

What to do with 'rapid graspers'? Deepen it tasks in the children's workbooks and as snips for their journals.

‘Deepen It’ challenges

Rosie and Amir are comparing numbers they have made.

Rosie's number

Amir's number

My number is greater because I have more objects.

Is Rosie correct?

Explain your answer.

How many different numbers can go in the box?

$$13 < \square < 20$$

True or False?

One ten and twelve ones is bigger than 2 tens.

Explain how you know.

How many ways?

$$\begin{array}{r} \square 5 \\ -\,5\square \\ \hline \square 6 \end{array}$$

Fill in the missing digits.

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

Missing digits

$$\begin{array}{r} 34\square \\ -\,\square\square 2 \\ \hline \square 94 \end{array}$$

Fill in the missing digits.

Reflect:

Reflect

Reflect on and discuss our learning journey together.

Finally we draw the group back together to review our new learning together.

KEEP UP, NOT CATCH UP!

We will use TA time in the afternoons to pick up children who've not completed significant enough practice, who have misconceptions, who have not understood or who need a little consolidation.

Helping at home

Talk about number in everyday life – baking, shopping, money, time

Support your children with their home learning and question – how do you know, what do you notice, convince me

Use manipulatives to help – pasta pieces, number lines, money

Have a 'Can-do' attitude – mistakes help us learn; power of 'yet'

Complete our weekly home learning in KS1, based on number fact knowledge…

… and watch this space for EYs!

Times Tables: What do we need to be able to do?

- In the table below are the National Curriculum times tables expectations for each year group. The children will be tested on their times tables regularly in school.

Expectations for times tables for each year group	
Year 1	Count in multiples of 2, 5 and 10. Recall and use all doubles to 10 and corresponding halves.
Year 2	Recall and use multiplication and division facts for the 2, 5 and 10 times tables including recognising odd and even numbers.
Year 3	Recall and use multiplication and division facts for the 3, 4 and 8 times tables.
Year 4	Recall and use multiplication and division facts for tables up to 12 x 12
Year 5	Revision of all times tables and division facts up to 12 x 12
Year 6	Revision of all times tables and division facts up to 12 x 12

Thank you!

WE ARE STAYING FOR A LITTLE WHILE IF YOU HAVE ANY QUESTIONS!