



English and Maths at St John's





Phonics

Complex Speed Sounds

Consonant sounds

| | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|
| f | l | m | n | r | s | v | z | sh | th | ng |
| ff | ll | mm | nn | rr | ss | ve | zz | ti | th | nk |
| ph | le | mb | kn | wr | se | c | s | ci | | |

| | | | | | | | | | | | | |
|----|----|----|----|-----|----|----|----|----|----|---|---|-----|
| b | c | d | g | h | j | p | qu | t | w | x | y | ch |
| bb | k | dd | gg | g | ge | pp | | tt | wh | | | tch |
| ck | ch | | | dge | | | | | | | | |

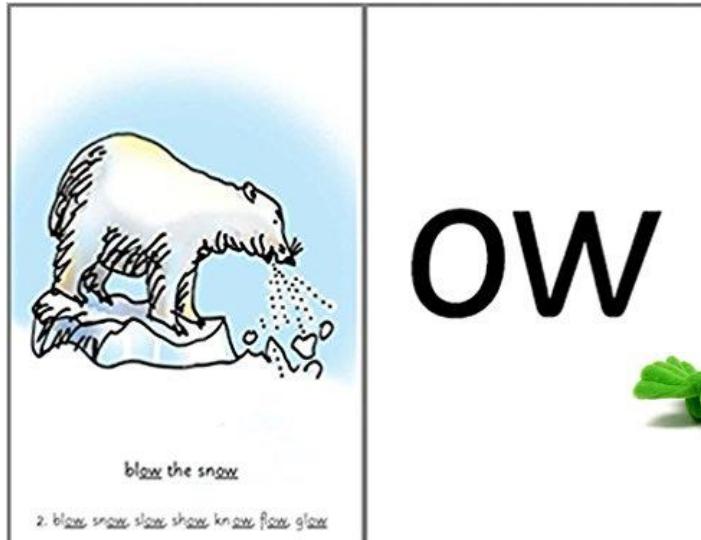
Vowel sounds

| | | | | | | | | |
|----|---|---|---|---|-----|----|-----|-----|
| a | e | i | o | u | ay | ee | igh | ow |
| ea | | | | | ā-e | y | i-e | ō-e |
| | | | | | ai | ea | ie | oa |

| | | | | | | | |
|-----|----|----|-----|-----|----|----|----|
| oo | oo | ar | or | air | ir | ou | oy |
| u-e | | | oor | are | ur | ow | oi |
| ue | | | ore | | er | | |

| | | | | | | | |
|----|----|--|--|--|--|--|--|
| aw | au | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | |
|-----|-----|------|------|
| at | mad | I | the |
| . | . | . | . |
| sad | dad | you | your |
| . | . | . | . |
| sat | mat | said | was |
| . | . | . | . |





Spelling

Spelling Phases

1. Explore & Investigate

2. Explore, Investigate & define

3. Teach, Model & Use

4. Practise

5. Reflect

6. Revisit & Practice

7. Revisit & Explore

8. Use, Apply & Assess



KS1 - Carousel Guided Reading

| | Yellow | Green | Blue | Purple | Red |
|-----------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Monday | Read with teacher | Skills | Comprehension task | Quiet reading | SPaG |
| Tuesday | SPaG | Read with teacher | Skills | Comprehension task | Quiet reading |
| Wednesday | Quiet reading | SPaG | Read with teacher | Skills | Comprehension task |
| Thursday | Comprehension task | Quiet reading | SPaG | Read with teacher | Skills |
| Friday | Skills | Comprehension task | Quiet reading | SPaG | Read with teacher |



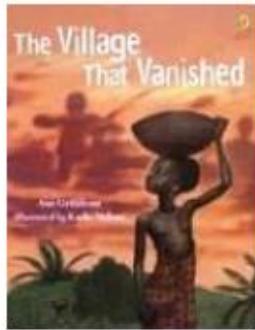
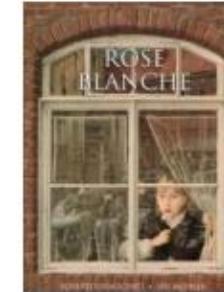
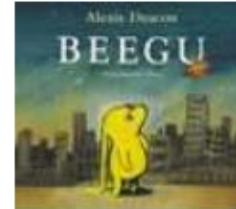
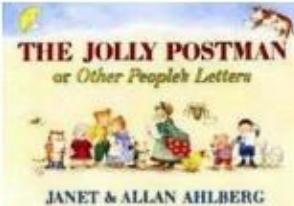
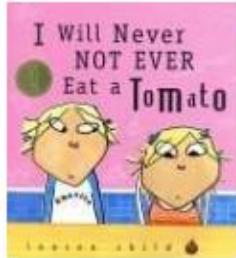
KS2 – Whole Class Reading

| Word Experts | Information Retrievers | Justifying with Evidence | Digging for Deeper Meaning | Life Long Readers |
|--|--|--|--|-----------------------------|
| 2a- give/explain the meaning of words in context | 2b- retrieve and record information | 2d- make inferences from the text/explain and justify inferences with evidence from the text | 2f- identify/explain how information/narrative content is related and contributes to meaning as a whole | Develop a love for reading! |
| | 2c- summarise main ideas from more than one paragraph 2e- predict what might happen from details stated and implied | | 2g- identify/explain how meaning is enhanced through choice of words and phrases 2h- make comparisons within the text | |

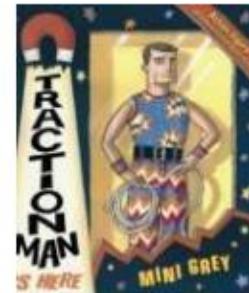
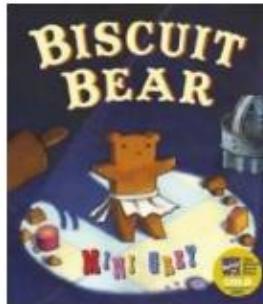
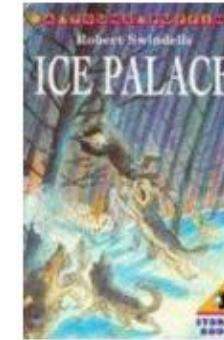


Writing

Quality children's literature at the heart of all learning



The Power of Reading High Quality Texts





What is the Power of Reading?

- The Power of Reading is about teaching Literacy through using high quality books and creative teaching approaches (such as art and drama).
- This approach aims to engage and motivate children in their literacy learning.
- It also enables children to deepen their understanding of texts and provides a meaningful context for writing.





How are the texts used?

- A quality text will be used as the basis for learning over several weeks.
- Children will explore and discuss the text through creative activities.
- They will also write in a range of genres as part of the unit. For example they might write a letter in role as a character or write a newspaper recount about the events in the text.





Cross-curricular literacy

- Engages and motivates
- Supports and challenges all children through a range of experiences that create a broad and rich basis for writing.

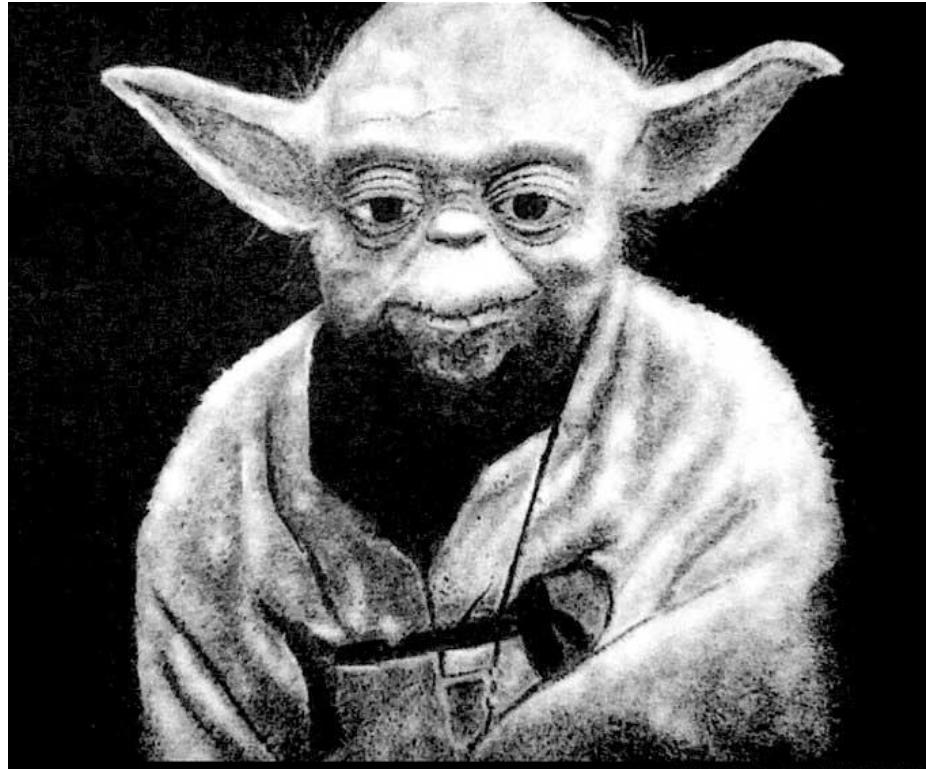
Our national curriculum

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace.

Pupils who grasp concepts rapidly should be challenged through rich and sophisticated problems.

- become **fluent** in the fundamentals of maths, including through **varied** and **frequent** practice, so that pupils develop conceptual understanding and **recall and apply** knowledge
- **reason** mathematically by following a line of enquiry, **conjecturing relationships** and **generalisations**, and using **mathematical language**
- can solve problems by **applying** their mathematics to a variety of **routine and non-routine problems**.

What does it
mean to
master
something?



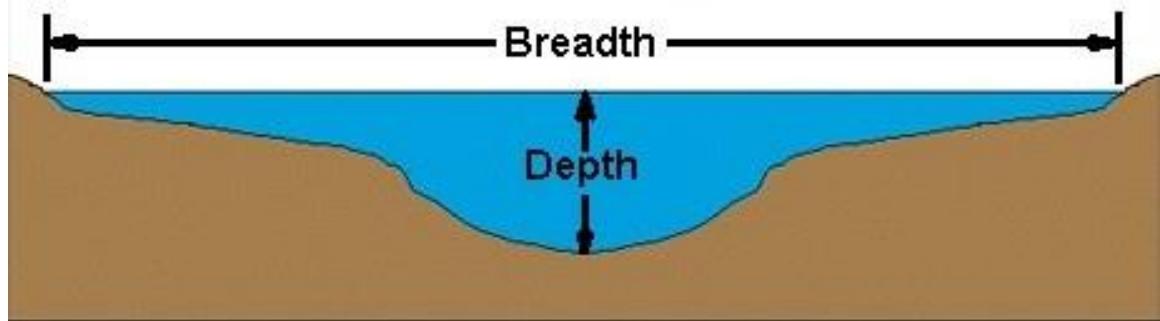
Mastery of Maths is more...

- Achievable for all
- **Deep** and sustainable learning
- The ability to build on something that has already been sufficiently mastered
- The ability to reason about a concept and make connections
- Conceptual and procedural fluency

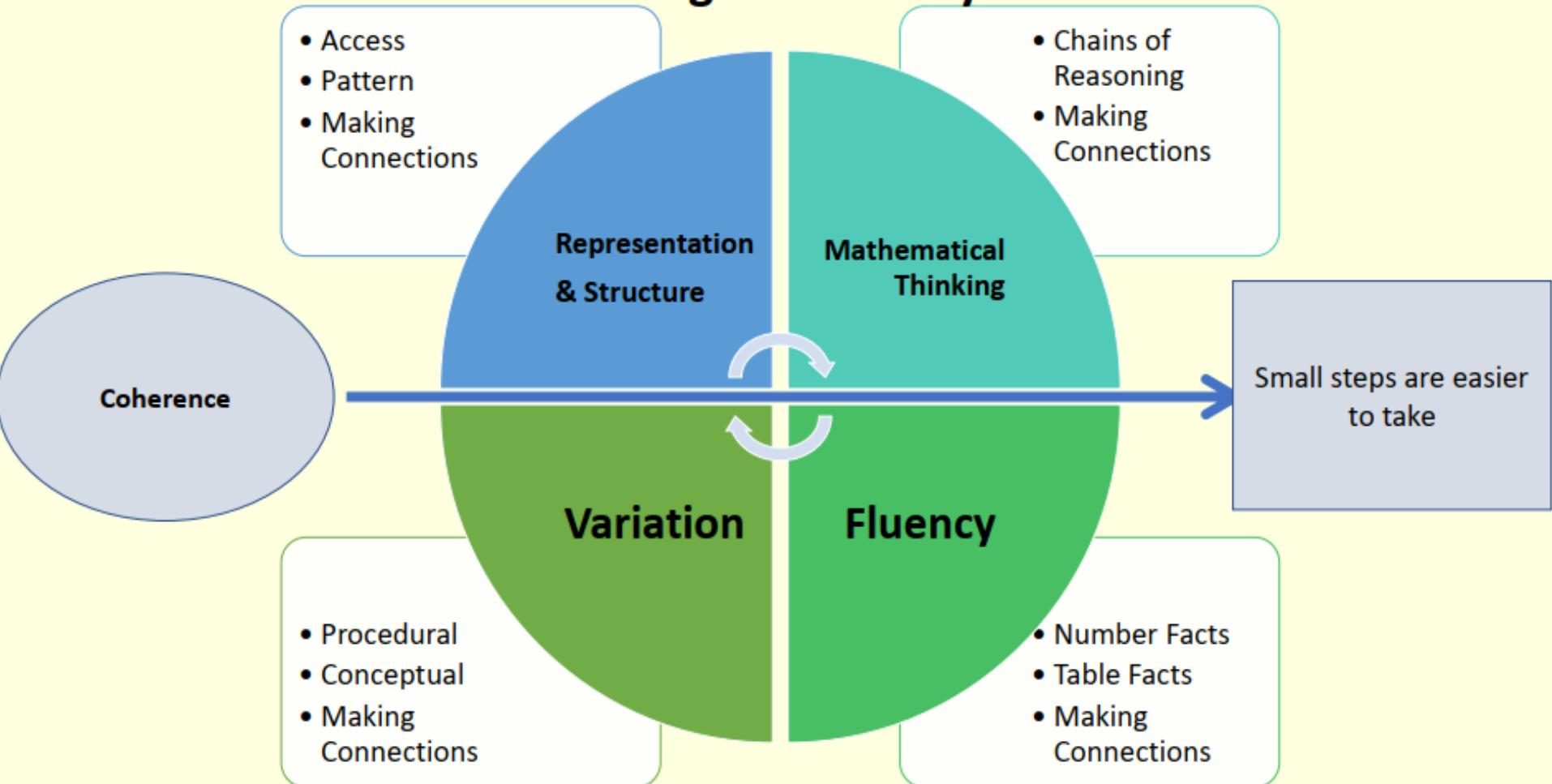
Teaching for Mastery

- The belief that all pupils can achieve
- Keeping the class working together conceptually so that all can access and master mathematics
- Development **of deep** mathematical understanding
- Development of both factual/procedural and conceptual fluency
- Longer time on key topics, providing time to go deeper and embed learning

What is depth?



Teaching for Mastery



Concrete Pictorial

Representation and structure

"Meaning does not reside in tools; it is constructed by students as they use tools"

(Hiebert 1997 p 10) Cited in Russell (May, 2000). *Developing Computational Fluency with Whole Numbers in the Elementary Grades*



So, the more that we use different representations and structures to vary the presentation of concepts when teaching, the more children will be able to approach problem solving from different angles.

CONCRETE

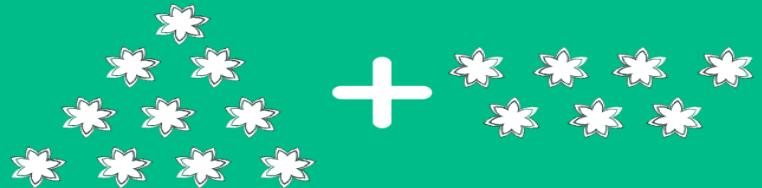


Children might begin by handling real objects...



...then using physical representations of them.

PICTORIAL

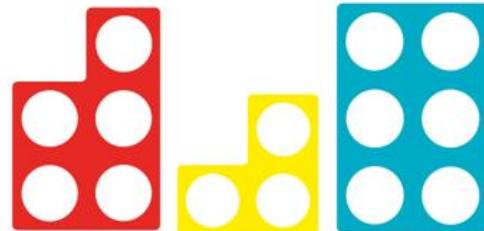
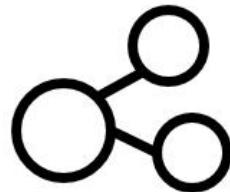
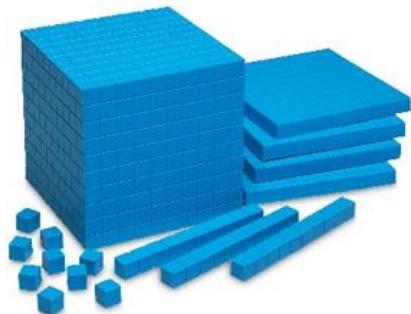


Drawings act as a bridge between the concrete objects children have been using and the abstract symbols they must learn to use.

Finally, children learn to use abstract symbols to solve problems.

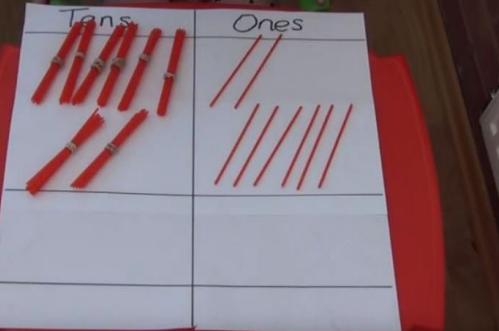
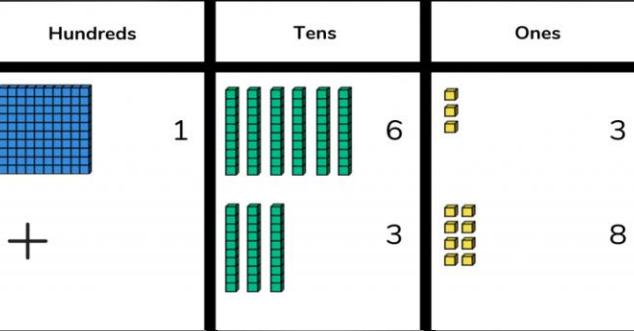
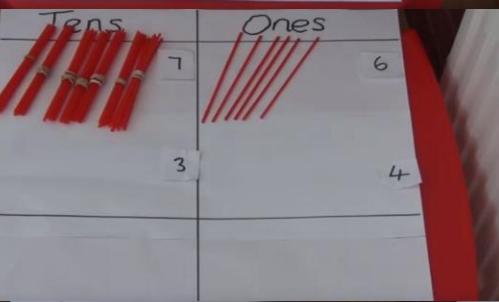
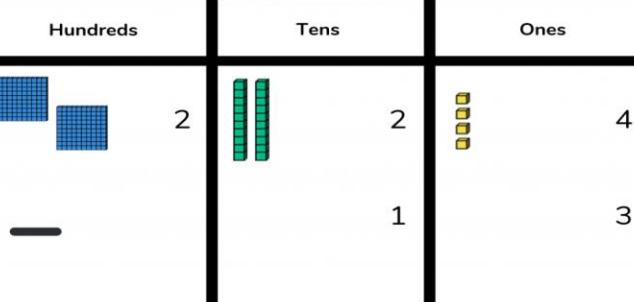
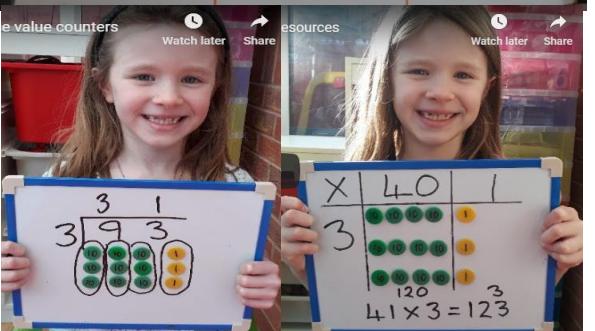
$$10 + 7 = 17$$

We use a range of resources to develop mathematical thinking



| | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 9000 |
| 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
| 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 |
| 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.008 | 0.009 |



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|---|---|--|
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|  |  |  |

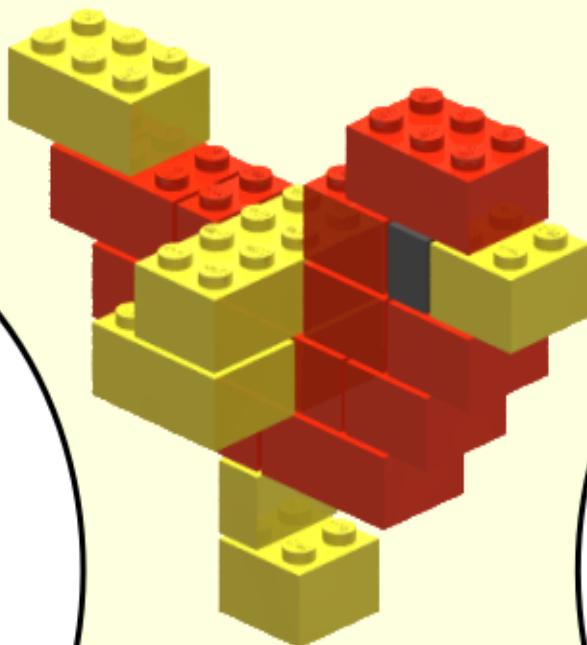
Once children are confident using the concrete resources they can then record them pictorially, again recording the digits alongside to ensure links are constantly being made between the concrete, pictorial and abstract stages.



Divergent Thinking in Mathematics



- Year 1**
- Dinosaur
 - Chicken
 - Puppy
 - One-legged hen
 - Bird
 - House
 - Aeroplane
 - Cockerel
 - Magpie
 - Toucan
 - Robin
 - Bunny



What have I built?

- Year 6**
- Bird
 - Chicken
 - Rooster
 - Duck
 - Lego

What is the same and what is different about the play we might see with these objects?



In order to understand a mathematical concept, children need to be able to see **what it is** and **what it is not**. In order to do this, they need to be able to be divergent thinkers.

Very young children naturally see multiple possibilities in the world around them.

Play-based learning in the EYFS encourages divergent thinking; children create and explore multiple possibilities through meaningful structured and spontaneous experiences where high-quality talk is promoted.



Why do we give children varied experiences?



We want children to be able to generalise about mathematical concepts.

This is when children, through the carefully varied experiences they have had, develop understanding of the maths concept and are able to apply this to varied contexts.

One of the most aspects important pre-number learning is **attribute discrimination**. This is being able to see what something is based on its attributes and is linked to sorting, matching, comparing and naming.

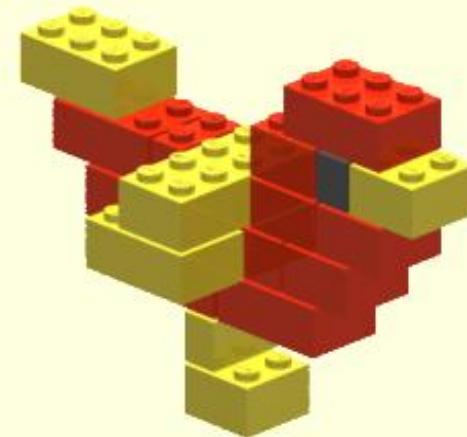
Children have to be able to do this in order to be able see something as a **set** as opposed to **all**.



Through our maths teaching...

How can we develop children's divergent thinking through?

How can we develop their attribute discrimination capabilities?



VARIATION

Varying the way a concept is presented, giving examples that **reveal what it is**, and examples of **what it isn't**.

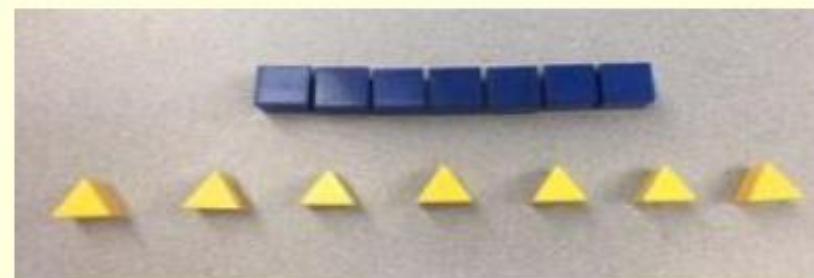
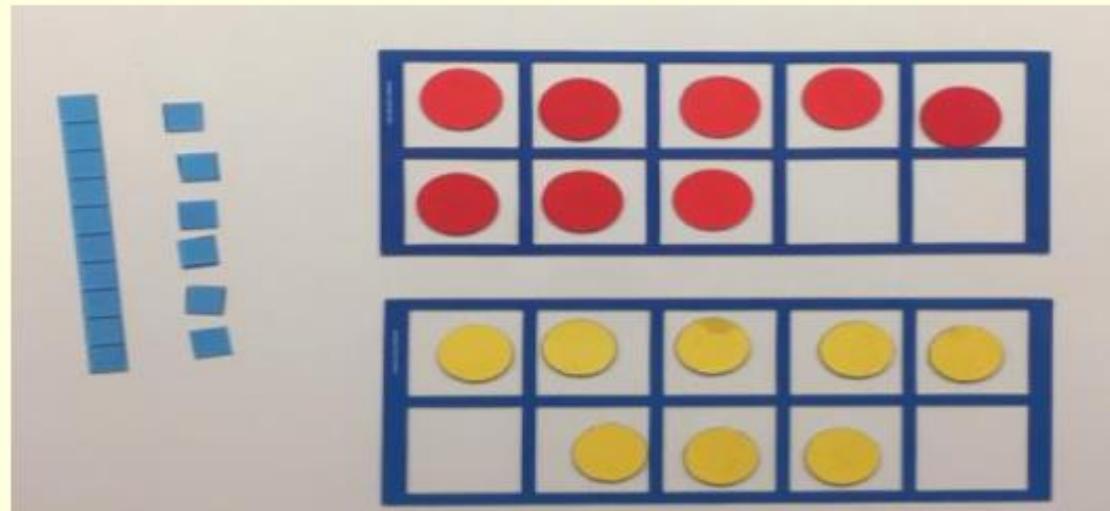
Also, **carefully varying practice questions** so that mechanical repetition is avoided, and **thinking** is encouraged.

It is generally perceived as one of the most valuable experiences within Chinese mathematics education community (Sun, 2011).



Conceptual Variation

What's the same? What's different?



Conceptual and Procedural Variation

Conceptual Variation

What is? What isn't?

Same? Different?

Procedural Variation

What's changed? What's stayed the same
between each step?

| | | | |
|------|----|-----|-----|
| | x | 20 | + 6 |
| 26 | | | |
| x 33 | 30 | 600 | 180 |
| 78 | | | |
| 780 | + | | |
| 858 | 3 | 60 | 18 |

$5 \times 3 =$

$5 \times 30 =$

$5 \times 300 =$

$7 \times 5 =$

$7 \times 50 =$

$7 \times 500 =$

$5 \times 7 =$

$5 \times 70 =$

$5 \times 700 =$

$3 \times 5 =$

$3 \times 50 =$

$3 \times 500 =$

2 用自己喜欢的方法计算、谁快?

$5 \times 400 =$

$8 \times 300 =$

$10 \times 700 =$

$5 \times 900 =$

$4 \times 800 =$

$9 \times 700 =$

$4 \times 900 =$

$4 \times 800 =$

$4 \times 700 =$

$7 \times 800 =$

$6 \times 800 =$

$5 \times 800 =$

$180 \div 2 =$

$160 \div 4 =$

$480 \div 6 =$

$500 \div 5 =$

$180 \div 20 =$

$160 \div 40 =$

$480 \div 60 =$

$500 \div 50 =$

$270 \div 30 =$

$270 \div 3 =$

$540 \div 90 =$

$400 \div 80 =$

$270 \div 90 =$

$270 \div 9 =$

$540 \div 9 =$

$400 \div 8 =$

addition calculation as
an example: $289 + 653$

$$\begin{array}{r} 289 \\ + 653 \\ \hline = 942 \end{array}$$

How You Can Dive Into This Seemingly Simple Question In More Detail

- If all children can ‘do’ the addition, have they mastered it?
- On the surface, it would appear so, but it tells you absolutely nothing about their knowledge and understanding of the numbers involved.
- Greater depth in maths in this instance means interacting with the numbers and getting to know them. You could ask a whole range of questions:
 - *How many prime numbers can you see?*
 - How many square numbers are there?
 - Does the ‘ones’ column contain any cube numbers?
 - Does the ‘hundreds’ column contain any perfect numbers?
 - Can you find the digital root of the first row of numbers ($2 + 8 + 9 = 19$, $1 + 9 = 10$, $1 + 0 = 1$)
 - Is the digital root of the second row greater than or less than the digital root of the answer?
 - If you add up all the digits does this make a triangular number? (e.g. $2 + 8 + 9 + 6 + 5 + 3 + 9 + 4 + 2 = 48$no, the nearest triangular number is 45).
 - How is the answer to the addition written in Roman numerals? (CMXLII)

$0.7 \times 9 =$

How would you work out the answer to this calculation?

What is the answer?

$$0.7 \times 9 = 6.3$$

I would begin with the base fact of 7×9 which is 63.

Progression in reasoning skills



$$7 \times 9 = 63 \quad \text{Henry}$$

$$0.7 \times 9 = 6.3$$

I would begin with the base fact
 7×9 and then I notice that 0.7×9
is 6.3 because $9 \times 7 = 63$
then you add a decimal point in between

the 6 and 3 so it makes

- 6.3

I would start with the base fact 7×9 which is 63. I know that 0.7×9 is 6.3 because 0.7 is 10 times smaller than 7 so $63 \div 10$ is 6.3.

White Rose Maths resources

Year 1 - Yearly Overview

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 | |
|---------------|---|--------|--------|---|--------|--------|----------------------------------|--------|--------|---------------------------------|---------|---------|---------------|
| Autumn | Number: Place Value (within 10) | | | Number: Addition and Subtraction (within 10) | | | Geometry: Shape | | | Number: Place Value (within 20) | | | Consolidation |
| Spring | Number: Addition and Subtraction (within 20) | | | Number: Place Value (within 50) (Multiples of 2, 5 and 10 to be included) | | | Measurement: Length and Height | | | Measurement: Weight and Volume | | | |
| Summer | Number: Multiplication and Division (Reinforce multiples of 2, 5 and 10 to be included) | | | Number: Fractions | | | Geometry: position and direction | | | Time | | | |

Year 1 - Autumn Term

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 | |
|----------------|--|--------|--------|--|--------|--------|---|--------|--------|--|---------|---------|---------------|
| Week 1 | Number: Place Value | | | Number: Addition and Subtraction | | | Geometry: Shape | | | Number: Place Value | | | Consolidation |
| Week 2 | Count to 10 forwards and backwards, beginning with 0 or 1. | | | Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. | | | Identify and represent numbers using objects and pictorial representations including the number line (fewer), mathematical language of equal to, more than, less than (fewer), most, least. | | | Count, read and write numbers to 20 in numerals and words. | | | |
| Week 3 | Count to 10 forwards and backwards, beginning with 0 or 1. | | | Add and subtract one digit numbers to 10, including zero. | | | Add one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Count, read and write numbers to 20 in numerals and words. | | | |
| Week 4 | Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 5 | Identify one more or one less. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 6 | Given a number, identify one more or one less. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 7 | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 8 | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 9 | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 10 | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 11 | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |
| Week 12 | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems. | | | Recognise and name common shapes, including: cubes (including cuboids), spheres, pyramids and cones. | | | Given a number, identify one more or one less. | | | |

Year 1 | Autumn Term

Sorting Objects

Reasoning and Problem Solving

How can the objects be sorted?

They have been sorted into colours.

They could have been sorted into 4 petal flowers and 5 petal flowers.

Red and yellow fruit and non-fruit 5 and 3

They can be sorted into:

How have the objects been sorted?

Year 1 | Autumn Term | Small Steps Progression

Overview

Small Steps

- Week 1 to 4 – Number: Place Value (within 10)
- Week 5 to 8 – Number: Place Value (within 20)
- Week 9 to 12 – Number: Place Value (within 100)

NC Objectives

- Count to ten, forwards and backwards, beginning with 0 or 1; or from any given number.
- Count, read and write numbers to 10 in numerals and words.
- Given a number, identify one more or one less.
- 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.

Year 1 | Autumn Term | Teaching Guidance

Notes and Guidance

To build on skills learned in Early Years, children need to sort groups by characteristics before they count. Children should be encouraged to sort groups in a variety of ways. For example, sorting a group of children into girls and boys or sorting counters by colour.

Mathematical Talk

How can you sort the objects?
How have you grouped the objects?

Varied Fluency

- Son the counters into groups and explain how you have sorted them.
- Sort the fruit into groups and explain how you have sorted them.
- How many ways can you sort the children into groups?

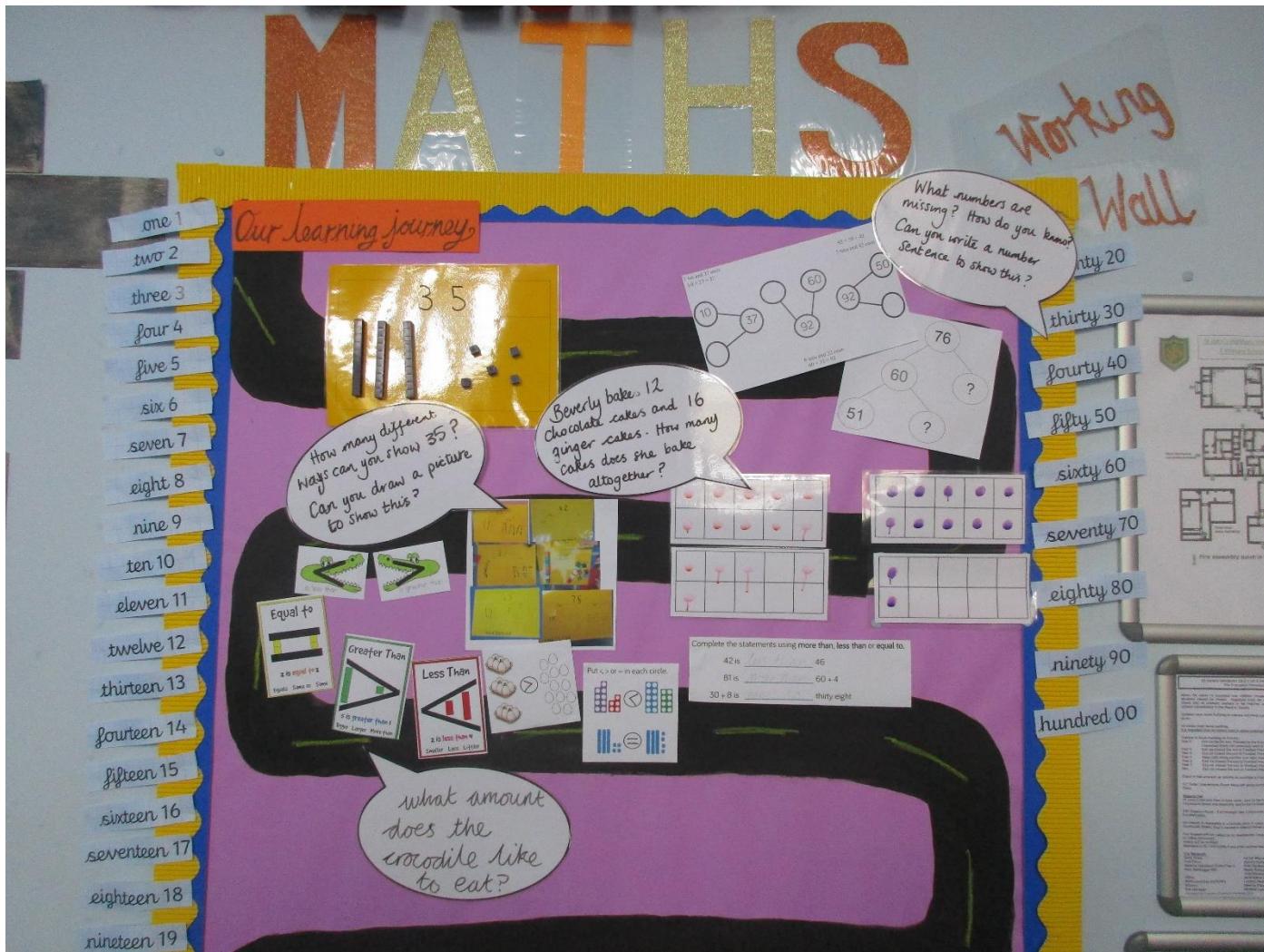
Week 1 to 4 – Number: Place Value

- Sort objects
- Count objects
- Represent objects
- Count, read and write forwards from any number 0 to 10
- Count, read and write backwards from any number 0 to 10
- Count one more
- Count one less
- One to one correspondence to start to compare groups
- Compare groups using language such as equal, more/greater, less/fewer
- Introduce =, > and < symbols
- Compare numbers
- Order groups of objects
- Order numbers
- Ordinal numbers (1st, 2nd, 3rd ...)
- The number line

NCTEM resources



Working Walls



That's
A
Wrap!