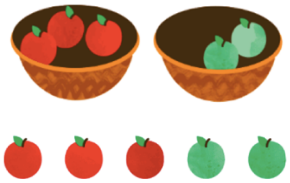
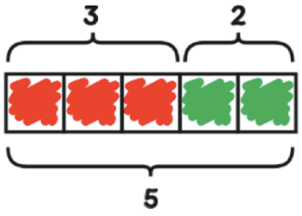
Maths: Teaching and Learning at SVSJ

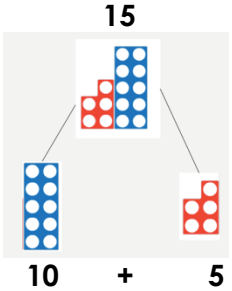
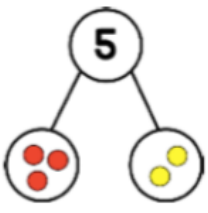
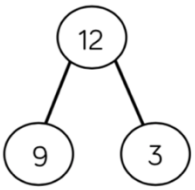
Concrete, Pictorial, Abstract Approach:

- At St Vigor and St John, we aim to use a range of concrete, pictorial and abstract resources to allow our children to become fluent in problem solving across a progressive sequence of lessons.
- Our calculation progression policy is reflective of this approach.
- The CPA approach has been adopted by Singapore – a country which has proven that this technique facilitates teaching maths for mastery.
- Within a lesson (and/or across a sequence of lessons), we aim to expose children to an array of different concrete resources, pictorial representations, and subsequent abstract calculations to develop mathematical fluency in our children:

Concrete	Pictorial	Abstract
		3 + 2 = 5
KS1: Progressive Concrete, Pictorial, Abstract for Adding 2, 1-digit numbers		

Part-Whole Models:

- Across *EYFS, Key Stage 1* and *Key Stage 2*, we use part-whole models to represent how numbers can be split into parts.
- These models allow children to see the relationship between the whole number and the component parts.
- This helps our children make connections between addition and subtraction.

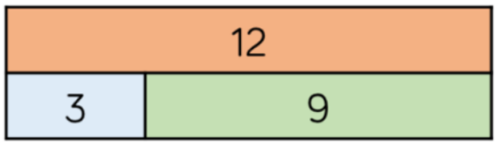
		
Numicon as a Part Whole	Counters as a Part Whole	Numerals as a Part Whole

Maths: Teaching and Learning at SVSJ

Bar Models:

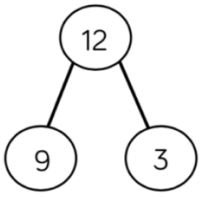
- To complement part-whole models, across *Key Stage 1* and *Key Stage 2* we use bar models.

Bar Model



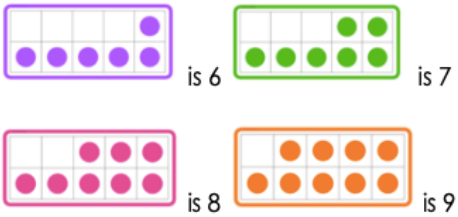
3 + 9 = 12

Part-Whole Model



9 + 3 = 12

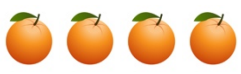
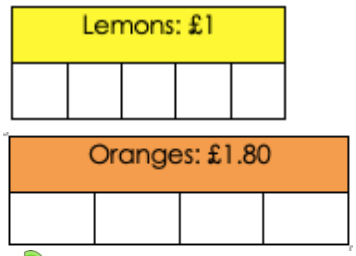
- During EYFS, children are introduced to 10-frame models which underpin the bar model structures that are embedded in lessons from Year 1 to 6.

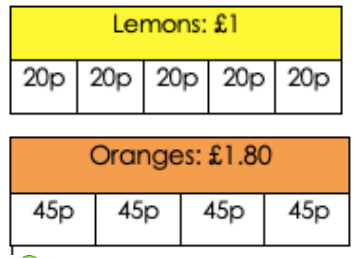


- Introducing bar models assists our children in visualising a problem structure.
- Bar models underpin mathematics teaching in Singapore – clearly reflecting the effectiveness of these models in allowing children to go from a word problem to a solution via different representations.
- At St Vigor and St John, we use the bar model method to secure our children's knowledge of 'what' they are doing and 'why' they are doing it by noticing the relationship between number.

<table>
<tr><th>Word Problem:</th><th colspan="2">Bar Models
A whole split into EQUAL parts</th><th>Solution</th></tr>
<tr><td>A bag of 5 lemons costs £1. A bag of 4 oranges costs £1.80. How much more does one orange cost than one lemon?


£1


£1.80</td><td>Part 1:


 Lemons: 1 whole (£1) chopped into 5 equal parts.
 Oranges: 1 whole (£1.80) chopped into 4 equal parts.</td><td>Part 2:


 Lemons: £1 ÷ 5 = 20p
 Oranges: £1.80 ÷ 4 = 45p</td><td>Therefore...
45p-20p =25p
So....
oranges cost 25p MORE than oranges.</td></tr>
<tr><td colspan="4">Example drawn from UKS2 teaching</td></tr>
</table>

Maths: Teaching and Learning at SVSJ

Developing Times Table Recall:

- To facilitate times table recall, SVSJ use TT Rockstar, and The Ashley Down Times Table Scheme
- Children from Year 2-6 each have an individual TT Rockstar log-in.
- This scheme is a carefully sequenced programme designed for daily times table practice. This will be set at home learning.
- Every week, progress in times tables on TT Rockstar is celebrated by children receiving 'rock status' certificate.

ASHLEY DOWN SCHOOLS FEDERATION

Suggested Times Table Overview:

Year 3			Year 4				
2 x	**5 x**	**3 x**	**4 x**	**6 x**	**7 x**	**8 x**	**9 x**
2 x 2							
3 x 2	3 x 5	3 x 3					
4 x 2	4 x 5	4 x 3	4 x 4				
5 x 2	5 x 5						
6 x 2	6 x 5	6 x 3	6 x 4	6 x 6			
7 x 2	7 x 5	7 x 3	7 x 4	7 x 6	7 x 7		
8 x 2	8 x 5	8 x 3	8 x 4	8 x 6	8 x 7	8 x 8	
9 x 2	9 x 5	9 x 3	9 x 4	9 x 6	9 x 7	9 x 8	9 x 9
8 facts	**7 facts**	**6 facts**	**5 facts**	**4 facts**	**3 facts**	**2 facts**	**1 fact**
By end of Y3: 21 facts learnt 15 facts still to learn			By end of Y4: 15 facts learnt to complete building blocks 21 more facts for times table check (see below)				