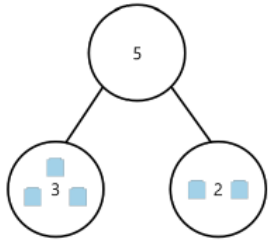
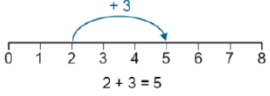
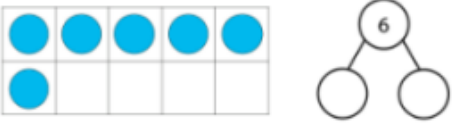
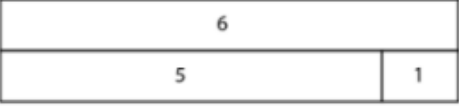
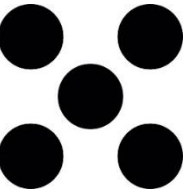
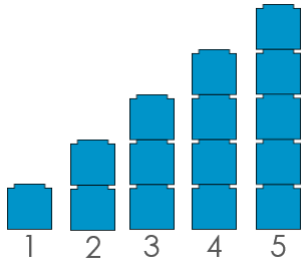
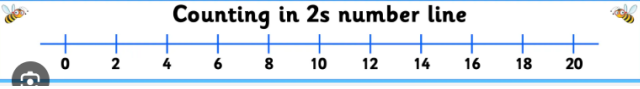
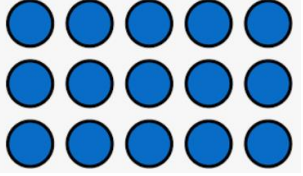





**Portsmouth Primary Maths Calculation Policy**  
**Appendix – Core models and images**

Year R	Year 1	Year 2				
<p><b>cherry model</b></p>  <p><b>unitary number line</b></p>  <p>5 and 10s frame and double sided counters</p>  <p><b>bar model</b></p>  <p><b>Hungarian dice patterns</b></p>  <p><b>Numberblocks</b></p> 	<p><b>As Year R plus...</b></p> <p><b>Problem solving sentence stems:</b></p> <p>First...</p> <p>Then... used alongside bar models</p> <p>Now...</p> <p>number lines in 2s, 5s and 10s(non-unitary)</p>  <p>10s frames and double sided counters</p> <p>100 squares</p> <p>arrays</p> 	<p><b>As Year 1 plus...</b></p> <p><b>Problem solving sentence stems:</b></p> <p>First...</p> <p>Then... used alongside bar models</p> <p>Next... <i>(if 2 step problem only)</i></p> <p>Now...</p> <p>For every... there are...</p> <p>Example:</p> <table border="1" data-bbox="1473 938 2132 1104"> <tr> <td>For every 1 hour</td> <td>there are 60 minutes</td> </tr> <tr> <td> </td> <td> </td> </tr> </table> <p>Link time to fractions</p> 	For every 1 hour	there are 60 minutes		
For every 1 hour	there are 60 minutes					

# Portsmouth Primary Maths Calculation Policy

## Year 3

As KS1 plus...

Problem solving sentence stems:

First...

Then... used alongside bar models

Next... (if 2 step problem only)

Now...

For every... there are...

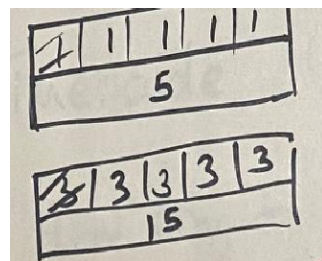
Example:

For every £1	there are 100 pence
So £4	is 400 pence

Equivalent fractions or fractions of amounts using bar models:

part	part	=	1	1	=	4	4
whole			2	8			

Change number of equal parts based on fraction when finding equivalence!

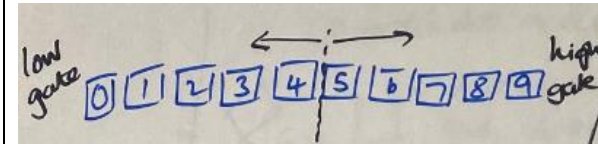


Example for fifths

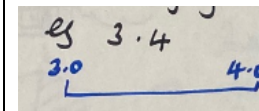
## Year 4

As Year 3 plus...

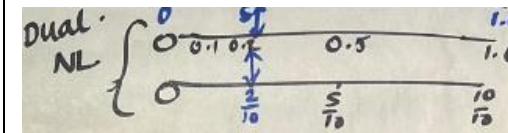
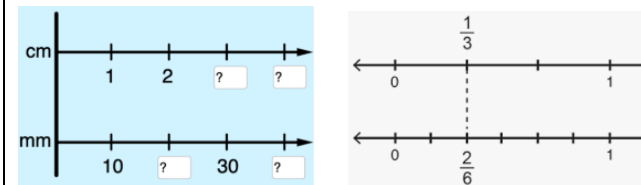
Rounding -> Identify the gate keepers



Rounding on a number line with gate keepers identified:



Double number lines: for FDP or measures!



Gattegno or G-chart for x and ÷ 10 and 100

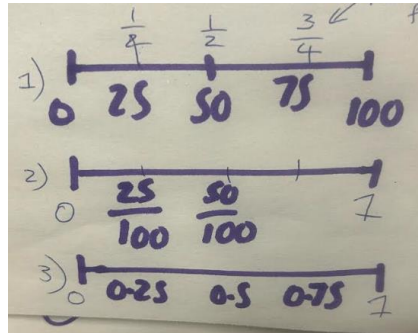
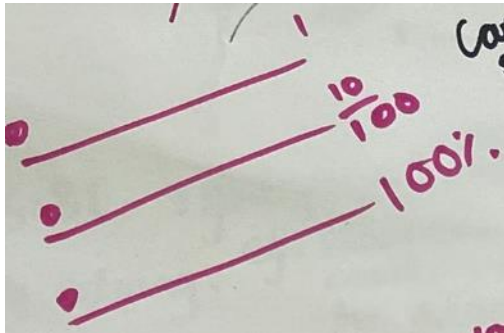
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

# Portsmouth Primary Maths Calculation Policy

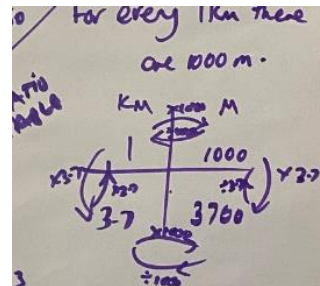
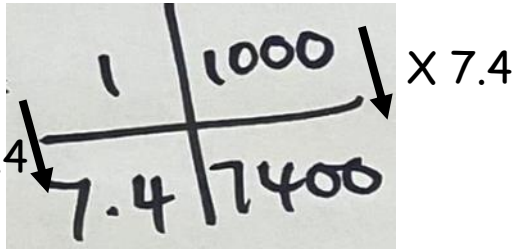
## Year 5

As Year 4 plus...

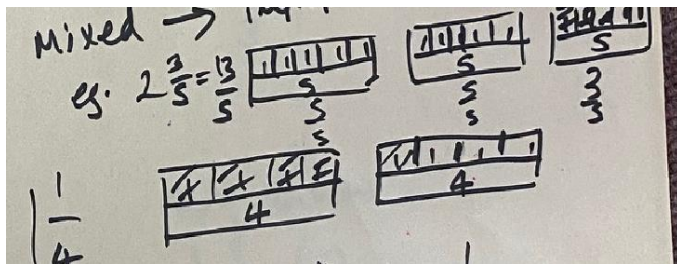
Triple number lines (FDP)



Ratio tables (Building on the For every... there are...)



Bar models for mixed numbers/improper fractions



## Year 6

As Year 5 plus...

Developing the G charts for finding % of an amount

