

Year 3 Maths Overview of objectives from white rose:

Division and Multiplication:

Multiplication - equal parts

Multiplication using the symbol

Using arrays

2 times-table

5 times table

Make equal groups - sharing

Make equal groups - grouping

Divide by 2

Divide by 5

Divide by 10

Multiply by 3

Divide by 3

The 3 times table

Multiply by 4

Divide by 4

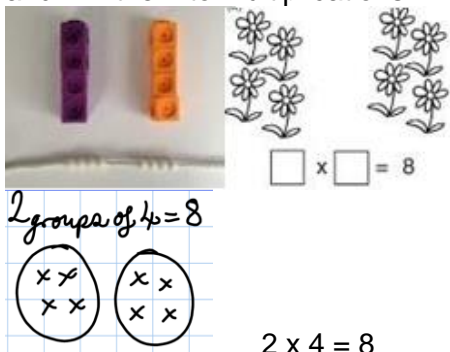
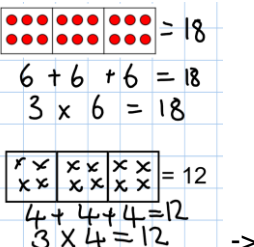
The 4 times table

Multiply by 8


Divide by 8

The 8 times table

Objectives organised with mental strategies incorporated:

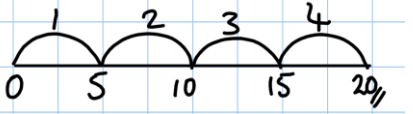
Aims:	Strategies, images and models:	
<p>Aim: To understand multiplication as equal parts and use the multiplication symbol. (1 or 2 days)</p>	<p>Pupils can make and draw equal groups and link them to multiplications.</p>  <p>2 groups of 4 = 8</p> <p>$2 \times 4 = 8$</p>	<p>Chdn get used to images with multiplications to show they understand grouping as multiplication.</p>
<p>Aim: To understand that repeated addition is multiplication. (2 or 3 days)</p>	 <p>$6 + 6 + 6 = 18$</p> <p>$3 \times 6 = 18$</p> <p>$4 + 4 + 4 = 12$</p> <p>$3 \times 4 = 12$</p> <p>-></p>	<ul style="list-style-type: none"> -Pictorial linked to both sentences -Numberline Given -Numberline Own -Varied Fluency Pictorial and Numberline -Reasoning and Problem solving. <p>Chdn become fluent in writing and matching repeated addition and multiplication sentences.</p>

5 x 3



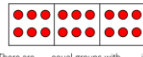
$3 + 3 + 3 + 3 + 3 = 15$

$4 \times 5 = 20$



$5 + 5 + 5 + 5 = 20$

Complete the sentences to describe the equal groups.



$__ + __ + __ = 18$
 $__ \times __ = 18$

There are $__$ equal groups with $__$ in each group.
 There are three $__$.

Complete:

Three 2s	Draw it	Addition	Multiplication
There are 3 equal groups with 2 in each group.			


Complete:


Addition	Multiplication	Story
$10 + 10 + 10$	6×5	


Must have a numberline method as this supports mental calculation and counting on fingers.

Aim: To reason about multiplication as equal parts and use the multiplication symbol.
 (1 or 2 days)

Which row of money is the odd one out?








The first two rows have 4p in each group, and 12p in total.

The third row has 5p in each group, so 15p in total.

The third group is therefore the odd one out.


 $3 + 3 + 3 = 3 \times 3$

Is Mo correct? Explain why.




Draw an image to help you.




Use $<$, $>$ or $=$ to make the statements correct.

3×5 ☐ $5 + 5 + 5 + 5$
 2×2 ☐ $2 + 2$
 10×2 ☐ $5 + 5 + 5$

$2 \times 2 = 2 + 2$
 $10 \times 2 > 5 + 5 + 5$

Match the equal groups together.

 Three 5s
 Two 10s
 Two 5s

 Three 5s
 Two 10s
 Two 5s

He is correct because $3 + 3 + 3 = 9$ and $3 \times 3 = 9$

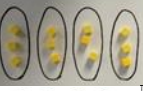

Sweets, squares, two 5s

Dice, cubes, three 5s

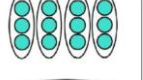

Coins, number pieces, two 10s.

Chdn now use their knowledge of annotating groups and images to find the calculations and make links to other groups. Instructions like - draw, use a numberline, write an addition sentence, can be used to show chdn how to complete the challenges.

To use arrays to represent multiplication.
 (2 days)

Use an array to write multiplication sentences and reinforce repeated addition.

$5 + 5 + 5 = 15$

$3 + 3 + 3 + 3 + 3 = 15$

$5 \times 3 = 15$

$3 \times 5 = 15$

Fluency -Chdn understand the way that multiplication is commutative by exploring drawings and making their own drawings of different arrays for the same calculations.

- Object arrays (so they know it's the same number)
- Drawing arrays
- Linking arrays and repeated addition to the related multiplications.

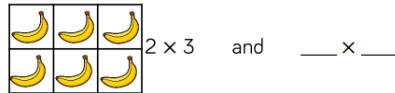
To use arrays to represent multiplication. (1 day varied Fluency)

On the image, find 2×5 and 5×2



Can you represent this array using another object?

Complete the number sentences to describe the arrays.



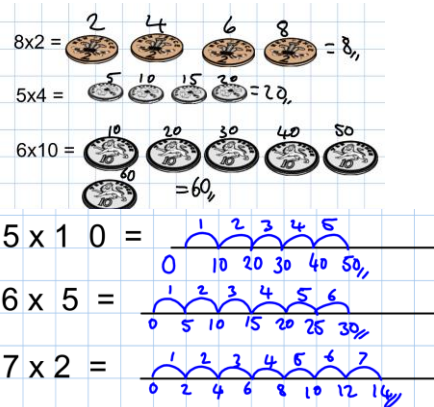
Draw an array to show:

$$4 \times 5 = 5 \times 4$$

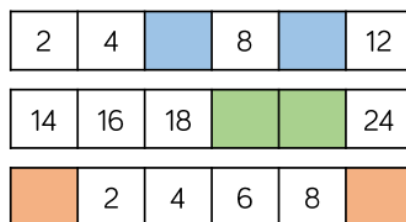
$$3 \text{ lots of } 10 = 10 \text{ lots of } 3$$

Chdn being asked to read arrays and use their own images to represent them. Being asked to show a calculation as both sets of arrays. Nothing too complicated - just an extension.

Aim: To use times tables - 2s, 5s and 10s. (1 day)



Complete the number track.

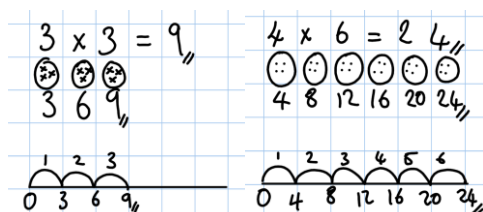


Fluency
-Use the 2 pence, 5 pence and 10 pence pieces to make representations of times tables and answer questions.
-Use numberline to reinforce counting in multiples.
-fill in missing numbers - numberline, number grids, lists.
-Practice quick recall of facts.

Aim: To solve problems using times tables - 2s, 5s and 10s. (1 day)


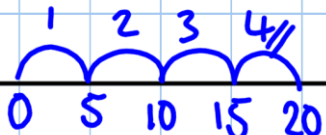

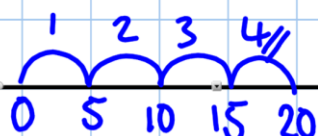
Using the known facts chdn pick out the calculations they need to solve problems.

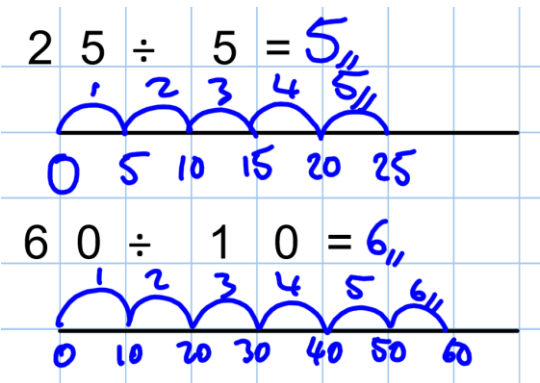
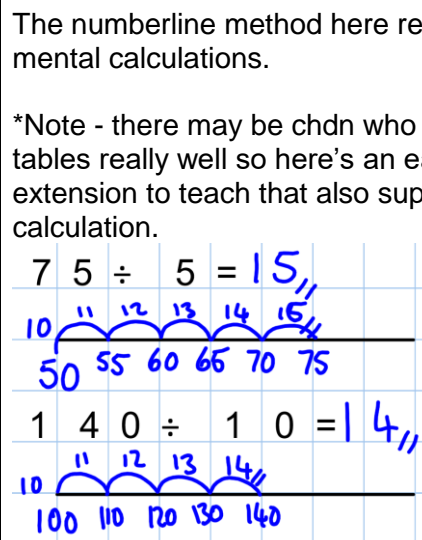
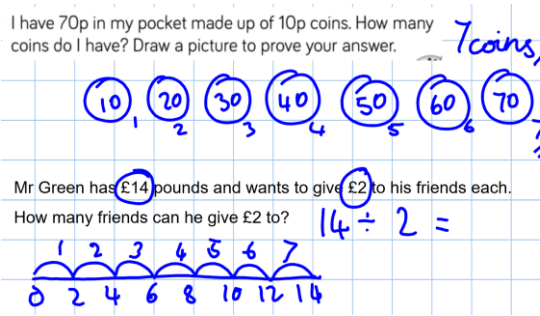
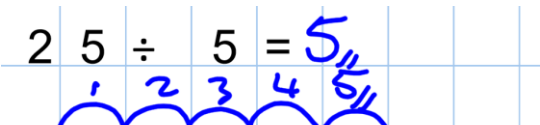
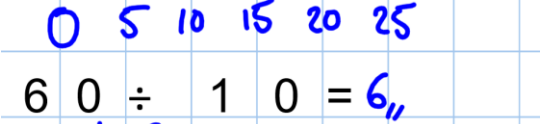
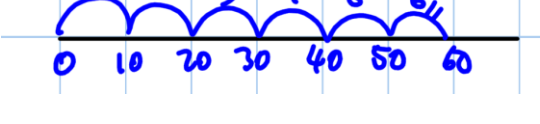
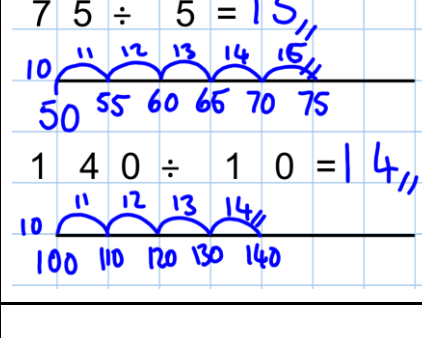
Aim: To multiply by 3. (1 day)

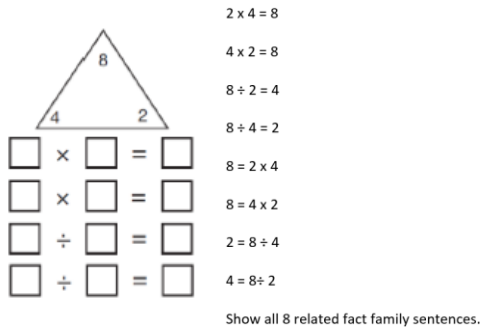
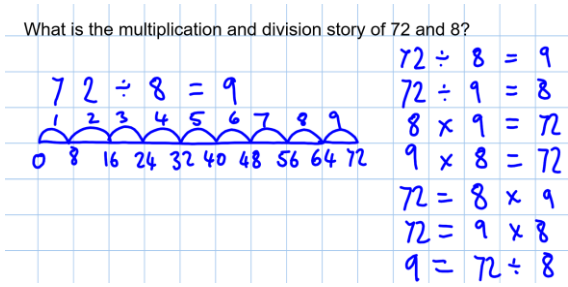
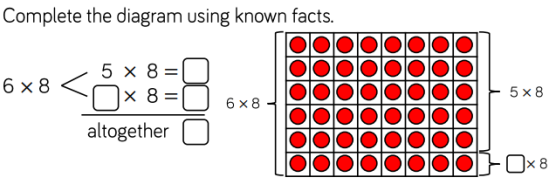


Success Criteria:

Fluency - It is important that pupils can link the drawing method of having groups and adding crosses to the numberline that reinforces the mental methods, which then links into just using fingers.
-Draw it and count
-Numberline
-Count on fingers.

	1. Draw the number line; 2. Decide how many jumps (choose the right number!); 3. Count in multiples.	EXT can use work already completed (Can you show an array for this one? Can you write the repeated addition for this etc. Basically varied fluency.)
Aim: To multiply by 4. (1 day)	<i>*Note chdn sometimes choose to count in the wrong number so model deciding which to count the jumps in. "I'll choose 6 jumps because I'm better at counting in 4s."</i> As above As Above	As above
Aim: To multiply by 8. (1 day)		As Above
Aim: To multiply by 3, 4 & 8. (1 day)	As Above	Mixed questions so that chdn go between multiplication tables.
Aim: To divide using drawings. (1 day)	$20 \text{ shared between } 5 = 4 //$ 	Sharing and grouping are often taught as different and they are but chdn find this confusing. Sharing is essentially drawing a bar model. Grouping is generally a numberline. Both have their merits but in the long run sharing is very limited so once the chdn have had a recap, we focus more on using the numberline.
Aim: To divide using a numberline. (1 day)	$20 \text{ shared between } 5 = 4 //$ 	
Aim: To divide by sharing and grouping. (2 days)	$20 \text{ shared between } 5 = 4 //$  	

<p>Aim: To divide by 2, 5 and 10. (2 days)</p>		<p>The numberline method here reinforces the mental calculations.</p> <p>*Note - there may be chdn who know these tables really well so here's an easy extension to teach that also support mental calculation.</p> 
<p>Aim: To solve problems involving division. (2s, 5s, 10s.) (1 day)</p>	<p>I have 70p in my pocket made up of 10p coins. How many coins do I have? Draw a picture to prove your answer. <i>7 coins</i></p> 	<p>Chdn read the questions and can use bar models and drawings to understand them.</p> <p>For example: drawing the ten pences and counting supports the idea of $70 \div 10$.</p>
<p>Aim: To divide by 3. (1 day)</p>		<p>Numberline method to reinforce the learning of the multiples of these times tables.</p>
<p>Aim: To divide by 4. (1 day)</p>		<p>*Note - Again there may be chdn who know these tables really well so here's an easy extension to teach that also support mental calculation.</p>
<p>Aim: To divide by 8. (1 day)</p>		

<p>Aim: To understand number relationships in times tables - 2s, 5s, 10s. (1 day)</p>	<div data-bbox="379 235 861 560">  </div>	<p>This is about chdn being able to link the numbers that share relationships.</p>
<p>Aim: To understand number relationships in times tables - 3s, 4s, 8s. (1 day)</p>	<div data-bbox="347 745 917 1030"> <p>What is the multiplication and division story of 72 and 8?</p>  </div>	<p>Depending on how well chdn know their tables, they may need a numberline or sharing strategy first.</p>
<p>Aim: To reason about number relationships.</p>	<div data-bbox="359 1120 909 1299"> <p>Complete the diagram using known facts.</p>  </div>	<p>Here, resources that extend this thinking and relate back to strategies and images already studied makes sense.</p>