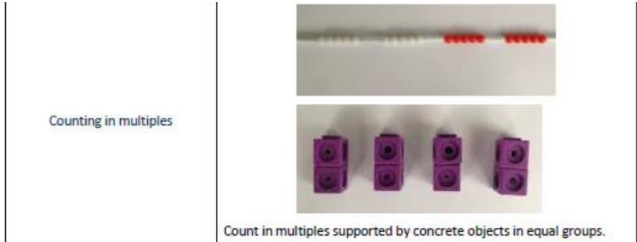
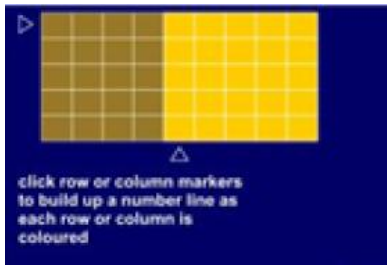

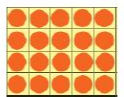



Year 1 and 2 Multiplication	
Year 1	Year 2
<p><b>Mental Strategies</b> Children should experience regular counting on and back from different numbers in 1s and in multiples of 2, 5 and 10. Concrete, pictorial and abstract to build mental strategies.</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;"> <p>Counting in multiples</p>  <p>Count in multiples supported by concrete objects in equal groups.</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>Count in multiples of a number aloud.</p> <p>Write sequences with multiples of numbers.</p> <p style="text-align: center;"><b>2, 4, 6, 8, 10</b></p> <p style="text-align: center;"><b>5, 10, 15, 20, 25, 30</b></p> </div> </div> <p>Use a number line or pictures to continue support in counting in multiples.</p>	<p>Children should count regularly, on and back, in steps of 2, 3, 5 and 10, including recognising odd and even numbers within the table facts, e.g <math>3 \times 7 = 21</math>, <math>0 \times 0 = 0</math></p> <div style="text-align: center;">  <p>click row or column markers to build up a number line as each row or column is coloured</p> </div> <p>In the example above with 5 rows and 9 columns, when you select to count along the columns the given calculation is:  <math>5 \times 9 = 45</math> [the 5 is multiplied by 9].                  Selecting to count along rows gives:  <math>9 \times 5 = 45</math> [the 9 is multiplied by 5].</p> <p><b>Arrays showing commutative organisation.</b></p>
<p><b>Counting in multiples needs to take place regularly using the concrete, pictorial and abstract to build conceptual understanding.</b>                  Repeated addition. Concrete, pictorial and abstract.                  Grouping is a random arrangement of a quantity into equal groups</p>	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Arrays- showing commutative multiplication</p> <p>Create arrays using counters/cubes to show multiplication sentences.</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Draw arrays in different rotations to find commutative multiplication sentences.</p> <p><math>4 \times 2 = 8</math></p> <p><math>2 \times 4 = 8</math></p> <p><math>2 \times 4 = 8</math></p> <p><math>4 \times 2 = 8</math></p> <p>Link arrays to area of rectangles.</p>  </div> <div style="border: 1px solid black; padding: 5px; width: 30%;"> <p>Use an array to write multiplication sentences and reinforce repeated addition.</p>  <p><math>5 + 5 + 5 = 15</math></p> <p><math>3 + 3 + 3 + 3 + 3 = 15</math></p> <p><math>5 \times 3 = 15</math></p> <p><math>3 \times 5 = 15</math></p> </div> </div>

**Repeated addition**

$$3 + 3 + 3$$

Use different objects to add equal groups.

---

There are 3 plates. Each plate has 2 star biscuits on. How many biscuits are there?  

$$2 \text{ add } 2 \text{ add } 2 \text{ equals } 6$$

Write addition sentences to describe objects and pictures.  

$$2 + 2 + 2 + 2 + 2 = 10$$

$$5 + 5 + 5 = 15$$

Arrays are a rectangular arrangement to show the equal groups.

$$4 \times 2 = 8$$

$$2 \times 4 = 8$$

$$2 \times 4 = 8$$

$$4 \times 2 = 8$$

It is essential that children draw the arrays in different rotations to build their conceptual understanding.

Children should practise times table facts using the commutative law

$$2 \times 1 =$$

$$2 \times 2 =$$

$$2 \times 3 =$$

X	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Expressing multiplication as a number sentence using x

Using understanding of the inverse and practical resources to solve missing number problems.

$$7 \times 2 = \square \qquad \square = 2 \times 7$$

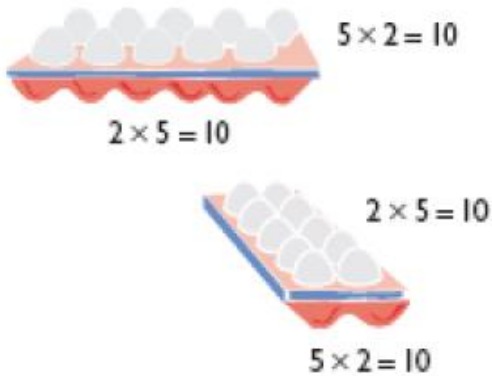
$$7 \times \square = 14 \qquad 14 = \square \times 7$$

$$\square \times 2 = 14 \qquad 14 = 2 \times \square$$

$$\square \times \bigcirc = 14 \qquad 14 = \square \times \bigcirc$$

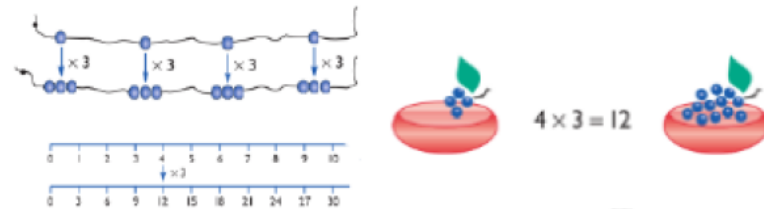
Counting in 2s, 5s and 10s and begin counting in 3s.

Introduce the x symbol once repeated addition is understood.



To understand that any number multiplied by zero will always be zero.  
Use a clock face to support understanding of counting in 5s.  
Use money to support counting in 2s, 5s, 10s, 20s, 50s

Begin to develop understanding of multiplication as scaling (3 times bigger/taller)



Doubling numbers up to 10 + 10  
Link with understanding scaling  
Using known doubles to work out double 2d numbers  
(double 15 = double 10 + double 5)

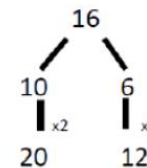


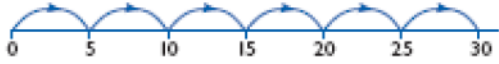
Draw pictures to show how to double a number.

Double 4 is 8



Partition a number and then double each part before recombining it back together.





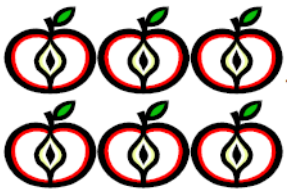
$$5 + 5 + 5 + 5 + 5 + 5 = 30$$

$$5 \times 6 = 30$$

5 multiplied by 6

6 groups of 5

6 hops of 5



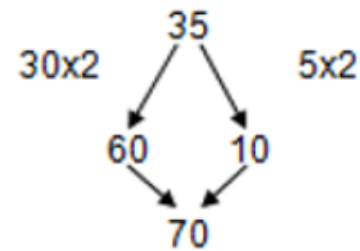
1 group of 3 = 3

2 groups of 3 = 6

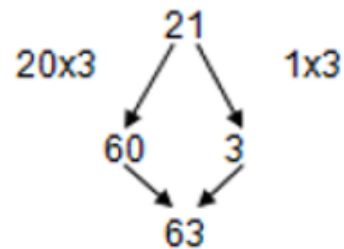
Doubles and grouping recorded on number lines

### Partitioning strategy for doubling.

Double 35



A lolly costs 21p. How much do 3 cost?



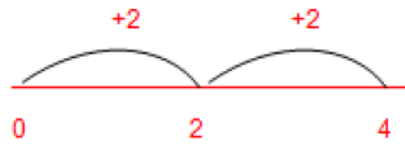
### Informal recording of partitioned numbers

$$15 \times 5 = 75$$

$$10 \times 5 = 50$$

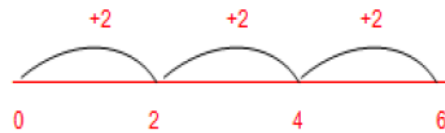
$$5 \times 5 = 25$$

$2 + 2 =$



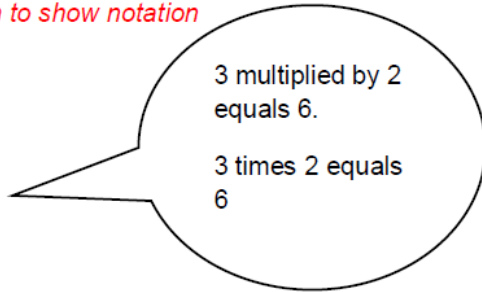
*Children to show notation*

$2 + 2 + 2 =$

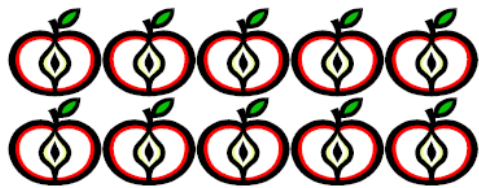


*Children to show notation*

$3 \times 2 = 6$



Finding simple fractions of quantities.  
 Finding half of 10 apples.





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