Parent workshop

Division and Multiplication

Year 1 and Year 2

Division and Multiplication

Aims of this session:

- To understand how multiplication and division is taught in the school.

- To understand what resources, strategies and models are used.

Progression through the school

EYFS

Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. (and not equally)

Year 1

Count in multiples of twos, fives and tens

Develop their recognition of patterns in the number system (for example, odd and even numbers)

Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Progression through the school

<u>Year 2</u>

Count in steps of 2, **3**, and 5 from 0, and in tens from any number, forward or backward

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables , including recognising odd and even numbers

Show that multiplication of two numbers can be done in any order (commutativity: this therefore means children are learning facts beyond 2, 5, and 10) and division of one number by another cannot

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs

What is multiplication and division?

Multiplication:
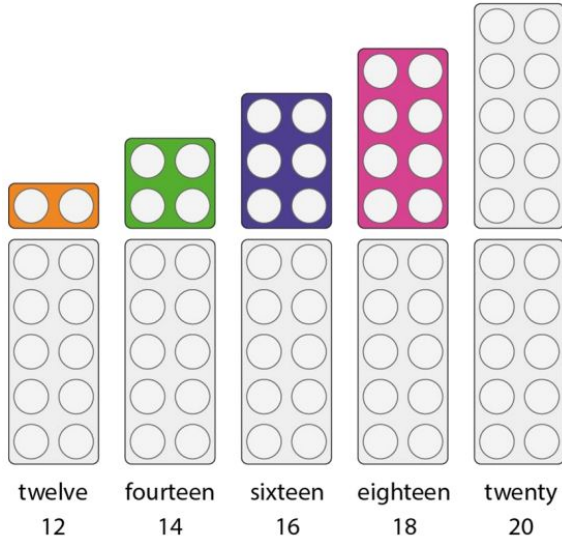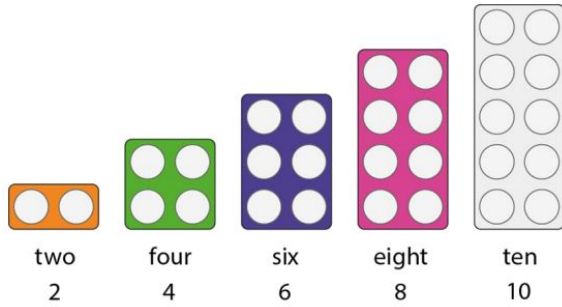When you take a number and add it together a number of times.

Division:

Sharing is dishing out a known number equally to a known number of groups until there are none left. "one for you, one for you"

Eg There are 12 cupcakes,I share them equally between 3 people. How many do they get each?

Grouping is not knowing how many groups but *knowing how many are **in** each group.*

Eg There are 12 cupcakes, people take 3 each, how many people are there ? So you group 3, then another 3 etc until there are none left.
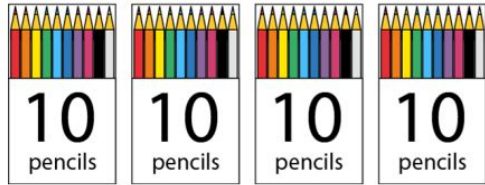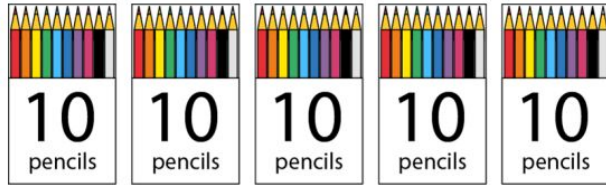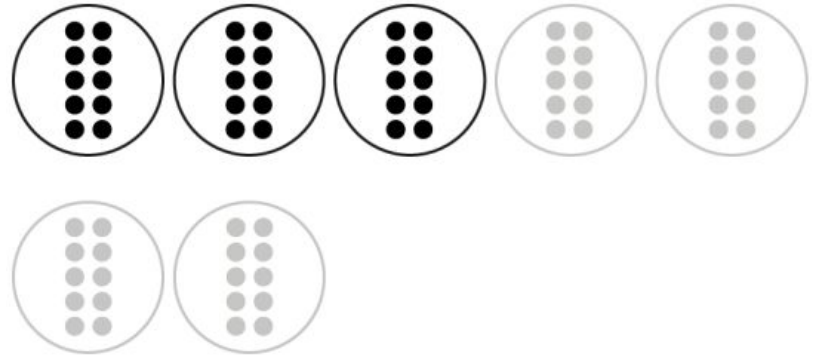
Skip counting

two	four	six	eight	ten
2	4	6	8	10

twelve	fourteen	sixteen	eighteen	twenty
12	14	16	18	20

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Gattegno chart:

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

Skip counting but in real life contexts, counting in different ways.

Children count using different vocabulary.
Clear links to multiplication (and division)

'How many pencils are there? Count in groups of ten.'

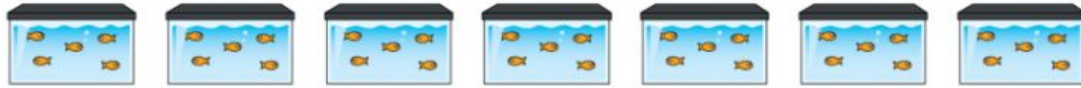| 10 pencils | 10 pencils | 10 pencils | 10 pencils | 10 pencils |

| 10 pencils | 10 pencils | 10 pencils | 10 pencils |

- *'Three groups of ten, four groups of ten, five groups of ten...'*
- *'Three tens, four tens, five tens...'*
- *'Thirty, forty, fifty…'*

Pre money tokens

Linking skip counting to multiplication and repeated addition.

How many fish are there?

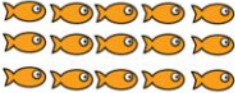There are ___ fish in each tank.
There are ___ tanks.
There are ___ fish altogether.

- 5, 10, 15, 20, 25, 30, 35.
- 5+5+5+5+5+5+5= 30
- 7 fives are 35
- There are 35 fish altogether.
  Not in all one lesson!

Arrays are introduced. This helps the children see a visual representation of repeated addition or multiplication

There are _2_ in each row.

There are _4_ rows.

2+2+2+2 = _8_

There are _8_ altogether.
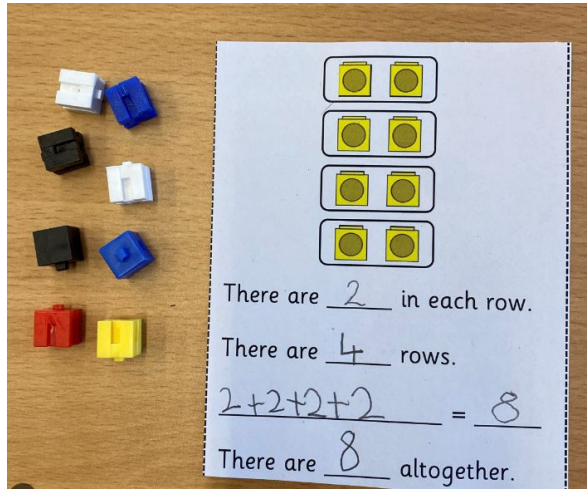
Array	Description - columns	Description - rows	Totals
	5 columns 2 cookies in each column	2 rows 5 cookies in each row	$2+2+2+2+2=10$ $5+5=10$
	___ columns ___ donuts in each column	___ rows ___ donuts in each row	
	___ columns ___ fish in each column	___ rows ___ fish in each row	
	3 columns 5 cupcakes in each column	5 rows 3 cupcakes in each row	

<u>Year 1 division</u> (grouping) Also there are clear links to skip counting.

How many equal groups of 2 can you make with the mittens?
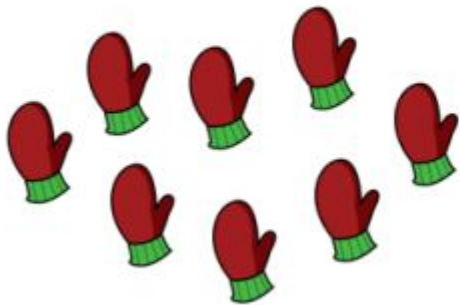
There are ____ groups of 2 mittens.
If you had 10 mittens, how many equal groups of 2 mittens could you make?

Year 1 division linked to sharing

Collect 20 cubes. Use hoops to represent your friends.
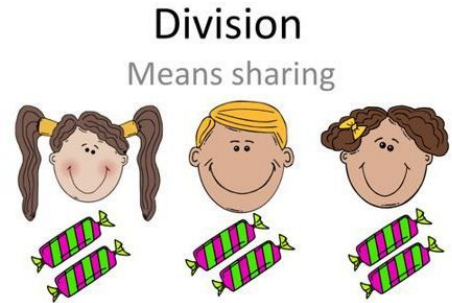Can you share the cubes between 5 friends?
20 shared between 5 equals _____
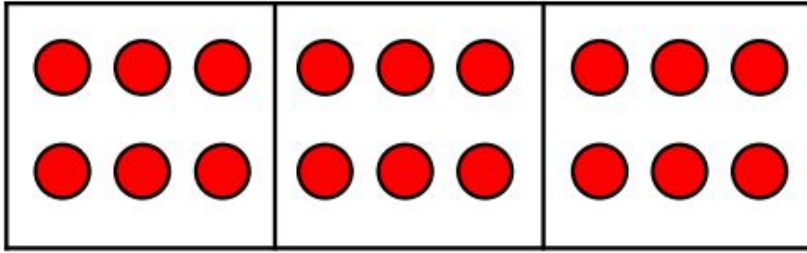Can you share the cubes between 2 friends?
20 shared between 2 equals _____
Can you share the cubes between 10 friends?
20 shared between 10 equals _____

Division
Means sharing

Year 2 Multiplication - introduce x the symbol

___ + ___ + ___ = 18

___ × ___ = 18

There are ___ equal groups with ____ in each group.
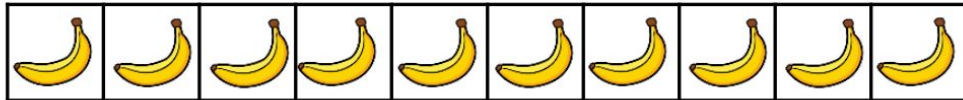There are three ____.

3 lots of 6 is equal to 18

Year 2 Arrays
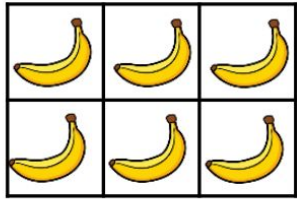
2×3 and ___ × ___

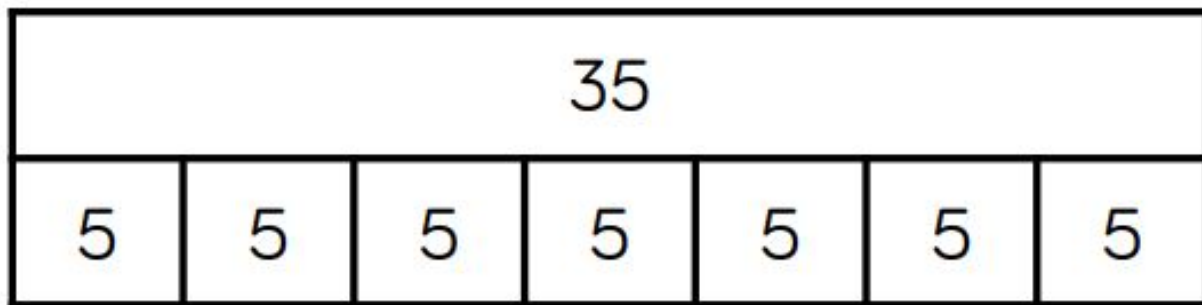___ × ___ and ___ × ___

Draw an array to show:

$4 \times 5 = 5 \times 4$

3 lots of 10 = 10 lots of 3

Commutative law:

The order of numbers in multiplication does not change the result.

In the examples the children are learning additional facts to those outlined in the national curriculum.
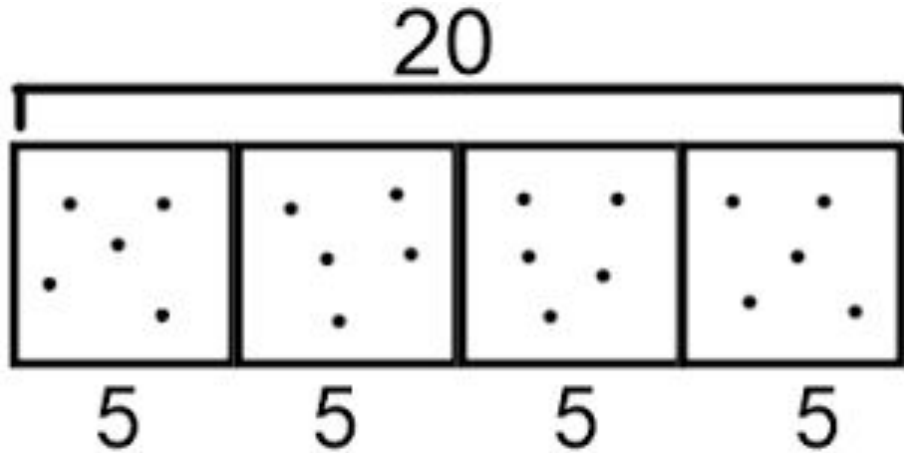
Bar model

35						
5	5	5	5	5	5	5

7 x 5 = 35
5 + 5 + 5 + 5 +5 + 5 + 5 = 7

Bar model - division

20

• •	• •	• •	• •
•	•	•	•
• •	• •	• •	• •

5   5   5   5

Sharing and grouping

(sharing easier)

20 ÷ 4 = 5
20 ÷ 5 = 4

Multiplication and division related facts

6 x 5 = 30   5 x 6 = 30

30 ÷ 6 = 5   30 ÷ 5 = 6

20
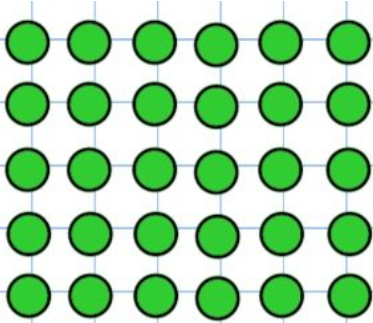
| 5 | 5 | 5 | 5 |

5 + 5 + 5 + 5 = 20   20 ÷ 4 = 5

5 x 4 20   20 ÷ 5 = 4

Quick recall (fluent)

0×3=	1×3=	2×3=
3×3=	4×3=	5×3=
6×3=	7×3=	8×3=

Multiplication cards - 3, 4, 6, 7, 8, 9, 11, 12

$3 \times 10 =$ ▯

7   There are **35** children.

They get into teams of **5**

How many teams are there altogether? ▯ teams

Thank you for coming.

Please complete an evaluation form.

Any questions?