Year 2 Multiplication and Division (including fractions)

Recall of facts
Recall and use multiplication and division facts for 2, 5 and 10 x tables.

Recall doubles and equivalent halves up to 15+15

Recall doubles of multiples of 5 up to 50

Don't Count, Calculate…

If I know… $2 \times 6 = 12$
I also know $6 \times 2 = 12$
$12 \div 2 = 6$ $12 \div 6 = 2$
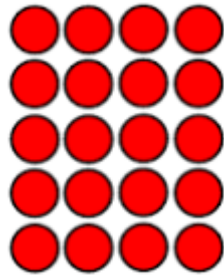$\frac{1}{2}$ of 12 is 6
double 6 is 12

If I know $7 \times 5 = 35$ then $8 \times 5 = 40$ because it is one more group of 5 and $6 \times 5 = 30$ because it is 1 less group of 5

Addition and Subtraction can be represented in different ways…

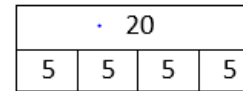*These structures show the relationship between multiplication and division.*

Array

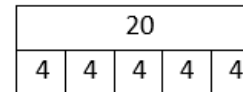$4 \times 5 = 20$
$5 \times 4 = 20$
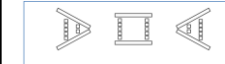$20 \div 4 = 5$
$20 \div 5 = 4$

bar model

20			
5	5	5	5

$5+5+5+5=20$

20				
4	4	4	4	4

$4+4+4+4+4=20$

True or False?

$£1 = 2 \times 50p$
$4 \times 5 = 5 \times 4$
$20 \div 5 > 20 \div 4$
$20p = 3 \times 5p$

Problems
Sally buys 3 cinema tickets costing £5 each. How much does she spend?

Comparing Numbers…….

$4 \times 5 < 5 \times 5$
$30 \div 5 > 30 \div 10$
$\frac{1}{2} > \frac{1}{3}$

Count on in multiples of 3 =
$3+3+3+3+3 = 5 \times 3 = 15$

Division as sharing and grouping

$10 \div 2 = 5$
Bob has 10 cakes. He *shares* them with Tim. How many do they have each?

Bob has 10 cakes. He puts 2 on a plate. How many plates does he have?

Finding fractions of a given quantity
We can find a fraction of an amount by following these simple steps.
- Draw a bar model.
- Look at the denominator and divide the bar into equal parts.
- Calculate the value of each part (sharing or other method)
- Look at the numerator and colour this number of parts.
- Find the total of all the coloured parts.

e.g find $\frac{3}{4}$ of 12

12			
x x x 3	x x x 3	x x x 3	x x x 3

Quarters – 4 equal parts
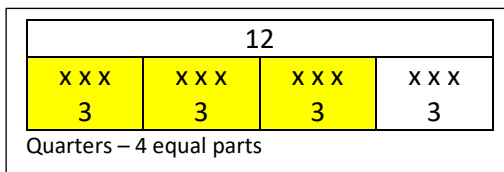
Use a variety of words
multiple, multiply, array, tables, times, groups of, lots of, twice, double, repeated addition
equal groups of, divide, divided by, divided into, remainder, partition, left over, half, quarter, third,

1			
$\frac{1}{2}$		$\frac{1}{2}$	
$\frac{1}{3}$	$\frac{1}{3}$		$\frac{1}{3}$
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
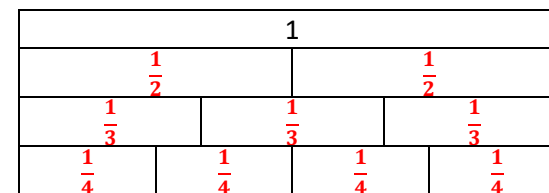
The bar model shows that $\frac{1}{2} = \frac{2}{4}$

$1 = \frac{2}{2} = \frac{3}{3} = \frac{4}{4}$ **Equivalent fractions**

Always Sometimes Never?

If you double an odd number, the answer is always even? If you multiply a number by 5, the answer is always even.

Scaling
I have 5 cars. My friend has twice as many. How many do we have altogether?

5	
5	5