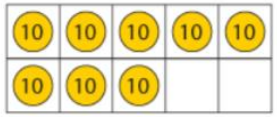
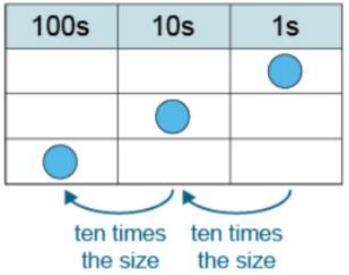
St Michael's Years 3 Maths Parent Information

10 tens is equal to 1 hundred.

18 tens is equal to 10 tens and 8 more tens.



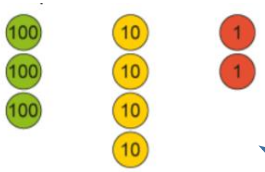
10 tens is equal to 100 so 18 tens is equal to 100 and 8 more tens, which is 180.



100 is 10 times the size of 10.

180 and 300 are multiples of 10, because they are each equal to a whole number of tens. 180 is 18 tens. 300 is 30 tens. All multiples of 10 have a zero in the ones place.

3 NPV-1



40 + 300 + 2 is equal to 342, not 432.

3 digit numbers can be partitioned into a number of hundreds, a number of tens and a number of ones.

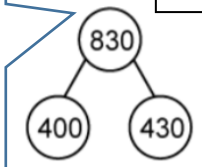
$342 - 300 = \square$

$342 - \square = 302$

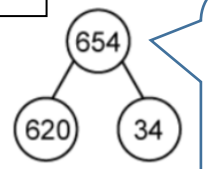
Use subtraction to find the missing parts.

3 NPV-2

3 digit numbers can be split in different ways.



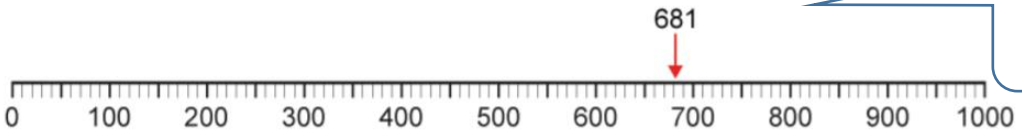
830 – 400 = 430



620 + 34 = 654

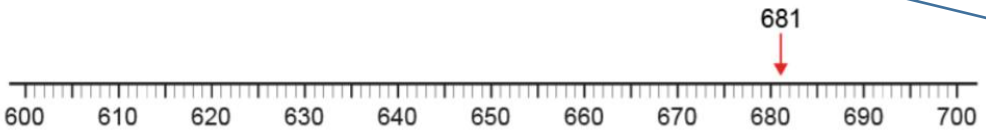
Partitioning can be written as addition and subtraction facts.

Identify the multiple of 100 before and after any 3 digit number.



The previous multiple of 100 is 600. The next multiple of 100 is 700.

Identify the multiple of 10 before and after any 3 digit number.



The previous multiple of 10 is 680. The next multiple of 10 is 690.

Without using a number line, identify the multiple of 10 or 100 before and after any 3 digit number.

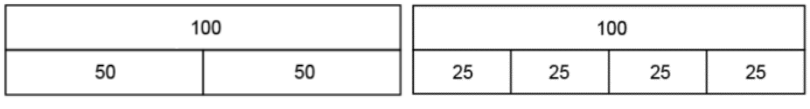
3 NPV-3

previous multiple of 100		**next** multiple of 100
600	< 681 <	700

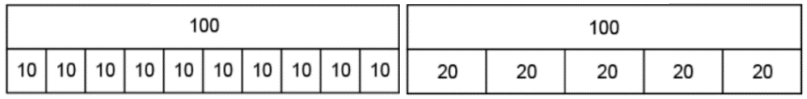
Count forwards and backwards in steps of 1 or 10 from any 3 digit number.

210, 200, 190

485, 495, 505



Split 100 into 2, 4, 5 and 10 equal parts.



...80, 100, 120, 140...

...950, 900, 850, 800...

Practise counting in multiples of 10, 20, 25, and 50 from 0, or from any multiple of these numbers, both forwards and backwards.

3 NPV-4

...250, 225, 200, 175....

...130, 110, 90, 70...

6+4 = 10 so 60+40 = 100.

I can use 10 – 7 to work out 100 - 70.

If I have five 20p coins, I have £1 in total.

I can cut six 50cm pieces from a rope 3m long.

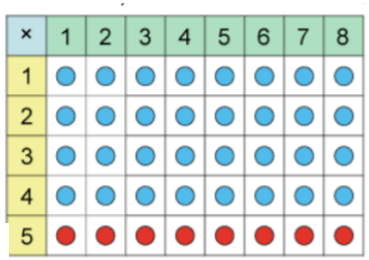
Use number bonds to solve addition and subtraction problems based on partitioning 100 into multiples of 10, 20 and 50.

Remember: **100 = 25 + 75**; **100 – 25 = 75**; **25 = 100 - 75**

Factors can be written in either order, the **product** remains the same.

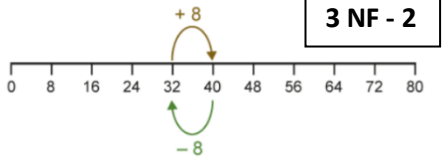
$3 \times 4 = 12$ or $4 \times 3 = 12$

factor product factor product



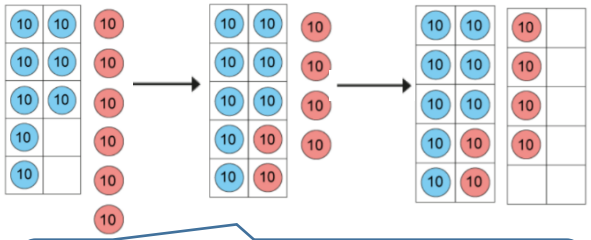
Use multiplication facts to derive division facts.

Five times four is twenty so twenty divided by four is five.



The difference between 4 X 8 and 5 X 8 is eight.

3 NF - 2



8 + 6 is 14 so eight tens plus 6 tens must be fourteen tens. Fourteen tens is 140.

3 NF - 3

$8 + 6 = 14$ $\quad 14 - 6 = 8$ $\quad 14 - 8 = 6$

$80 + 60 = 140$ $\quad 140 - 60 = 80$ $\quad 140 - 80 = 60$

Scale up known addition and subtraction facts by a **factor of ten**.

12 ÷ 3 = 4 so 120 ÷ 3 = 40

3 X 4 is 12 so 30 X 4 is 120

Use addition, subtraction, multiplication and division facts and knowledge of place value.

9 – 6 is 3 so 90 – 60 is 30.

15 tens is equal to 150.

3 times 5 is equal to 15.

3 times 5 tens is equal to 15 tens.

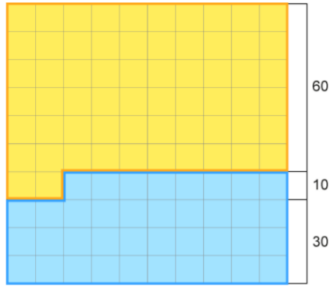
$3 \times 5 = 15$

$3 \times 50 = 150$

Calculate **complements** to 100

62 + ? = 100

First we make 10 ones. The ones digits add up to 1 ten, so we need 9 more tens.



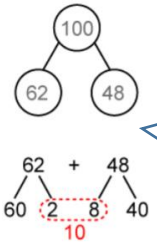
62 + ? = 100

2 + **8** = 10 (1 ten)

60 + **30** = 90 (9 tens)

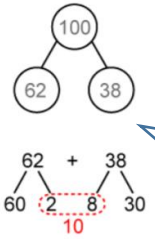
9 tens + 1 ten = 10 tens

62 + **38** = 100



This solution has too many tens. The ones add up to 1 ten but there are ten more tens as well.

3 AS - 1



This solution is correct. There are 9 tens plus one more made up from adding the ones together. 10 tens is one hundred.

Add and **subtract** using columns, ensuring that digits are correctly **aligned**, starting from the column furthest to the **right**.

	10s	1s
	4	3
+	2	5
	6	8

3 ones plus 5 ones is equal to 8 ones.

4 tens plus 2 tens is equal to 6 tens.

	10s	1s
	6	5
−	2	3
	4	2

5 ones minus 3 ones is equal to 2 ones.

6 tens minus 2 tens is equal to 4 tens.

	2	7	4
+	3	5	4
	6	2	8
	1		

Remember: if the total in a column is more than nine, **carry** across to the **left**. Here, the total in tens column is 12 tens, which is 120 so the hundred moves **to the left** into the hundreds column and 2 tens remain in the tens column.

	5	1	
	~~6~~	2	8
−	2	7	4
	3	5	4

Remember: if the top number in any column is smaller than the number beneath it, **borrow** from the column to the **left** before subtracting. Here, we borrow one hundred (10 tens) from the hundreds column **to the left**. The 6 hundreds we started with is reduced to 5. There are now 12 tens, from which we can subtract 7 tens to leave 5 tens.

Use **efficient** methods when calculating with more than 2 numbers. Look for pairs that make 10 and doubles.

628	
274	354

3 AS - 2

Use the inverse to check calculations

Understand **addition** and **subtraction and** the **relationship** between them.

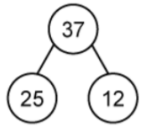
3 AS - 3

$25 + 12 = 37$

$12 + 25 = 37$

addend + addend = sum

Addition is **commutative**. It can be done **in any order**.



37	
25	12

$37 = 25 + 12$

$37 = 12 + 25$

sum = addend + addend

subtrahend = minuend - difference

$25 = 37 - 12$

$12 = 37 - 25$

difference = minuend – subtrahend

$37 - 12 = 25$

$37 - 25 = 12$

minuend – subtrahend = difference

With subtraction, the **minuend** is the **largest value**. The **subtrahend** and the **difference combine** to make the **minuend**.

sum	
addend	addend

minuend	
subtrahend	difference

minuend	
difference	subtrahend

If we swap the values of the subtrahend and difference, the minuend remains the same.

$329 + \square = 743 \rightarrow 743 - 329 = \square$

There is a missing part. To find the missing part, we subtract the other part from the whole.

There is a missing part. To find the missing part, we subtract the other part from the whole.

$477 - \square = 285 \rightarrow 477 - 285 = \square$

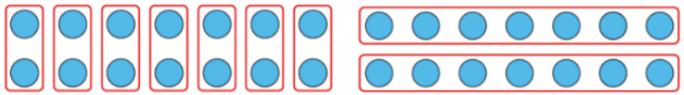
$\square - 527 = 87 \rightarrow 527 + 87 = \square$

There is a missing whole. To find the missing whole, we add the 2 parts.

Use what is known about **multiplication** and **division** to solve problems.

3 MD - 1

$7 \times 2 = 2 \times 7$



7 groups of 2

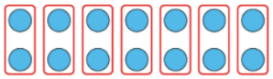
$7 \times 2 = 14$

2 groups of 7

$2 \times 7 = 14$

Multiplication is **commutative**. It can be done **in any order**.

I need 14 ping-pong balls. There are 2 ping-pong balls in a pack. How many packs do I need?

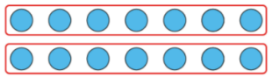


$14 \div 2 = 7$

14						
2	2	2	2	2	2	2

7 times 2 is 14, so 14 divided by 2 is 7. 14 divided into groups of 2 is equal to 7. I need 7 packs of ping-pong balls.

£14 is shared between 2 children. How much money does each child get?



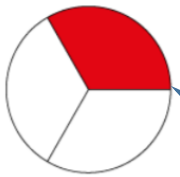
$14 \div 2 = 7$

14	
7	7

7 times 2 is 14, so 14 divided by 2 is 7. £14 shared between 2 is equal to £7 each. Each child gets £7.

3 F - 1

Understand **fractions**.



The whole is divided into 3 **equal** parts. 1 of these parts is shaded.

The whole is divided into 3 equal parts. Each part is **one-third** of the whole.

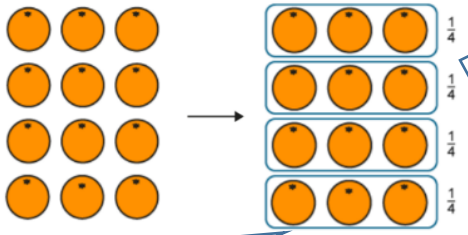
Say	Write
"The whole has been divided…"	The fraction bar: –
"…into 3 equal parts."	The denominator: **3**
"1 of these parts is shaded."	The numerator: **1**

$\frac{1}{3}$

The whole is divided into 8 equal parts and 5 of those parts are shaded. $^5/_8$ of the shape is shaded. $^5/_8$ is 5 one-eighths.

Find unit **fractions of quantities** using known **division** facts.

3 F - 2



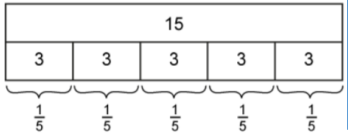
The whole is 12 oranges. The whole is divided into 4 equal parts.

Each part is $\frac{1}{4}$ of the whole. $\frac{1}{4}$ of 12 oranges is 3 oranges.

15				
3	3	3	3	3

15 divided by 5 is equal to 3, so $\frac{1}{5}$ of 15 is equal to 3.

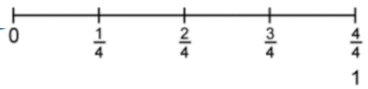
To find $\frac{1}{5}$ of 15, we divide 15 into 5 equal parts.



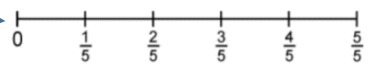
Reason about the **location** of any **fraction** within 1 on a **number line.**

3 F - 3

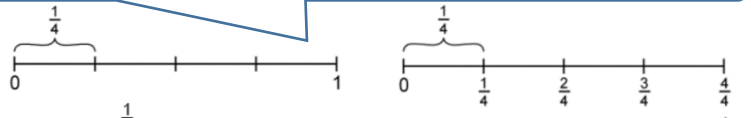
One quarter, two quarters, three quarters…

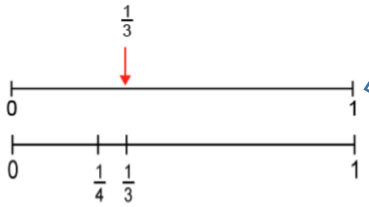


1 one-fifth, 2 one-fifths, 3 one-fifths…



Between 0 and 1 is divided into 4 equal parts, so we count in quarters.





If I imagine the distance from 0 to 1 **split into 3 equal parts**, I can estimate where **one third** of the way along is.

If the distance from 0 to 1 is split into **4 equal parts** instead of 3, then each part will be smaller. This means **one quarter** of the way along **is closer to zero than one third** of the way along.

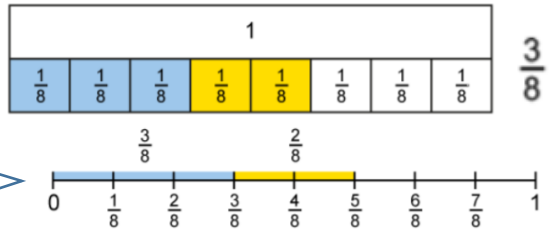
Add and subtract fractions with the **same denominator**, within 1.

Three eighths is 3 lots of one eighth.

3 F - 4

3 one-eighths plus 2 one-eighths is equal to 5 one-eighths.

5 one-eighths minus 2 one-eighths is equal to 3 one-eighths.



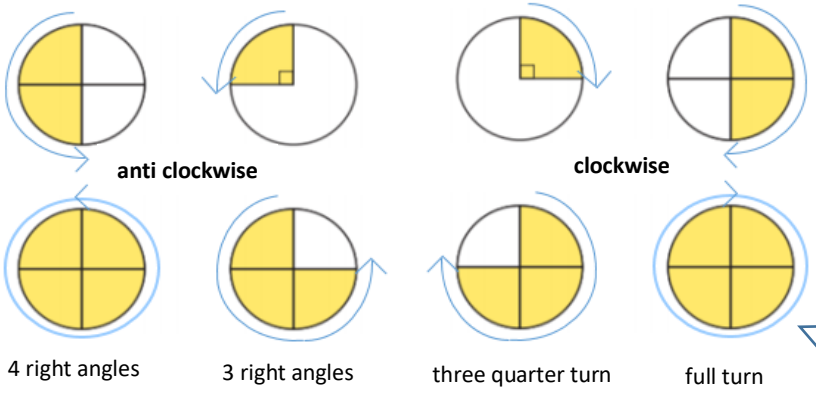
$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$

When adding fractions with the same denominators, just add the numerators.

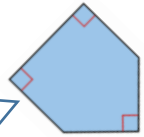
$\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$

When subtracting fractions with the same denominators, just subtract the numerators.

Recognise right angles as a property of shape or a description of a turn.



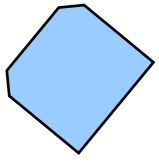
This irregular pentagon has 3 right angles.

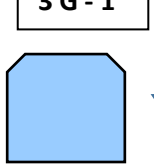


Identify right angles in 2D shapes presented in different orientations.

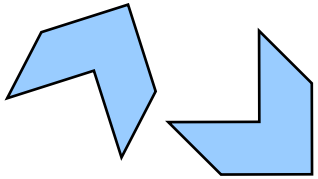
3 G - 1

We can use right angles to measure how far we turn.

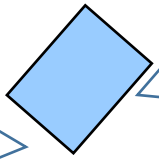




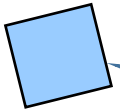
Rotating the shape can make it easier to identify the right angles.



The only polygon in which every vertex can be a right angle is a quadrilateral.



Quadrilaterals that have 4 right angles are rectangles, no matter what the length of their sides.

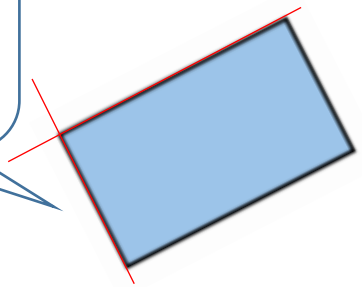


A quadrilateral that has all side-lengths equal and every vertex a right angle is a regular rectangle that we call a square.

Draw shapes accurately by using isometric paper and a ruler.

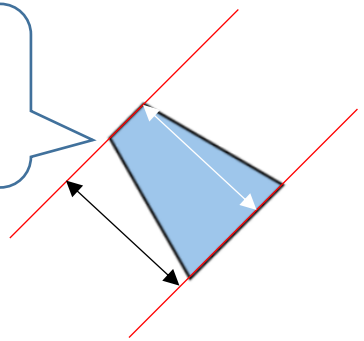
Draw polygons by joining marked points

These 2 lines are perpendicular because they are at right angles to each other.



Identify parallel and perpendicular sides

These 2 lines are parallel because they are always the same distance apart. They will never meet no matter how far we extend them."



3 G - 2