Mathematical Knowledge for the curriculum in Year 3

Dear parents,

The following are the mathematical facts your child will need to complete the year 3 curriculum. In order that they can learn how to use numbers, geometry and statistics they will need to have a basic recall of facts that can then be applied. The UK curriculum in mathematics is now focussed on Mastery approaches to ensure that the best students genuinely are so, and that more students get the best grades. With this in mind the first step to mastery comes from knowing the basic facts so that in school your child can apply these facts.

The decimal number system

Ones			**Fractions**
Hundreds	Tens	Ones	Tenths

769 is seven hundred and sixty nine.
In the number 769 the 7 stands for seven hundred and the 6 stands for sixty.
In the number 27.3 the 3 stands for three tenths.

Add and subtract numbers mentally

e.g. 342 + 200 = 542
e.g. 56 + 35 = 91
e.g. 23 + 34 = 57

e.g. 342 + 40 = 382
e.g. 56 + 7 = 63
e.g. 23 + 5 = 28

e.g. 342 + 5 = 347
e.g. 7 + 9 = 16
e.g. 2 + 6 = 8

Counting in multiples of 4, 8, 50 and 100

4, 8, 12, 16, 20, 24, 28, 32, 26, 40, 44, 48, …
8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, …
50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, …
100, 200, 300, 400, 500, 600, 700, 800, 900, 1 000, 1 100, 1 200, …

Finding 10 or 100 more or less than a given number

e.g. 2 847 plus 10 is 2 857
e.g. 2 847 plus 100 is 2 947

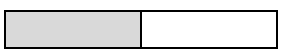
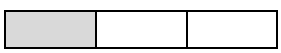
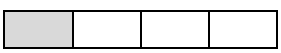
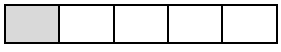
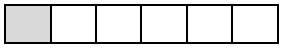
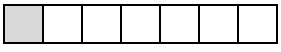
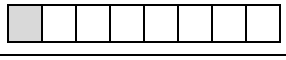
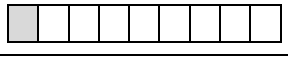
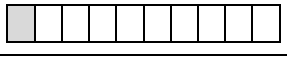
e.g. 7 642 less 10 is 7 632
e.g. 7 642 less 100 is 7 542

Counting up and down in tenths

Digits	Words
7.3, 7.4, 7.5, 7.6, 7.7, 7.8, …	Seven point three, seven point four, seven point five, seven point six, seven point seven, seven point eight, …
5.6, 5. 7, 5.8, 5.9, 6.0, 6.1, ...	Five point six, five point seven, five point eight, five point nine, six point zero, six point one, ….

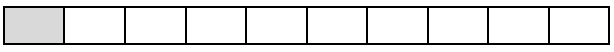
Unit fractions

e.g.

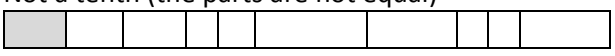
$\frac{1}{2}$ =		$\frac{1}{3}$ =		$\frac{1}{4}$ =	
$\frac{1}{5}$ =		$\frac{1}{6}$ =		$\frac{1}{7}$ =	
$\frac{1}{8}$ =		$\frac{1}{9}$ =		$\frac{1}{10}$ =	

A tenth is one of ten equal parts

A tenth

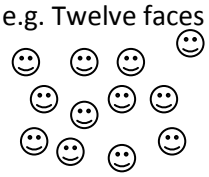
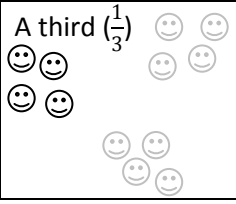
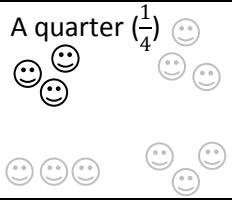


Not a tenth (the parts are not equal)



Y3 Mathematical facts

Fractions of a group of objects

e.g. Twelve faces	A half ($\frac{1}{2}$)	A third ($\frac{1}{3}$)	A quarter ($\frac{1}{4}$)
			

Equivalent fractions with small denominators

e.g.

Standard units of length, mass, volume and time

	Length	Volume	Mass
Standard units	kilometre = km metre = m centimetre = cm millimetre = mm	litre = l millilitre = ml	Kilogram = kg gram = g

Days:

January = 31 days
February = 28 days
March = 31 days
April = 30 days
May = 31 days
June = 30 days
July = 31 days
August = 31 days
September = 30 days
October = 31 days
November = 30 days
December = 31 days

1 year = 365 days

1 leap year = 366 days

Know roman numerals for time

Number	1	2	3	4	5	6	7	8	9	10	11	12
Roman numeral	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

1 minute = 60 seconds

Parts of the day

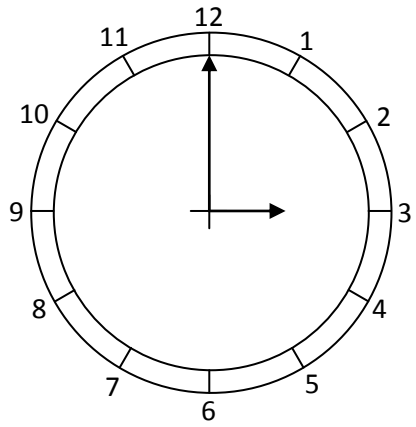
	Morning (am)											
Hour	12 midnight	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12 noon
'24' Hour	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00

	Afternoon (pm)												
Hour	12 noon	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12 midnight
'24' Hour	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00

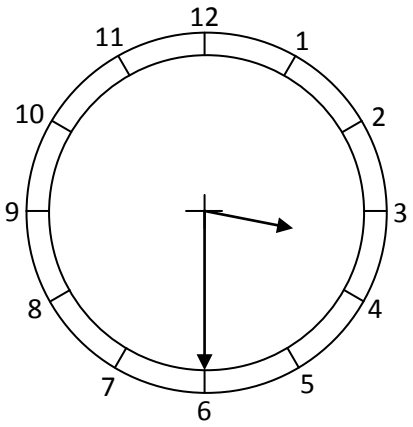
Y3 Mathematical facts

Reading time

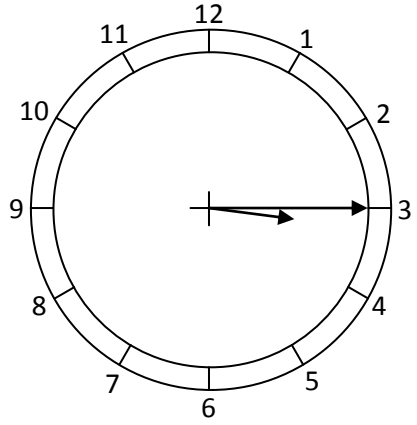
e.g. analogue time



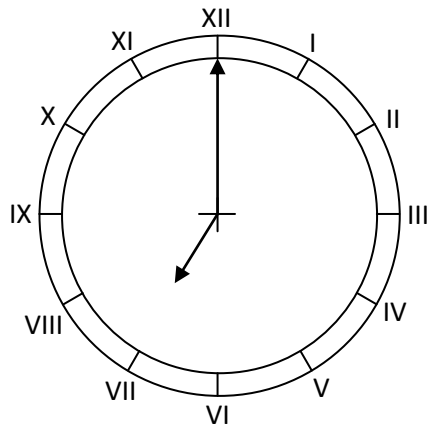
three o'clock



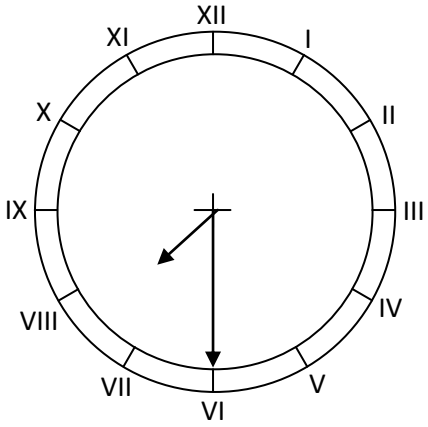
half past three



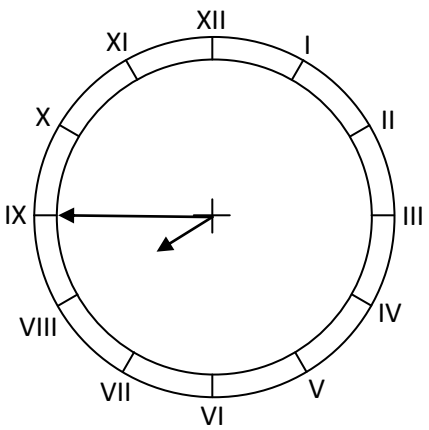
a quarter past three



seven o'clock



half past seven



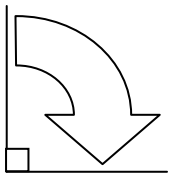
a quarter to eight

e.g. 12 and 24 hour digital time

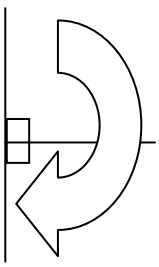
09:00	09:20	09:45	17:00	17:30
nine am	twenty past nine am	nine forty five am	five pm	five thirty pm

Right angles

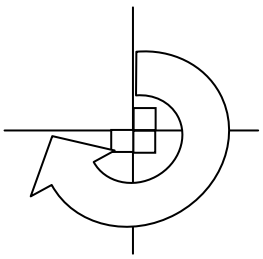
identify right angles, recognise the following



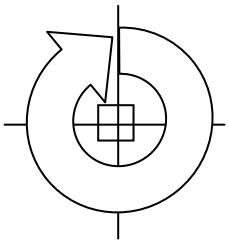
right angle,
quarter turn



two right angles,
half turn



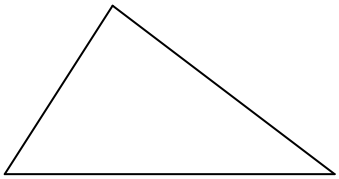
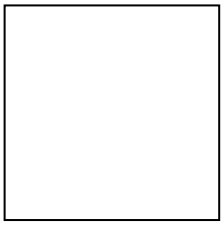
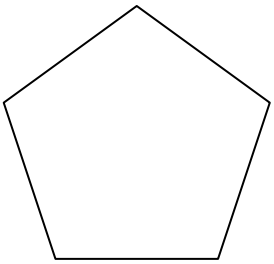
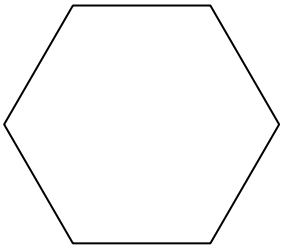
three right angles,
three quarter turn



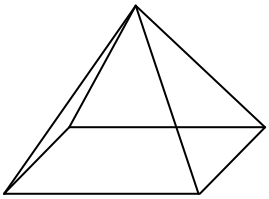
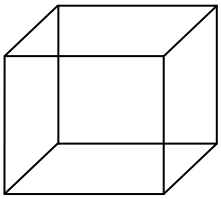
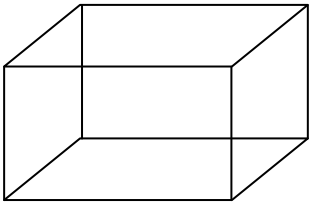
four right angles
complete turn

Y3 Mathematical facts

Know 2-D shapes …

Triangle	Quadrilateral (e.g. square)	Quadrilateral (e.g. rectangle)
 Three sided shape	 Four sided shape (all sides are equal)	 Four sided shape (opposite sides are equal)
Pentagon	**Hexagon**	**Other shapes:**
 Five sided shape	 Six sided shape	Heptagon – 7 sides Octagon – 8 sides Nonagon – 9 sides Decagon – 10 sides Dodecagon – 12 sides A shape is called "regular" if all its sides and angles are the same. e.g. a regular quadrilateral is also called a square.

and 3-D shapes

Square based pyramid	Cube	Cuboid
 Constructed from four triangles and a square	 Constructed from six squares	 Constructed from four rectangles and two cubes