

Mathematical Knowledge for the curriculum in Year 6

Dear parents,

The following are the mathematical facts your child will need to complete the year 6 curriculum. In order that they can learn how to use numbers, algebra, 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 they can apply these facts.

The decimal number system

Millions		Thousands			Ones			Fractions		
Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths

3 245 769 is three million, two hundred and forty five thousand, seven hundred and sixty nine.

In the number 3 245 769 the 5 stands for five thousand and the 2 stands for two hundred thousand.

27.398 is twenty seven point three nine eight; you will note that fractions are read as single numbers.

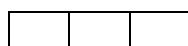
In the number 27.398 the 3 stands for three tenths, the 9 stands for nine hundredths and the 8 for eight thousandths.

Fractions (also found in Year 5)

Fractions are numbers that include part of a whole number, they are written as $\frac{\text{numerator}}{\text{denominator}}$

The denominator tells you how many divisions make a whole number

Whole = 1



Three divisions = $\frac{?}{3}$

Whole = 1



Four divisions = $\frac{?}{4}$

Whole = 1

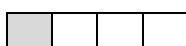


Six divisions = $\frac{?}{6}$

The numerator tells you how many divisions are selected



Three divisions, two selected = $\frac{2}{3}$



Four divisions, one selected = $\frac{1}{4}$



Six divisions, five selected = $\frac{5}{6}$

Equivalent fractions, decimals and percentages

$$\frac{1}{2} = 0.5 = 50\%$$

$$\frac{1}{3} = 0.33333... = 33.333...%$$

$$\frac{2}{3} = 0.66666... = 66.666...%$$

$$\frac{1}{4} = 0.25 = 25\%$$

$$\frac{2}{4} = \frac{1}{2} = 0.5 = 50\%$$

$$\frac{3}{4} = 0.75 = 75\%$$

$$\frac{1}{5} = 0.2 = 20\%$$

$$\frac{2}{5} = 0.4 = 40\%$$

$$\frac{3}{5} = 0.6 = 60\%$$

$$\frac{4}{5} = 0.8 = 80\%$$

$$\frac{1}{8} = 0.125 = 12.5\%$$

$$\frac{3}{8} = 0.375 = 37.5\%$$

$$\frac{5}{8} = 0.625 = 62.5\%$$

$$\frac{7}{8} = 0.875 = 87.5\%$$

$$\frac{1}{10} = 0.1 = 10\%$$

$$\frac{3}{10} = 0.3 = 30\%$$

$$\frac{7}{10} = 0.7 = 70\%$$

$$\frac{9}{10} = 0.9 = 90\%$$

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

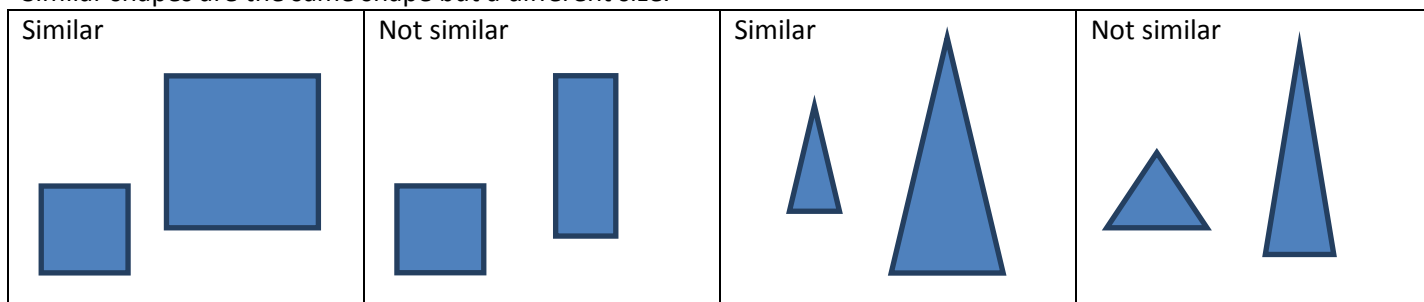
$$\frac{1}{3} = \frac{2}{6} = \frac{3}{9}, \frac{2}{3} = \frac{4}{6} = \frac{6}{9}$$

$$\frac{1}{4} = \frac{2}{8}, \frac{3}{4} = \frac{6}{8}$$

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

Similar shapes

Similar shapes are the same shape but a different size.



Standard units of length, mass and volume

	Length	Area	Volume	Mass
Standard units	kilometre = km metre = m centimetre = cm millimetre = mm	Square kilometres = km ² Square metres = m ² Square centimetres = cm ² Square millimetres = mm ²	Litre = l Millilitre = ml Cubic metre = m ³ Cubic centimetre = cm ³ Cubic millimetre = mm ³	Ton = t Kilogram = kg Gram = g Milligram = mg
Equivalencies	1km = 1000m, 1m = 100cm = 1000mm, 1m = 0.001km 1cm = 10mm, 1cm = 0.01m, 1mm = 0.001m,		1 l = 1000ml 1 ml = 0.001 l 1 ml = 1 cm ³	1t = 1000kg, 1kg = 1000g, 1kg = 0.001t 1g = 1000mg 1g = 0.001kg, 1mg = 0.001g,

Time

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

1 year = 365 days

1 year = 52 weeks (plus 1 day)

1 year = 12 months

9am, 2:15pm – 12 hour clock

09:00, 14:15 – 24 hour clock

02:34.45 – two hours, thirty four minutes and forty five hundredths of a second

Days: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday.

Months: January, February, March, April, May, June, July, August, September, October, November, December.

Months with 31 days: January, March, May, July, August, October, December.

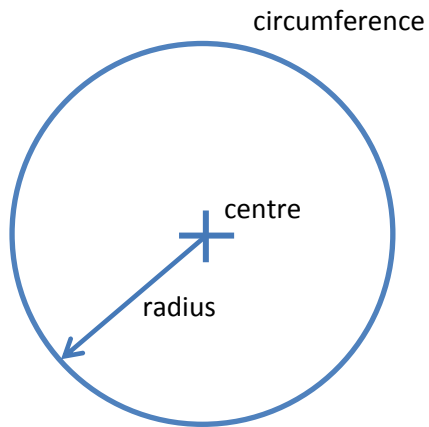
Months with 30 days: April, June, September, November.

February has either 28 days or in a “Leap Year” 29 days.

Recent and future leap years: 2004, 2008, 2012, 2016, 2020.

The circle

The circumference of a circle is its perimeter.
The radius goes from the centre of a circle to its circumference.



The diameter goes from one side of a circle to the other through the centre.
You can see that the diameter is twice the length of a radius.

