

Maths

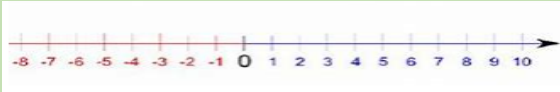
Year Group: 6

Place Value

10,000,000s	1,000,000s	100,000s	10,000s	1,000s	100s	10s	1
10 millions	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	7	5	3	1	4	6	9

eighty seven million, five hundred thirty one thousand, four hundred sixty nine

Read, write and order numbers up to 10,000,000.



Use negative numbers in context

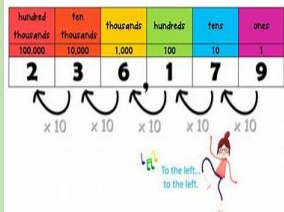
Round any number to the nearest 100,000, 10,000, 1000, 100 and 10.

315	→	320	Nearest 10
455	→	500	Nearest 100
1595	→	2000	Nearest 1000

Multiply and divide by 10, 100, 1000 including decimals

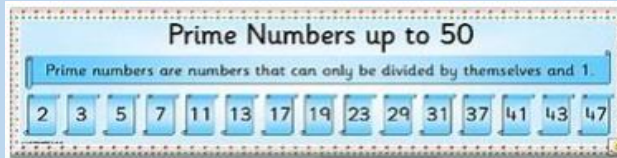
MULTIPLICATION AND DIVISION BY 10, 100, 1000

- $\times 10$ move digits one place to left
- $\times 100$ move digits two places to left
- $\times 1000$ move digits three places to left
- $\div 10$ move digits one place to right
- $\div 100$ move digits two places to right
- $\div 1000$ move digits three places to right



Number Knowledge

Know prime numbers and prime factors

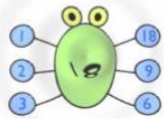


Identify common multiples and common factors.

Multiples are all the numbers in a times table.
Eg. The multiples of 2 are all the numbers in the 2 times table: 2, 4, 6, 8, 10 and so on.

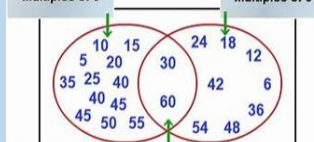
Factors: Numbers that you can divide a bigger number by e.g.

Find the factors of 18



The factors of 18 are 1, 2, 3, 6, 9 and 18

This circle has multiples of 5



where the circles overlap has common multiples of 5 and 6

Recognise and use squared and cubed numbers

Square number patterns

Square numbers get their name from the pattern they make.

- Area = $1 \times 1 = 1^2 = 1$
- Area = $2 \times 2 = 2^2 = 4$
- Area = $3 \times 3 = 3^2 = 9$
- Area = $4 \times 4 = 4^2 = 16$

See if you can continue the pattern!

What's the missing number?

$$4 \times d = 12$$

$$d = 3$$

Calculation

Add and subtract any 1000s number from any 5-digit number.

$$\begin{array}{r} 58,391 \\ + 27,431 \\ \hline 85,822 \end{array}$$

8 ⁷	16	.	3 ²	10
- 1	9	.	0	4
6	7	.	2	6

Multiply numbers up to 4-digits by a 1-digit and 2-digit number using an efficient written method.

$$\begin{array}{r} 2826 \\ \times \quad 8 \\ \hline 22608 \\ 624 \end{array}$$

$$\begin{array}{r} 132 \\ \times 12 \\ \hline 264 \quad \rightarrow \text{multiply by 2} \\ + 1320 \quad \rightarrow \text{multiply by 10} \\ \hline 1584 \end{array}$$

Divide numbers up to 4-digits by a 2-digit number using short division written method.

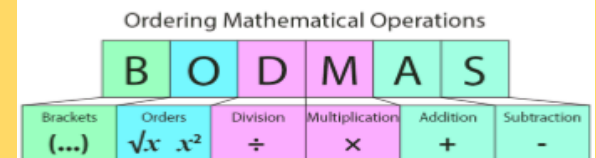
$$526 \div 25 = ?$$

$$\begin{array}{r} 21 \\ 25 \overline{) 526} \\ \underline{- 50} \\ 26 \\ \underline{- 25} \\ 1 \end{array}$$

Answer: $526 \div 25 = 21 \text{ r } 1$

$$\begin{array}{r} 14.6 \\ 35 \overline{) 511.0} \\ \underline{35} \\ 16 \\ \underline{14} \\ 21 \\ \underline{21} \\ 0 \end{array}$$

Ordering operations to carry out calculations



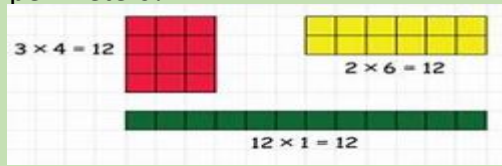
Maths

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Shape

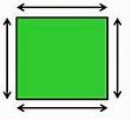
Perimeter and area

What is the perimeter and area of these shape? Can some shapes have the same area and different perimeters?



What is Perimeter?

The perimeter is the distance all the way around the outside of a 2D shape.



Finding the Area (square)

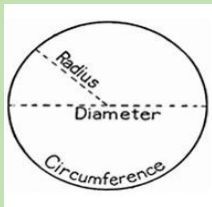
To work out the area of a square, multiply one side by the adjacent side. The area of this square is $6\text{cm} \times 6\text{cm} = 36\text{cm}^2$



Nets

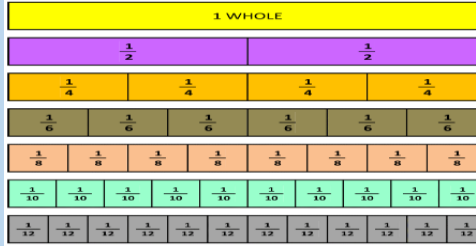
Cone		
Cuboid		
Hexagonal Prism		
Cylinder		

Parts of a circle



Fractions, decimals, percentages

Use equivalent fractions to compare and order fractions. Order fractions greater than 1. Simplify fractions.



Add and subtract fractions

$$\frac{2}{15} + \frac{3}{5} = ?$$

$$\frac{2}{15} + \frac{3 \times 3}{5 \times 3}$$

$$\frac{2}{15} + \frac{9}{15} = \frac{2+9}{15} = \frac{11}{15}$$

Multiply two fractions
Divide fractions by whole numbers

$$\frac{1}{2} \times \frac{20}{18} = \frac{20}{36}$$

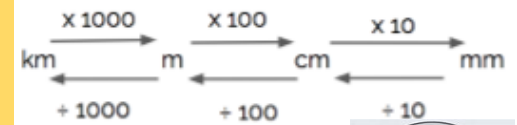
Write decimals as fractions and percentages

Percentage	Fraction	Decimal
100%	1	1
75%	3/4	0.75
66.66%	2/3	0.66
50%	1/2	0.50
33.33%	1/3	0.33
25%	1/4	0.25
20%	1/5	0.20
12.5%	1/8	0.125
10%	1/10	0.10
5%	1/20	0.05
2.5%	1/40	0.025

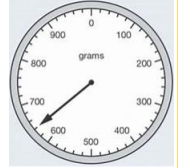
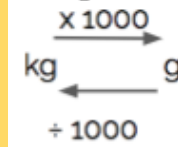
Measure

Converting measurements

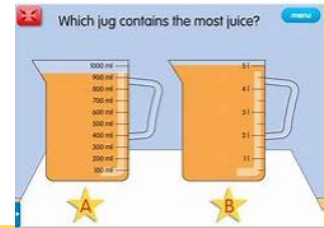
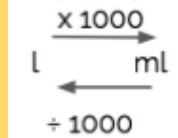
Length:



Weight:



Capacity:



Angles

Acute - Less than 90°

Straight Line - 180°

Obtuse - Greater than 90° and less than 180°

Reflex - Greater than 180° , but less than 360°

Full Rotation - 360°

Angles in a quadrilateral - 360°

Angles in a triangle - 180°

Angles around a point - 360°

<p>Reflex angle</p> <p>A reflex angle is an angle that is bigger than 180°</p>	<p>Obtuse angle</p> <p>An obtuse angle is an angle between 90° and 180°</p>
<p>Right angle</p> <p>A right angle is an angle that measures 90°</p>	<p>Triangles</p> <p>The angles of any triangle will always add up to 180°</p> <p>$a + b + c = 180^\circ$</p>