KPI 7.06 Addition and Subtraction

1) Addition Plus, add, sum, more than.	To find the total of two or more numbers. The inverse operation is subtraction. 1.38 4.90 + 6.28 1	**2) Subtraction** Subtract, minus, take away, less than.	To find the difference between two numbers. The inverse operation is addition. 8 1 4.90 1.38 - 3.52
3) Commutative	Addition is commutative – the order of addition does not change the result. Subtraction is not commutative.	**4) Associative**	When you add you can do so regardless of how the numbers are grouped. Subtraction is not associative.
5) Two-way Table	A visual representation of the possible relationships between two sets of categorical data. You can add and subtract values horizontally and vertically to find totals or missing values.		

	Child	Adult	Total
Male	7	9	16
Female	8	6	14
Total	15	15	30

The values in a row have a total at the right-hand side of the row.

The values in a column have a total at the bottom of the column.

KPI 7.07 Perimeter

1) Perimeter	The total distance around the outside of a closed shape. 8 cm 5 cm Perimeter = 5 + 8 + 5 + 8 = 26 cm	**2) Polygon**	A 2D shape which has 3 or more straight sides.
		3) Regular Polygon	A polygon where all sides are equal length, and all angles are of equal size.
		4) Irregular Polygon	A polygon where all sides are not equal and/or all angles are not equal.
		5) Units of Length	1 cm = 10mm; 1 m = 100 cm; 1 km = 1000 m

KPI 7.08 Mean

1) Average	A number expressing the central or typical value in a set of data.	**2) Mean**	The sum of the numbers divided by how many numbers are being averaged. E.g. Calculate the mean of 14, 6, 18, 2, 3. 1) Add the values: 14 + 6 + 18 + 2 + 3 = 43 2) Divide by 5 3) Mean is $\frac{43}{5}$ = 8.6
3) Reversing the Mean	If we have the mean but one of the data points is missing, we can find the missing value by: 1) Multiplying the 'mean' by the number of data points to get the total of the values. 2) Subtracting the sum of the known values from the total of all values.	E.g. The mean of three numbers is 5. Two of the numbers are 3 and 10. Find the third value. Total of the values: 5 x 3 = 15 15 – (3 + 10) = 2 The third value is 2	

KPI 7.09 Multiplication and Division

1) Multiplication
lots of, times, product, of

Multiplication is the operation of scaling one number by another.
Multiplication is the inverse operation of division.
Multiplication is commutative – the order of multiplication does not change the result. E.g. 2 x 3 = 3 x 2.
Multiplication is associative – when you multiply you can do so regardless of how the numbers are grouped. E.g. 1 x (2 x 3) = (1 x 2) x 3

2) Multiplying Integers

29 x 3

$$\begin{array}{r} 2\ 9 \\ \times\ \ 3 \\ \hline 8\ 7 \\ \hline \cancel{2} \end{array}$$

3) Multiplying Decimals

Remove the decimal points
Multiply
Insert the same number of decimal points in the answer as in the question
0.5 x 0.3
5 x 3 = 15
0.5 x 0.3 = 0.15

4) Division

Division can be thought of as sharing.
The number being divided is shared equally into the stated number of parts.
Division is the inverse operation of multiplication.

$$D \div \blacksquare = \blacksquare \overline{)D} = \frac{D}{\blacksquare}$$

E.g. $8 \div 9 = 9\overline{)8} = \frac{8}{9}$

$4524 \div 3$

$$3\overline{)4524} \quad 1\ 2 \quad 1508$$

$3 \div 8$

$$8\overline{)3.000} \quad 3\ 6\ 4 \quad 0.375$$

5) Dividend

The number being divided.
15 ÷ 3 → 15 is the dividend.

6) Divisor

The number by which another is divided.
15 ÷ 3 → 3 is the divisor.

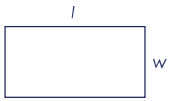
KPI 7.10 Area

1) Area

A measure of the space inside a 2D shape. Area is measured in square units. E.g. square centimetres (cm²), square metres (m²).

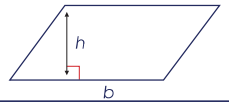
2) Area of a Rectangle

Area = length x width



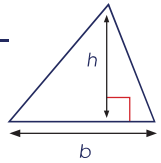
3) Area of Parallelogram

Area = base x height



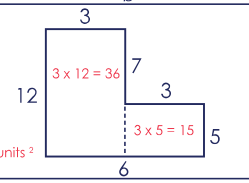
4) Area of Triangle

$$\text{Area} = \frac{\text{base x height}}{2}$$



5) Compound Area

Split into regular shapes
Find the area of each
Sum the areas



6) Units of Area

1 cm² = 100 mm²; 1 m² = 10,000 cm²

7) Area of Trapezium

Sum of the parallel sides.
Divide by 2.
Multiply by the vertical height.

$$A = \left(\frac{a+b}{2}\right) \text{x } h$$