Year 9 foundation topic 1

Number

Square numbers

The product of a number multiplied by it-self. Eg. 1x1=1, 2x2=4, 3x3=9 so 1,4,9 are the first 3 square numbers.

Cube numbers

A cube number is a number that is the product of three numbers which are the same.

Eg. 1x1x1=1, 2x2x2=8, 3x3x3=27 so 1,8 and 27 are the first 3 cube numbers.

Rounding rule

5 or more round up, less than 5 round down.

Rounding with significant figures

The significant figures of a number are the digits which carry meaning (ie. are significant) to the size of the number.

The first significant figure of a number cannot be zero.

In a number with a decimal, trailing zeros are not significant.

Eg. In the number 0.00821, the first significant figure is the 8.

In the number 2.740, the 0 is not a significant figure.

0.00821 rounded to 2 significant figures is 0.0082.

What careers would use these skills?

Rounding is important in finance, money is always written with two decimal places.

Rounding with decimal places

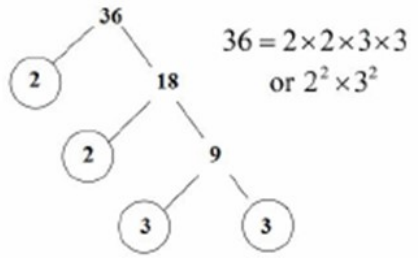
Eg. Round 0.372 to 2 decimal places.

In the number 0.372, the 7 is in the second decimal place. 0.372 rounded to two decimal places is 0.37, because the 2 tells us to round down.

Be careful with money - don't write £27.4, instead write £27.40

Prime factor decomposition

Finding out which **prime numbers multiply** together to make the **original** number.



Multiply decimals

1. Multiply as if the numbers were whole numbers.

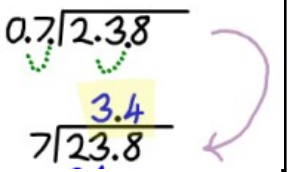
2, Count the number of decimal places in the problem.

3. Put the same number of places behind the decimal in the product.

$$\begin{array}{rl} 2.34 & \text{2 decimal places} \\ \times\ 1.2 & +\ \text{1 decimal place} \\ \hline 2.808 & \text{3 decimal places} \end{array}$$

Divide decimals

1. Make the number you are dividing by a whole number.
2. Move the decimal point the same number of places in the number you are dividing.
3. Divide as normal.
4. Put the decimal point directly above
5. Check the answer makes sense.



BIDMAS

An acronym for the **order** you should do calculations in.

BIDMAS stands for **'Brackets, Indices, Division, Multiplication, Addition and Subtraction'**.

Indices are also known as 'powers' or 'orders'.

Eg. $5^2 = 25$ where the 2 is the index/power

6 + 3 x 5 = 21 not 45

Highest common factor (HCF)

The **biggest** number that **divides exactly** into two or more numbers.

Eg. The HCF of 6 and 9 is 3 because it is the biggest number that divides into 6 and 9 exactly.

Lowest common multiple (LCM)

The **smallest** number that is in the **times tables** of each of the numbers given.

Eg. The LCM of 3, 4 and 5 is 60 because it is the smallest number in the 3, 4 and 5 times tables .

Factors

A number that **divides exactly** into another number without a remainder. Eg. The factors of 8 are: 1 ,2,4,8.

The factor pairs are : 1&8 and 2&4

Multiples

The result of multiplying a number by an integer.

Eg. The first 5 multiples of 7 are: 7,14,21,28,35