

Maths Top Tips – Unit 1 Foundation

Percentage means “fraction out of 100”

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

25% = 0.25 = $\frac{1}{4}$ halve then halve again

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

1% = 0.01 = $\frac{1}{100}$ divide by 100

Harder Percentages:

Remember that you have your calculator

To find any percentage **divide** the amount **by 100** and **multiply** by the percentage required.

Eg to find 37% of £248

you do $248 \div 100 \times 37$ and get £91.76

To calculate a **percentage increase** (or decrease), find the **percentage** and **add it on** (or take it away)

Eg to increase 120m by 15%

15% of 120m = $120 \div 100 \times 15 = 18\text{m}$

$120\text{m} + 18\text{m} = 138\text{m}$

Comparing Data Sets: compare like with like

If you are given the mean for one set then **use the information given** to work out the mean for the other then **compare them** and explain what the 2 numbers tell you.

Try to compare an average for each set (usually mean or median) and the ranges.

If you have to **compare graphs** make sure you draw the **same type of graph** or do a comparative bar chart or frequency polygons on the same axes.

Fractions of...

To find a **fraction of an amount** you **divide by the bottom** and **times by the top**

Eg to find $\frac{2}{3}$ of 18m you do $18 \div 3 = 6$ then $6 \times 2 = 12\text{m}$

Data collection sheet = 2-way table or tally chart

General tips: Check the units

Read the question carefully – underline important words

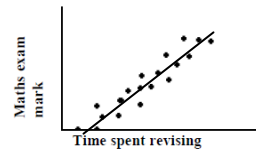
Show all methods - write down everything you put in the calculator and write down the **full calculator display**

Carefully **read the scale** on a diagram or graph

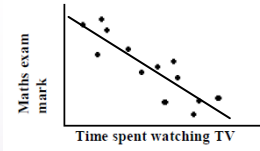
If you draw a graph remember to **label the axes** and give it a **title**

Make sure you actually **answer the question** once you have done the calculations and **write down the numbers** you are comparing

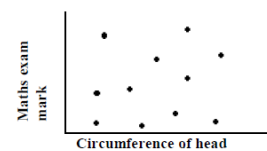
Scatter Graphs and Correlation



Positive Correlation:
The more time revising the higher the maths mark



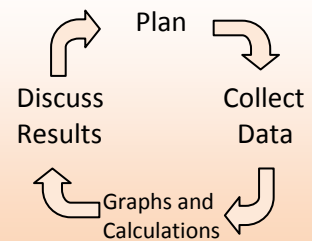
Negative Correlation:
The more time watching TV the lower the maths mark



No Correlation:
The size of your head does not affect your maths mark

Use a line of best fit to make predictions

Data Handling Cycle



Averages:

mode/modal – the most common value or values

median – the middle value when they are in order

mean – add up all the values and divide by the number of terms

Measure of spread:

range – highest value take away the lowest value

The smaller the range the less varied the results

Interpreting your calculator answer:

Are you working in £ or pence? Remember to round final money answers to the nearest penny.

Eg $£37 \div 11 = £3.36363636... = £3.36$

10% of £36 = $£36 \div 10 = 3.6$ which means £3.60

Are you working with time? Remember there are 60 minutes in an hour.

Eg 1 hour 45 mins = 1.75 hours ($1\frac{3}{4}$ hours)

To convert hours to minutes you x 60

Eg 0.12 hours = 0.12×60 minutes = 7.2 minutes

Probability

Take care – are you asked for a **word** eg impossible, unlikely, even chance, likely, certain or a **numerical probability** eg $\frac{1}{2}$?

Numerical probabilities must be **fractions, decimals or percentages**.

$P(\text{A not happening}) = 1 - P(\text{A})$

Probability adds up to 1

Be systematic when listing outcomes