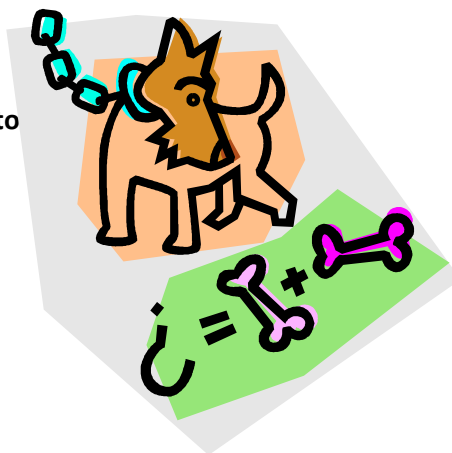# How to get a Grade C in Mathematics

Here's a funny joke : **How does your Maths Teacher get you to behave in lessons. I've told you n times and I've told you n + 1 times**

Useful Revision websites

http://www.schoolworkout.co.uk/index.htm

http://www.rainforestmaths.com

http://numberloving.co.uk

www.s-cool.co.uk/gcse/maths

www.waldomaths.com

www.bbc.co.uk/schools/studentlife/revisionskills/
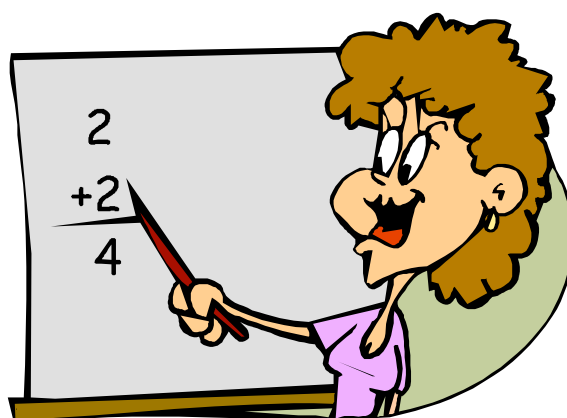
(A useful link to revision tips)

Important Dates

28th February – Paper 1 (Non-Calculator Paper)

4th March – Paper 2 (Calculator Paper)

Slips and Tips

I DON'T WANT YOU TO THROW AWAY MARKS IN YOUR EXAM !

Most of the questions are worth 2 or more marks. Even if you make a slip and make a mistake with the final answer you can often pick up marks by showing you knew the correct method

With some questions you can see if you have gone wrong. If, for example when you complete a question you find a person is 220m tall or the angle total for a circle adds up to 450°

GRADE C CHECKLIST

Handling Data

- **Finding an estimate of the Mean from grouped data**
- **Draw and Interpret Stem and Leaf Diagrams**
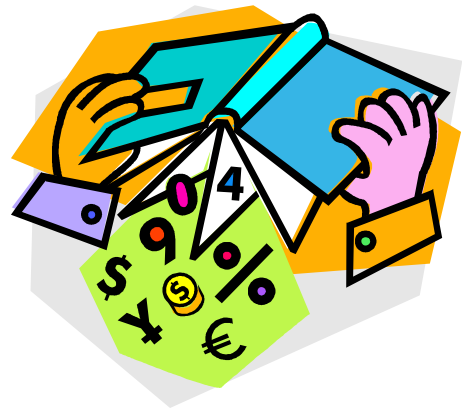- **Interpret Correlation and draw a Line of Best Fit**

Number

- **Round numbers to decimal places and significant figures**
- **Add, subtract, multiply and divide fractions**
- **Percentage Increase and Decrease including Interest**
- **Calculations with negative numbers**
- **Prime Factors and Prime Factor Decomposition**
- **LCM and HCF**

Shape, Space and Measures

- **Area of Parallelograms and Trapeziums**
- **Area of Compound Shapes**
- **Alternate, Corresponding and Interior Angles in Parallel Lines**
- **Area and Circumference of a Circle**
- **Surface Area and Volume of a Prism**
- **Pythagoras' Theorem**

Algebra

- **Expand expressions with brackets**
- **Factorise simple expressions**
- **Solve Linear Equations**
- **nth term**

QUESTION PAPER TERMINOLOGY

What we say…….	What we mean……..
Expand and simplify	**Multiply out and collect like terms**
Multiply and simplify	**Multiply out then collect like terms**
Solve	**Find the value/s that make the equation true**
Make the subject	**Rearrange a formula**
Express in terms of	**Write an expressions using only the letters given**
Write down	**Answer is clear and does not need any working**
Factorise	**Make Brackets**
Estimate	**Use a sensible guess**
Simplify	**Collect Terms together**

Remember these key mathematical terms / definitions

HANDLING DATA

The **MODE** is the most common value in a set of data

The **MEDIAN** is the middle value when the numbers are arranged in order of size

The **MEAN** is the total of all values divided by the number of values

The **RANGE** IS THE Largest Value – Smallest Value

The **PROBABILITY** of an impossible event is 0 and the probability of a certain event is 1

A **TWO-WAY TABLE** is a table that links two variables

A **SCATTER DIAGRAM** shows the relationship between two variables

NUMBER

BIDMAS outlines the order you must follow when working out a problem

If two **FRACTIONS** have the same **DENOMINATOR** they can be added or subtracted

EQUIVALENT FRACTIONS can be found by multiplying both the **NUMERATOR** and **DENOMINATOR** by the same number. To cancel a fraction look for the HCF that goes in to the numerator and denominator

A **TOP HEAVY FRACTION** is where the numerator is bigger than the denominator. Top Heavy Fractions are known as **IMPROPER FRACTIONS**

Fractions that are not top heavy are called **PROPER FRACTIONS**

A **MIXED NUMBER** is a mixture of a whole number and proper fraction. To change a top heavy fraction in to a mixed number **DIVIDE** the numerator by the denominator to find the whole number, then the **REMAINDER** is the numerator of the proper fraction

To change a mixed number in to a top heavy fraction **MULTIPLY** the whole number by the denominator and **ADD** the result to the numerator, to find the numerator of the top heavy fraction

To find a **FRACTION OF A QUANTITY** you **MULTIPLY** the fraction by the quantity

To write one quantity as a fraction of another write the **FIRST QUANTITY** as the **NUMERATOR** and the **SECOND QUANTITY** as the **DENOMINATOR**

A **RATIONAL NUMBER** is any number that can be expressed as a fraction

The **RECIPROCAL** of a number is the result of dividing the number in to 1

NEGATIVE NUMBERS become smaller the further down the number line they are

MULTIPLES are numbers in the x tables

A **FACTOR** of a number is any whole number that divides in to it exactly. 1 is always a factor and so is the number itself

A **PRIME NUMBER** is a number with only 2 factors

The **POWER** of 2 is also called the number squared

The **SQUARE ROOT** of a given number is the number that when multiplied by itself produces the given number

Powers are a convenient way of writing repeated multiplications and are called **INDICES**

The **LOWEST COMMON MULTIPLE** of 2 numbers is the smallest number that appears in the x table for both sets of numbers

The **HIGHEST COMMON FACTOR** of 2 numbers is the largest numbers that divides exactly in to the two numbers

The number of **DECIMAL PLACES** in a number is the number of digits after the decimal point. To round a number to 1 decimal place look at the digit in the 2nd decimal place. If it is less than 5 remove the unwanted digits. If it is 5 or more add 1 on to the digit in the 1st decimal place

To **MULTIPLY** fractions multiply the numerators and denominators. When multiplying **MIXED NUMBERS** change the mixed numbers in to top heavy fractions then multiply as you would for normal fractions

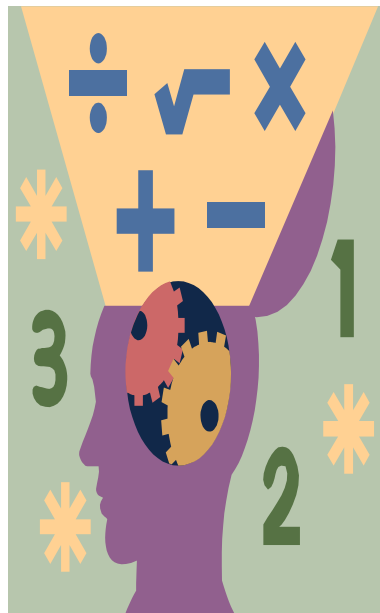To **DIVIDE** by a fraction turn it upside down and multiply by it

YOU ARE GOING TO

GET A GRADE C

DON'T GIVE UP

LISTEN IN CLASS

ASK FOR HELP

SHAPE, SPACE and MEASURES

The **PERIMETER** of a shape is the sum of the lengths of all its sides

The **AREA OF A RECTANGLE** = LENGTH X WIDTH

The **AREA OF A TRIANGLE** = ½ x base x height

To find the **AREA OF A PARALLELOGRAM** multiply the base by the perpendicular distance between the sides

The **AREA OF A TRAPEZIUM** = ½ x h x (a + b) where a and b are parallel sides
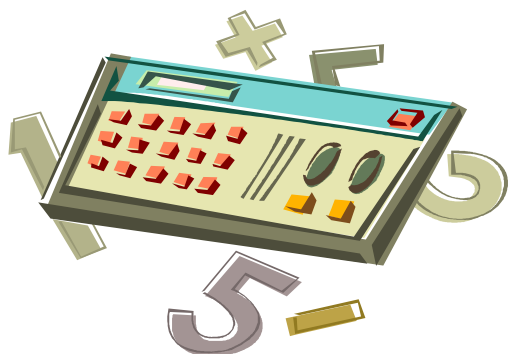
The **ORDER OF ROTATION** of a shape is the number of different positions in which the shape looks the same when rotated

A **PLANE OF SYMMETRY** is a flat surface that can be cut through a shape sp that what is on one side is the mirror image of the other

Angles in a Triangle add up to 180°, Angles on s Straight Line add up to 180°, Angles around a Point add up to 360°, Angles in a Quadrilateral add up to 360°

The **SURFACE AREA OF A CUBOID** is the area covered by its net

The **VOLUME OF A CUBOID** = L x w x h

ALGEBRA

SIMPLIFYING an expression means writing it in as neat a form as possible

To **COLLECT LIKE TERMS** combine terms that are similar

EXPAND means **MULTIPLY OUT EVERYTHING**

FACTORISE is the opposite of expanding (Look for the HCF in each term)

A **LINEAR EQUATION** is one that only involves one variable

A **NUMBER SEQUENCE** is a series of numbers that follow a rule

SEE IF YOU CAN DO IT – TO GET A GRADE C

ALGEBRA

I can :

- **Solve equations including brackets**
- **I can write expressions and simplify them**
- **I can factorise expressions**
- **Substitute numbers in to expressions**
- **Solve Inequalities**
- **Complete a table of values and plot a graph**

HANDLING DATA

I can :

- **Find the Mean, Mode, Median and Range of a set of data**
- **Find the Modal Class for grouped data and the class interval in which the median lies**
- **Find an estimate of the mean for grouped data**
- **Draw and calculate from two way tables**
- **Find probabilities**
- **Design suitable questions for use in a survey or questionnaire**
- **Draw and interpret Scatter Diagrams**
- **Draw and interpret Stem and Leaf Diagrams**
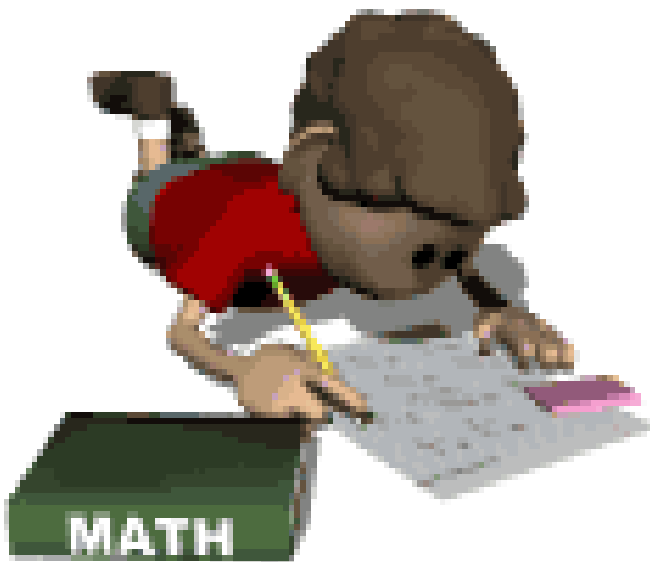- **Draw Pie Charts**

SSM

I can :

- **Calculate the Area and Volume of shapes**

- **Work out the length of the missing side in a right angled triangle**
- **Recall angle facts involving triangles, quadrilaterals etc...**
- **Reflect, Rotate and Enlarge a shape**
- **Use the formula for the Area and Circumference of a Circle**

NUMBER

I can :

- **Split an amount in to a given ratio**
- **Solve proportion problems**
- **Use and apply Standard Form**
- **Find the HCF and LCM**
- **Find the nth term in a sequence**
- **Find Prime Factors**
- **Round to a given number of decimal places or significant figures**
- **Calculate percentage increase or decrease**
- **Calculate with fractions**

And Finally : The key to success with GCSE Mathematics is to revise before you take the exam and don't start revising a few days before. Success will happen if

You practice a little and often using the resources I have given to you

Don't just practice the questions and topics you know you can do but practice the topics you know you will struggle with

Remember the examiner wants to give you a Grade C but cannot do so if you either leave questions out or don't show working out. If the question is worth more than 1 mark then show your working out

Don't feel that you cannot ask me for help. I am here to support you in achieving success and want you to get a Grade C. Attendance at after school revision and any other opportunities that arise before 28th February and the 4th March will be of great benefit

Look through the Mock Paper to see where you did well and the topic area you need more practice with

You will know you are getting better when the practice questions become easier. Remember that not all questions on the Foundation Paper are Grade C standard

<u>Here's another funny joke</u> : A retired Maths Teacher took up gardening and is now growing carrots with Square Roots