Tollfield Campus

Welcome to Year 7

Term 1

Sequences

Understand and use algebraic notation.

ALGEBRAIC THINKING

Equality and equivalence.

Term 2

Place value and ordering integers and decimals.

PLACE VALUE and PROPORTION

Fractions, decimals and percentage equivalence

Term 3

Solving problems with addition and subtraction.

APPLICATIONS OF NUMBER

Fractions and percentages of amounts.

Solving problems with multiplication and division.

Operations and equations with directed number.

DIRECTED NUMBER and FRACTIONAL THINKING

Term 4

Addition and subtraction of fractions.

Developing geometric reasoning.

LINES AND ANGLES

Constructing, measuring and using geometric notation.

Term 5

Developing number sense.

Prime numbers and proof

REASONING WITH NUMBERS

Sets and probability.

Term 6

Marian Campus

Welcome to Year 8

Number

Ratio and Scale: Understand and use ratio.

Multiply & Divide fractions Improper fractions & mixed numbers

Representing data
Discrete/Continuous data
Scatter graphs
Frequency tables

Direct proportion
Graphs
Scale factors

Working in the Cartesian plane. Co-ordinates, straight lines, gradient

Tables and probability
Sample spaces
Venn diagrams

Fractions & Percentages
Calc/non-calc methods

Brackets
Form and solve equations
Inequalities

Algebraic Expressions

Number sense
Round numbers
Estimate
Metric units

Standard Index Form
Powers of 10
Write in Standard form
Calculate in Std Form

Indices

Sequences

Angles in parallel lines and polygons

Questionnaires
Pictograms
Bar charts
Pie Charts

Data handling cycle
Statistical enquiry

Measures of location
Mode
Median
Mean

Area of trapezia & circles
Compound shapes

Line Symmetry & Reflection
Horizontal & Vertical lines
Diagonal lines

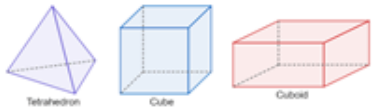
Grouped data
Types of data
Interpreting data
Using appropriate diagrams
Range

To Year 9

Welcome to Year 9

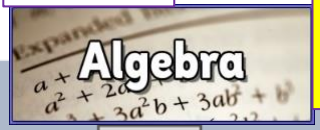
Term 1

3-DIMENSIONAL SHAPES



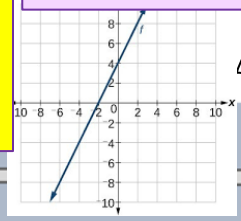
Forming and Solving Equations
Inequalities
Rearranging Formulae

$$2x - 3 = 7$$
$$+3 \quad +3$$
$$\frac{2x}{2} = \frac{10}{2}$$
$$x = 5$$



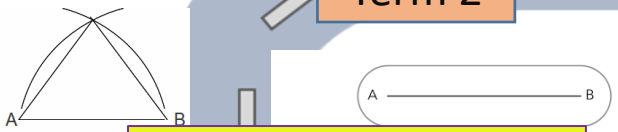
STRAIGHT LINE GRAPHS

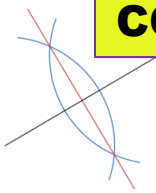
Parallel Lines
Y= mx+c
Real-life graphs



Term 2

CONSTRUCTIONS

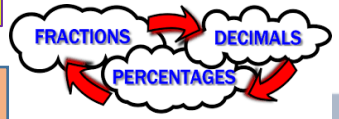




CONGRUENCY

Term 3

NUMBER



PERCENTAGES

Directed Numbers
HCF and LCM
Decimals & Fractions
Standard Form

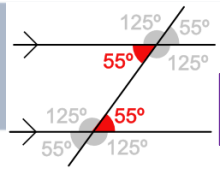
Term 4

MATHS & MONEY

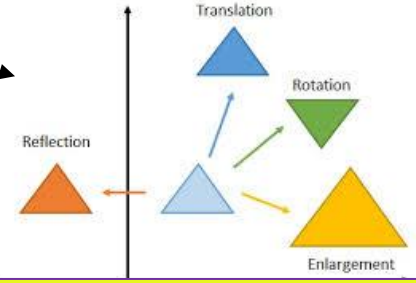
Bills , Wages, VAT,
TAX, Exchange rates,
Interest

GEOMETRY

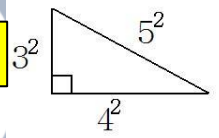
ANGLES



TRANSFORMATIONS



PYTHAGORAS' THEOREM

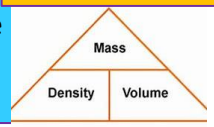


Term 5

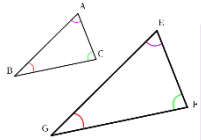
RATIO, PROPORTION & RATES

Direct Proportion
Inverse Proportion
Best Buys

Speed Distance Time
Density Mass Volume
Flow problems
Rates of Change



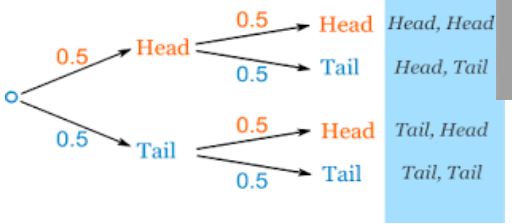
ENLARGEMENT AND SIMILARITY



Scale Factors
Similar Shapes
Similar Triangles

Term 6

PROBABILITY

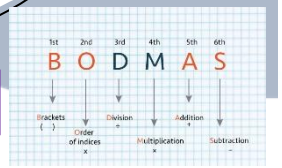


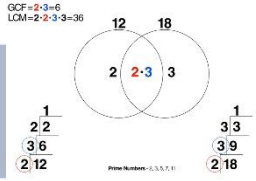
Welcome to Year 10

Foundation

TERM 1

Properties of Number. HCF(GCF); LCM; Squares and $\sqrt{x}$





Approximations/ Error boundaries/ Rounding

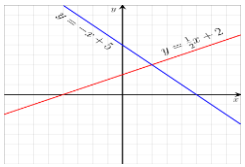
Use of calculator

Multiplying	Factoring
$3(5x+1) = 3\cdot 5x + 3\cdot 1$ $= 15x + 3$	$15x + 3 = 3\cdot 5x + 3\cdot 1$ $= 3(5x+1)$
$2x^2(3x^3+4) = 2x^2\cdot 3x^3 + 2x^2\cdot 4$ $= 6x^5 + 8x^2$	$6x^5 + 8x^2 = 2x^2\cdot 3x^3 + 2x^2\cdot 4$ $= 2x^2(3x^3+4)$

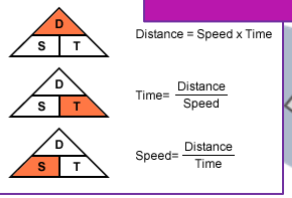
Basic Algebra – expanding and factorising (linear and quadratic)

TERM 2

Expressions – Formulae – Equations – Identities. Rearranging subject of formulae. $V^2 = u^2 + 2as$

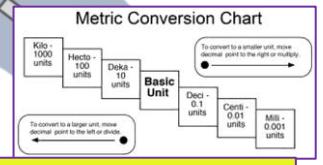


Speed/Distance/Time Ratio/Proportion Best buys



$$2x - 3 = 7$$
$$+3 \quad +3$$
$$\frac{2x}{2} = \frac{10}{2}$$
$$x = 5$$

Solving Equations



Measures & Scale Drawing

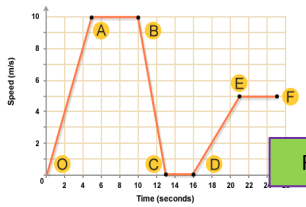
TERM 4

Fractions / Decimals / Percentages

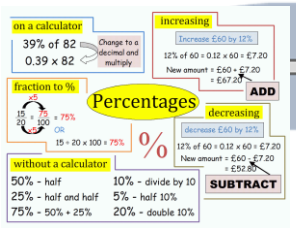
Simultaneous Equations

$$\begin{cases} -x+5y=8 \\ 3x+7y=-2 \end{cases} \xrightarrow{\times 3} \begin{cases} -3x+15y=24 \\ 3x+7y=-2 \end{cases}$$
$$-3x+15y = 24$$
$$+\quad 3x+7y = -2$$
$$22y = 22$$
$$\frac{22y}{22} = \frac{22}{22}$$
$$y = 1$$

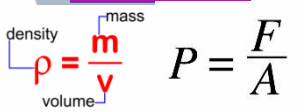
Linear graphs / Gradient / y=mx+c



Real life graphs



%s and Compound measures



$$P = \frac{F}{A}$$

Repeated % change

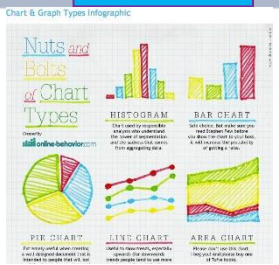
Reverse percentages (%)

Interest : Simple & Compound

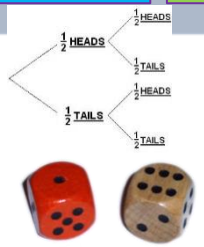
$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = Amount accumulated
P = principal
r = interest rate
n = compoundings per period
t = number of periods

Proportion: Direct & Inverse



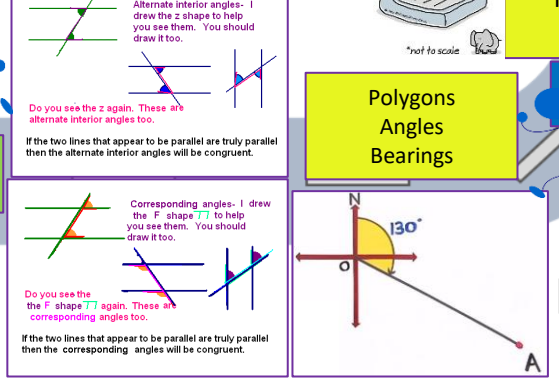
Charts, tables & averages and range



Probability; events; choices & outcomes.

Numbers sequences; nth terms; Fibonacci

TERM 5

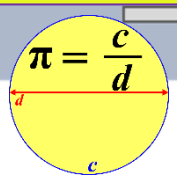


Polygons Angles Bearings

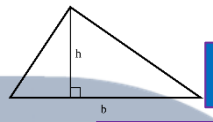
TERM 3

Perimeter; Area ; Circles; Triangles; Compound shapes

$$\pi = \frac{c}{d}$$



$$area = \frac{1}{2}(b \times h)$$



TERM 6

Statistics; Sampling; Pie charts; Scatter graphs

Grouped data & Averages

Welcome to Year 10

Higher

TERM 1

Properties of Number. HCF(GCF); LCM; Squares and $\sqrt{x}$

Approximations/ Error boundaries/ Rounding

Fractions / Decimals / Percentages

Polygons
Angles & Parallel Lines
Bearings & scale drawing

Solving linear and graphical inequalities; Trial & Improvement

Simultaneous Equations

Solving Equations

TERM 2

%s and Compound measures

$$P = \frac{F}{A}$$

$$\text{density } \rho = \frac{\text{mass } m}{\text{volume } v}$$

Reverse percentages (%)

Repeated % change

Interest : Simple & Compound

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

A = Amount accumulated
P = principal
r = interest rate
n = compoundings per period
t = number of periods

Basic Algebra – expanding – 1,2 & 3 brackets.
factorising (linear and quadratic)

Expressions – Formulae – Equations – Identities.
Rearranging subject of formulae.
$V^2 = u^2 + 2as$

TERM 3

Statistics:- Pie charts; Bar charts; Scatter graphs; Stem & Leaf diagrams

Curved shapes and Pyramids: Sectors, Cones & Spheres

Averages from Freq table. Grouped data & Averages

TERM 4

Congruent triangles

Transformations: TERRy
Neg & Fractional Scale factors
Vectors $\begin{pmatrix} a \\ b \end{pmatrix}$

Constructions & Loci
Plans & Elevations

Linear Graphs : Gradient, Finding the Equation of a graph. Parallel & Perpendicular lines. Graphical solution of sim. Eq.

Numbers sequences; nth terms; Fibonacci; Special sequences; Quadratic sequences

Similar Triangles: Show similar; find missing lengths

Area and Volume of Similar shapes

TERM 5

Probability: Combined events; two way tables, Tree diagrams Venn diagrams Mutually exclusive and exhaustive events

Powers: Rules of indices
Standard Form: convert between SF and normal numbers

Probability: Combined events Tree diagrams Independent Events Conditional Probability.

TERM 6

Counting, Accuracy, Powers & Surds; Rational numbers, Reciprocals, terminating and recurring decimals Negative and fractional powers; Limits of accuracy

$$x^{\frac{3}{2}} = \sqrt[2]{x^3}$$

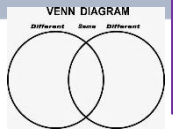
Welcome to Year 11

Foundation

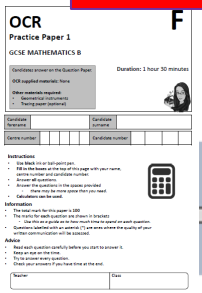
TERM 1

Revision :
Number, Ratio & Propotion Algebra, Shape & Space , Stats & Probability

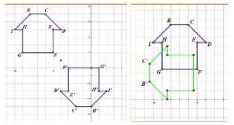
Probability:
Combined events;
two way tables,
Tree diagrams
Venn diagrams

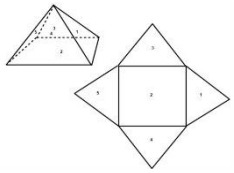


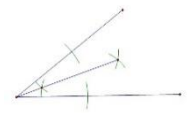
Trial 1



Transformations:
TERRy
Vectors $\begin{pmatrix} a \\ b \end{pmatrix}$



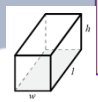




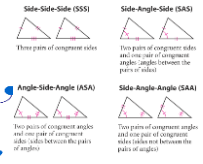
TERM 2

Constructions &
Loci

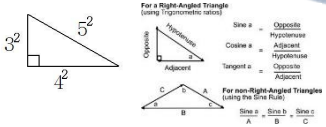
Volume & Surface Area of 3D solids (prisms);
Nets



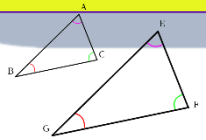
Curved shapes and Pyramids:
Sectors, Cones & Spheres



Right- Angled Triangles:
Pythagoras' Theorem
Trigonometric ratios
Problem solving with Trig & Bearings



Congruent triangles
&
Similarity



Powers: Rules of indices
Standard Form:
convert between SF and normal numbers

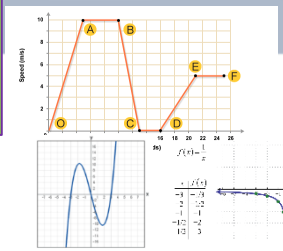
$$(2.25\times10^{4})(7.5\times10^{6}) = (2.25)(7.5)\times10^{4+6}$$
$$= 16.875\times10^{10}$$
$$= 1.6875\times10^{11}$$
$$= 1.7\times10^{11} \quad (2\text{ s.f.})$$

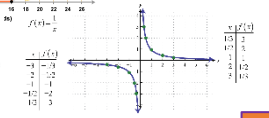
TERM 3

Simultaneous Equations and Linear Inequalities:
Solving problems with Sim Eq's

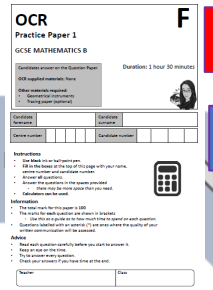
$$\begin{cases} -x+5y=8 \\ 3x+7y=2 \end{cases} \Rightarrow \begin{cases} -3x+15y=24 \\ 3x+7y=2 \end{cases}$$
$$-3x+15y=24$$
$$+\ 3x+7y=-2$$
$$22y=22$$
$$\frac{22y}{22}=\frac{22}{22}$$
$$y=1$$

Non-linear graphs:
Distance-Time,
Velocity-Time,
Quadratic, Cubic,
Reciprocal graphs





Trial 2



TERM 4

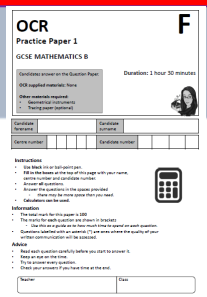
EXAMS

TERM 5

Revision:
Practising exam skills
Past Papers
Maths Box
Maths Watch
GCSE Pod
QLA

REVISION
Review Trial 2
Resits

TERM 6



Welcome to Year 11

TERM 1

Right- Angled Triangles:
Pythagoras' Theorem
Trigonometric ratios
Problem solving with Trig & Bearings

Quadratic Equations:
Graphs
Solving Quadratic Equations: completing the square, formula.

Quadratic Inequalities.
Linear on non-linear sim.equations.

Sampling & Statistics:-
Sampling data

TERM 2

Statistics:-
Frequency polygons
Cumulative Freq graphs
Box plots
Histograms

Circle theorems:
Cyclic quadrilaterals
Tangents & chords
Alternate segment theorem

Trigonometry: Problems in 2D & 3D
Trig ratios between 0^0 and 360^0
Solving any triangle : Sine & Cosine Rules
Area of non-right-angled triangles

$$\frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$$

$$\frac{a}{\sin(A)} = \frac{b}{\sin(B)} = \frac{c}{\sin(C)}$$

$$a^2 = b^2 + c^2 - 2bc\cos(A)$$

Variation:
Direct & Indirect Proportion

$y \propto x$
$y = kx$

$y \propto \frac{1}{x}$
$y = \frac{k}{x}$

TERM 3

Non-linear graphs:
Distance-Time,
Velocity-Time,
Quadratic, Cubic,
Reciprocal graphs
Equation of a circle

Algebraic Fractions & Functions
Change the subject of a formula
Composite functions gf(x), fg(x)
Iterations: $x_{n+1}=2(x_n)^2 - 3$

Transformations of the graph y = f(x)

Vector geometry:
Properties of vectors.
Applications in geometry

Trial 1

Trial 2

Higher

Revision : Number, Ratio & Propotion Algebra, Shape & Space , Stats & Probability

TERM 4

REVISION
Review Trial 2
Resits

TERM 5

Revision:
Practising exam skills
Past Papers
Maths Box
Maths Watch
GCSE Pod
QLA

TERM 6

EXAMS