



Term 1

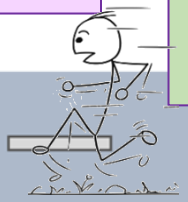
Sequences

Understand and use algebraic notation.

ALGEBRAIC THINKING



Equality and equivalence.



Place value and ordering integers and decimals.

Term 2

PLACE VALUE and PROPORTION

Fractions, decimals and percentage equivalence



Term 4

DIRECTED NUMBER and FRACTIONAL THINKING

Operations and equations with directed number.



Solving problems with addition and subtraction.

Term 3

APPLICATIONS OF NUMBER

Fractions and percentages of amounts.

Solving problems with multiplication and division.

Addition and subtraction of fractions.



Term 5

Constructing, measuring and using geometric notation.

LINES AND ANGLES

Developing geometric reasoning.



Developing number sense.

REASONING WITH NUMBERS

Prime numbers and proof

Sets and probability.

Term 6



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



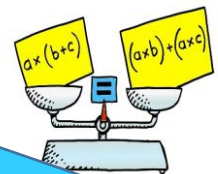
Algebraic Expressions

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

Data handling cycle
Statistical enquiry



Questionnaires
Pictograms
Bar charts
Pie Charts

Measures of location
Mode
Median
Mean

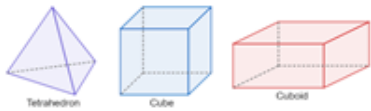
Area of trapezia & circles
Compound shapes

Line Symmetry & Reflection
Horizontal & Vertical lines
Diagonal lines

Grouped data
Types of data
Interpreting data
Using appropriate diagrams
Range

To Year 9





3-DIMENSIONAL SHAPES

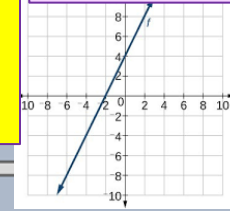
Forming and Solving Equations
Inequalities
Rearranging Formulae

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

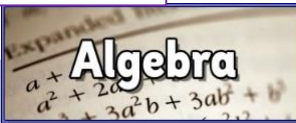
Term 1

STRAIGHT LINE GRAPHS

Parallel Lines
 $Y = mx + c$
Real-life graphs



Welcome to Year 9



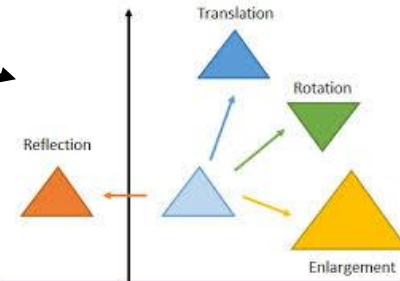
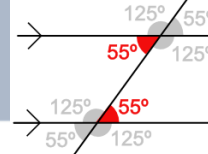
Term 2

CONSTRUCTIONS



GEOMETRY

ANGLES



TRANSFORMATIONS

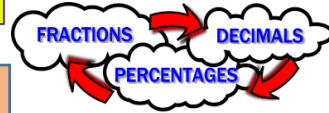
CONGRUENCY



Term 3

NUMBER

PERCENTAGES



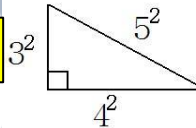
MATHS & MONEY

Term 4



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

PYTHAGORAS' THEOREM



Directed Numbers
HCF and LCM
Decimals & Fractions
Standard Form

$$A \times 10^N$$

Term 5



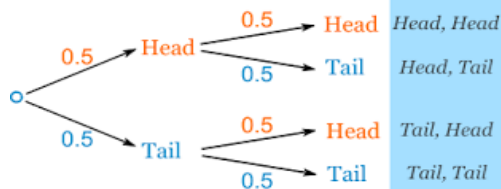
RATIO, PROPORTION & RATES

Direct Proportion
Inverse Proportion
Best Buys

ENLARGEMENT AND SIMILARITY

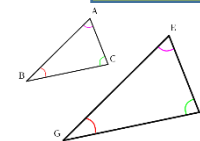
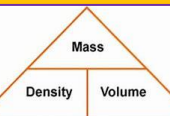
Scale Factors
Similar Shapes
Similar Triangles

PROBABILITY



Term 6

Speed Distance Time
Density Mass Volume
Flow problems
Rates of Change



Welcome to Year 10



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

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

Basic Algebra – expanding and factorising (linear and quadratic)

Speed/Distance/Time
Ratio/Proportion
Best buys

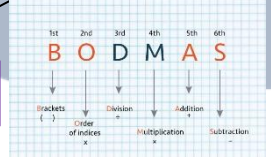
$$2x - 3 = 7$$

$$+ 3 + 3$$

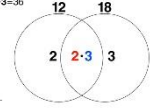
$$\frac{2x}{2} = \frac{10}{2}$$

$$x = 5$$

TERM 1



GCF=2-3=6
LCM=2-2-3=36



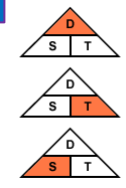
$$\frac{1}{2} \cdot \frac{2}{3} = \frac{2}{6} = \frac{1}{3}$$

$$\frac{1}{3} \cdot \frac{3}{9} = \frac{3}{27} = \frac{1}{9}$$

Approximations/ Error boundaries/ Rounding

TERM 2

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

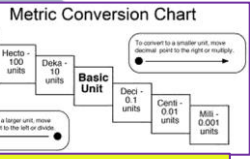


Distance = Speed x Time

Time = $\frac{\text{Distance}}{\text{Speed}}$

Speed = $\frac{\text{Distance}}{\text{Time}}$

Solving Equations



Foundation

TERM 4



Fractions / Decimals / Percentages

Simultaneous Equations

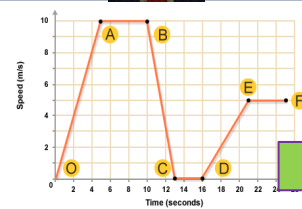
$$\begin{cases} -x + 5y = 8 \\ 3x + 7y = -2 \end{cases} \Rightarrow \begin{cases} -3x + 15y = 24 \\ 3x + 7y = -2 \end{cases}$$

$$22y = 22$$

$$22y = 22$$

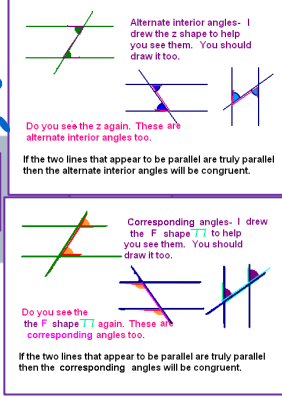
$$22 = 22$$

$$y = 1$$

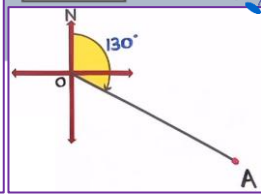


Linear graphs / Gradient / $y=mx+c$

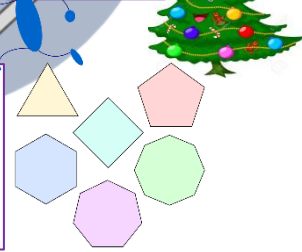
Real life graphs



Polygons Angles Bearings



TERM 3



on a calculator
39% of 82
 0.39×82

without a calculator
50% - half
25% - half and half
75% - 50% + 25%

Change to a decimal and multiply
12% of 60 = $0.12 \times 60 = £7.20$
New amount = $£60 + £7.20 = £67.20$

Decrease £60 by 12%
12% of 60 = $0.12 \times 60 = £7.20$
New amount = $£60 - £7.20 = £52.80$

10% - divide by 10
5% - half 10%
20% - double 10%

%s and Compound measures

$$\rho = \frac{m}{v}$$

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



TERM 5

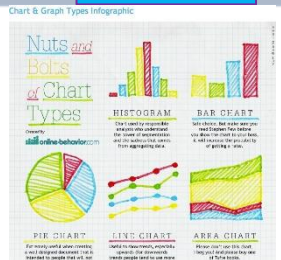
Reverse percentages (%)
Interest : Simple & Compound

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

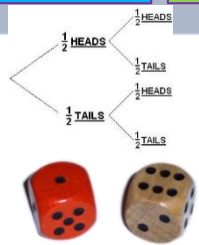
A = Amount accumulated
P = principal
r = interest rate
n = compoundings per period
t = number of periods

Proportion: Direct & Inverse

Charts, tables & averages and range



Probability; events; choices & outcomes.

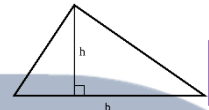


Numbers sequences; nth terms; Fibonacci

Perimeter; Area ; Circles; Triangles; Compound shapes

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

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



TERM 6

Statistics; Sampling; Pie charts; Scatter graphs

Grouped data & Averages



Welcome to Year 10

TERM 1

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



Percentages

on a calculator
 39% of 82
 0.39×82
 Change to a decimal and multiply

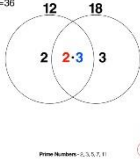
Increasing
 Increase £60 by 15%
 $12\% \text{ of } 60 = 0.12 \times 60 = £7.20$
 New amount = $£60 + £7.20 = £67.20$

without a calculator
 50% = half
 25% = half and half
 75% = 50% + 25%

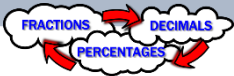
Decreasing
 Decrease £60 by 15%
 $12\% \text{ of } 60 = 0.12 \times 60 = £7.20$
 New amount = $£60 - £7.20 = £52.80$

ADD
 SUBTRACT

GCF=2-3=6
 LCM=2-2-3-3=36



Approximations/ Error boundaries/ Rounding



Fractions / Decimals / Percentages

%s and Compound measures

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

$$\rho = \frac{m}{V}$$

density = mass / volume

Reverse percentages (%)

TERM 2

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

Repeated % change

Interest : Simple & Compound

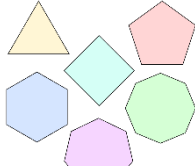
$$A = P \left(1 + \frac{r}{n}\right)^{nt}$$

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

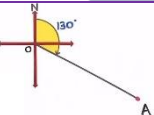
Multiplying	Factoring
$(2x+3)(x+1) = 2x^2 + 5x + 3$	$2x^2 + 5x + 3 = (2x+3)(x+1)$
$3x^2(x^2+4) = 3x^4 + 12x^2$	$6x^2 + 8x^2 = 2x^2(3x^2 + 4) = 2^2(3x^2 + 4)$

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

Higher

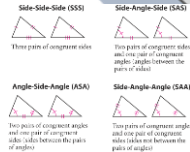


Polygons Angles & Parallel Lines Bearings & scale drawing



TERM 4

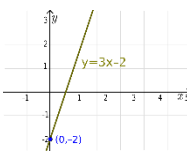
Congruent triangles



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.



Simultaneous Equations

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

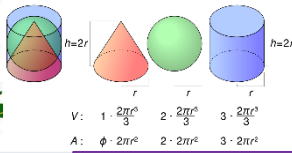
$$\begin{array}{r} -3x + 15y = 24 \\ + 3x + 7y = -2 \\ \hline 22y = 22 \\ 22y = 22 \\ \hline y = 1 \end{array}$$

Solving Equations

TERM 3



Curved shapes and Pyramids: Sectors, Cones & Spheres



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



Averages from Freq table. Grouped data & Averages

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

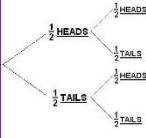
Similar Triangles: Show similar; find missing lengths

Area and Volume of Similar shapes

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

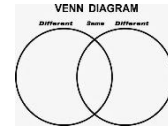
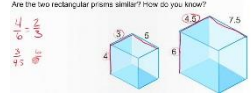
Powers: Rules of indices Standard Form: convert between SF and normal numbers

Probability: Combined events Tree diagrams Independent Events Conditional Probability.



TERM 5

Example A



TERM 6

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



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





TERM 1

Trial 1

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

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

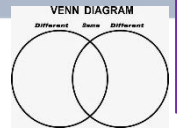
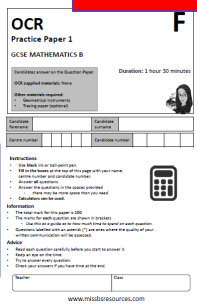
Foundation

TERM 2

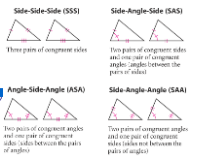
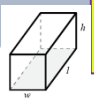
Constructions & Loci

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

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



Curved shapes and Pyramids: Sectors, Cones & Spheres



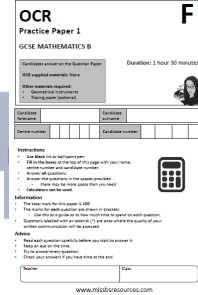
$(2.25 \times 10^3)(7.5 \times 10^6) = (2.25)(7.5) \times 10^{3+6} = 16.875 \times 10^{10} = 1.6875 \times 10^{11} = 1.7 \times 10^{11}$ (2 s.f.)

$$\begin{cases} -x + 5y = 8 \\ 3x + 7y = 2 \end{cases} \Rightarrow \begin{cases} -3x + 15y = 24 \\ 3x + 7y = 2 \end{cases}$$
$$\begin{array}{r} -3x + 15y = 24 \\ + 3x + 7y = 2 \\ \hline 22y = 22 \\ \hline y = 1 \end{array}$$
$$\begin{array}{l} -x + 5y = 24 \\ -x + 5(1) = 24 \\ -x + 5 = 24 \\ -x = 19 \\ x = -19 \end{array}$$

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

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

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



Trial 2

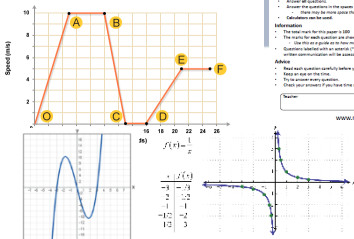
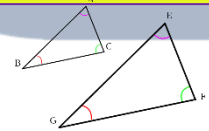
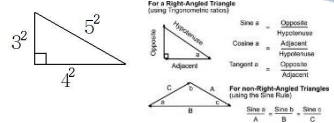
TERM 4

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

Congruent triangles & Similarity



TERM 3



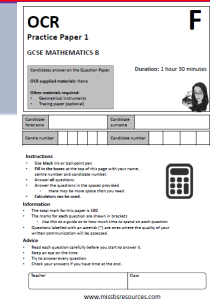
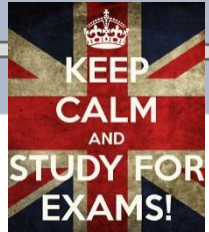
EXAMS

TERM 5



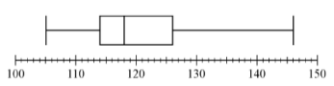
Revision: Practising exam skills Past Papers Maths Box Maths Watch GCSE Pod QLA

REVISION Review Trial 2 Resits



TERM 6



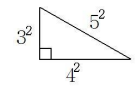


$x^2 + y^2 = 2$
 $y = -x + 2$
 back substitute:
 $y = -x + 2$
 $= -(1) + 2$
 $= 1$
 Solution $(1, 1)$

Substitution $x^2 + (-x+2)^2 = 2$
 $x^2 + x^2 - 4x + 4 = 2$
 $2x^2 - 4x + 2 = 0$
 $2(x^2 - 2x + 1) = 0$
 $2(x-1)(x-1) = 0$
 $2(x-1) = 0$ OR $x-1 = 0$
 $x = 1$



Trial 1



TERM 1



Sampling & Statistics:-
Sampling data

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

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

OCR
Practice Paper 1
GCSE MATHEMATICS B

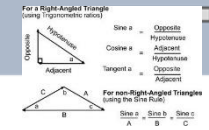
Duration: 1 hour 30 minutes

Other materials required:
- Non-calculator
- Ruler (30cm)

Information:
- The total mark for this paper is 100.
- The marks for each question are shown in brackets.
- Use the back of this page for rough work.
- Questions marked with an asterisk (*) are more difficult than the others.
- Questions marked with a triangle (Δ) are more difficult than the others.
- Read each question carefully before you start to answer it.
- Show all your working.
- Check your answers if you have time at the end.

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



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

Higher

TERM 2

Statistics:-
Frequency polygons
Cumulative Freq graphs
Box plots
Histograms

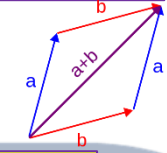


$\frac{\sin(A)}{a} = \frac{\sin(B)}{b} = \frac{\sin(C)}{c}$
 $\frac{a}{\sin(A)} = \frac{b}{\sin(B)} = \frac{c}{\sin(C)}$



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: $x_{n+1} = 2(x_n)^2 - 3$



Trial 2

OCR
Practice Paper 1
GCSE MATHEMATICS B

Duration: 1 hour 30 minutes

Other materials required:
- Non-calculator
- Ruler (30cm)

Information:
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- The marks for each question are shown in brackets.
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- Check your answers if you have time at the end.

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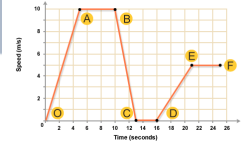
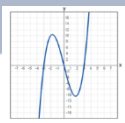
Circle theorems:
Cyclic quadrilaterals
Tangents & chords
Alternate segment
theorem

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

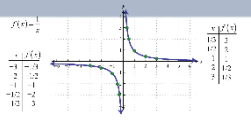
TERM 3

Variation:
Direct & Indirect
Proportion

$a^2 = b^2 + c^2 - 2bccos(A)$



Transformations of
the graph $y = f(x)$



Vector geometry:
Properties of
vectors.
Applications in
geometry

$y \propto x$
 $y = kx$

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

EXAMS



TERM 5



TERM 4

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

REVISION
Review Trial 2
Resits



TERM 6

Edexcel GCSE
Mathematics A
Paper 1 (Non-Calculator)
Higher Tier

Practice Paper 1
Time: 1 hour 45 minutes

Paper Reference
M15H/Edex/HT

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Traceable paper may be used.

Instructions:
- Use black ink on both pages.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Show all your working. Working space is provided.
- You may use a formula sheet that you need.
- Calculators must not be used.

Information:
- The total mark for this paper is 100.
- The marks for each question are shown in brackets.
- Use the back of this page for rough work.
- Questions marked with an asterisk (*) are more difficult than the others.
- Questions marked with a triangle (Δ) are more difficult than the others.
- Read each question carefully before you start to answer it.
- Show all your working.
- Check your answers if you have time at the end.

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