

HeyMath! E-Lessons Program (HELP)

GRADE 3				
NUMBER SENSE	GEOMETRY	MEASUREMENT	DATA ANALYSIS	
Game: Who wants to be a millionaire?	Introduction to fractions	Angles	Units of mass	Reading values from tables
Game: Odd and even number	Game: Equivalent fractions	Parallel lines	Units of length	Pictographs
Game: Number patterns	Simplifying fractions	Perpendicular lines	Volume	Reading bar-graphs
Addition of two numbers	Game: Simplifying fractions	Line symmetry	Customary units of capacity	Sample space
Subtraction of two numbers	Ordering fractions	Patterns	Telling time	
Multiplication tables of 6, 7, 8 and 9	Adding like fractions	Nets of a cube	Minutes and hours - Quiz	
Multiplying whole numbers	Adding related fractions	Nets of a rectangular prism	Duration of time	
Relating division to multiplication	Subtracting like fractions	Nets of a cylinder	Adding and subtracting time	
Dividing whole numbers	Subtracting related fractions	Plotting points using positive coordinates	Introduction to perimeter	
Game: Factors			Perimeter of a compound shape	
Rounding to the nearest 10 or 100			Area by counting squares	
			Area of a rectangle	
			Money	
			Money bag activity	
GRADE 4				
NUMBER SENSE	ALGEBRA	MEASUREMENT	DATA ANALYSIS	
Game: Who wants to be a millionaire?	Introduction to decimals	Introduction to algebra	Units of length	Reading bar graphs
Word problems on four operations	Addition and subtraction of decimals	Game: Introduction to algebra	Customary and metric units of area	Bar graphs
Multiplication by 1-digit number	Ordering decimals	GEOMETRY	Units of mass	Pictographs
Multiplication by 2-digit numbers	Rounding off - Decimals	Basics of geometry	Volume	Reading line graphs
Rounding to the nearest 10 or 100	Word problems on decimals	Naming and measuring angles	Metric units of capacity	Introduction to probability
Game: Approximation and estimation	Quiz: Decimals	Drawing parallel lines using a set square and	Customary units of capacity	Sample space
Introduction to fractions	Game: Rounding off (1)	Construction of angles	Area of a rectangle	
Game: Equivalent fractions	Game: Rounding off (2)	Patterns	Area of rectangular paths	
Simplifying fractions	Sieve of Eratosthenes	Line symmetry	Parts of a circle	
Game: Simplifying fractions	Prime factors	Nets of a cube	Parts of a circle - Illustrations	
Ordering fractions	Game: Primes pong	Nets of a rectangular prism	Line symmetry	
Adding like fractions	Factors	Nets of a cylinder	Rotational symmetry	
Adding related fractions	Game: Factors	Nets of a prism	24 hour clock	
Adding fractions	Multiples		Time in seconds	
Subtracting like fractions			Elapsed time	
Subtracting related fractions			Adding and subtracting time	
Subtracting fractions			Money	
			Perimeter of a compound shape	

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GRADE 5				
NUMBER SENSE		ALGEBRA		MEASUREMENT
Whole numbers	Fractions	Percentages	Basic Algebra	Units of measurement
Long multiplication	Introduction to fractions	Percentages, Fractions and Decimals	Introduction to algebra	Elapsed time
Long division	Fractions on a number line	Percentages - Word Problems	Writing algebraic expressions	Customary and metric units of length
Order of operations (PEMDAS)	Compare fractions and whole numbers	Working out percentages	Game: Introduction to algebra	Customary units of capacity
Who wants to be a millionaire?	Improper fractions and mixed numbers	Games	Solving Algebraic Equations	Metric units of capacity
Factors and Multiples	Ordering fractions	Game: Rescue the princess	Solving simple equations	Customary units of Mass
Sieve of Eratosthenes	Addition and subtraction of fractions	Game: Match the cards	Creating patterns	Perimeter and area
Prime factors of a number	Product of a fraction and a whole number	Game: Order the cards	Plotting points using positive coordinates	Area of rectangular paths
Greatest common factor (GCF/GCD)	Multiplication of two proper fractions	Estimation and Approximation	GEOMETRY	Area of triangle
GCF (GCD) - Division method	Multiplying a fraction and a whole number	Difference between decimal places and significant figures	Introduction to geometry	Conversion of units - Area
Lowest common multiple	Multiplication by a mixed number	Significant figures	Basics of geometry	Volume and surface area
Tests of Divisibility	Multiplication of fractions - Word problems	Upper bound and lower bound - 1	Naming and measuring angles	Volume and surface area of a cube and
Game: Primes pong	Division of fractions	Upper bound and lower bound - 2	Constructing angles	Conversion of units - Volume
	Fractions - Problem solving	Estimation - Worksheet	Angles on a straight line	STATISTICS AND PROBABILITY
	Games	Games - Rounding	Vertically opposite angles	Representation Of Data
	Game: Simplifying fractions	Game: Rounding off (1)	Types of triangles	Bar chart
	Game: Equivalent fractions	Game: Rounding off (2)	Properties of quadrilateral	Line graph
	Game: Reaching for the Gold	Ratios	Drawing triangles	Pictogram
	Decimals	Introduction to ratios		Reading pie charts
	Introduction to Decimals	Ratio model method		Average
	Addition and subtraction of decimals			
	Ordering Decimals			
GRADE 6				
NUMBER SENSE		GEOMETRY		MEASUREMENT
Factors and multiples	Decimals	Use of Calculator	Basic Geometry	Units of measurement
GCF (GCD)	Introduction to decimals	Use of calculator	Introduction to parallel lines	Elapsed time
Lowest common multiple	Addition and subtraction of decimals	Games - Logic	Constructing parallel lines	Customary units and metric units of length
Tests of Divisibility	Multiplication of decimals	Game: United nations	Drawing a perpendicular to a line	Customary units of Mass
Properties of divisibility	Division of decimals	Game: All the difference	Coordinate Plane	Customary units of capacity
Game: Primes pong	Ordering decimals	Game: Cups and saucers	Plotting points using positive coordinates	Metric units of capacity
Fractions	Rounding off - Decimals	ALGEBRA	Triangle Properties	Metric units of length and area
Introduction to fractions	Quiz: Decimals	Basic Algebra	Types of triangles	Customary units and metric units of Area
Fractions on number line	Percentages	Introduction to algebra	Sum of angles of a triangle	Perimeter and Area
Compare fractions and whole numbers	Percentages, fractions and decimals	Writing algebraic expressions	Quadrilateral Properties	Perimeter of compound shapes
Improper fractions and mixed numbers	Percentages - word problems	Algebraic terms	Introduction to quadrilaterals	Area of a parallelogram
Ordering fractions	Game: Percents	Commutative and associative law	Sum of angles of a quadrilateral	Area of a triangle
Addition and subtraction of fractions	Integers	Expansion - Distributive law		Area of a trapezoid
Multiplication of fractions	Practical uses of negative numbers	Use of parenthesis in simplification		Conversion of units - Area
Division of fractions	Absolute value of an integer	Evaluating algebraic expressions		STATISTICS AND PROBABILITY
Fractions - Problem solving	Adding and subtracting integers - 1	Algebra - word problems (Model Method)		Representation Of Data
Games	Adding and subtracting integers - 2	Solving Algebraic Equations		Pie-Chart (Circle Graphs)
Game: Simplifying fractions	Multiplication and division of integers	Solving simple equations		Dot diagram
Game: Equivalent fractions	Game: Adding integers	Plotting points in a coordinate plane		Stem and Leaf Plots
Game: Rescue the princess	Ratio	Plotting points using positive coordinates		Counting Principle
Game: Reaching for the Gold	Introduction to ratios	Plotting points in all quadrants		Pigeon - hole principle
	Dividing in a given ratio	Games		The basic counting principle
		Game: Simplifying algebraic expressions		

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GRADE 7				
NUMBER SENSE	ALGEBRA	GEOMETRY	MEASUREMENT	STATISTICS AND PROBABILITY
Integers	Solving Algebraic Equations	Basic Geometry	Area and Perimeter	Representation of Data
Practical uses of negative numbers	Solving equations - Balancing method	Pairs of angles	Area of a quadrilateral	Introduction to histograms
Absolute value of an integer	Algebra and formulae	Vertically opposite angles	Area of a kite	Histograms of Equal Width
Adding and subtracting integers - 1	Algebra - word problems	Linear pair axiom	Area of compound figures	Histograms of Unequal Width
Adding and subtracting integers - 2	Functions	Coordinate Plane	Circumference of a circle	Probability
Multiplication and division of integers	Define a function	Plotting points using positive coordinates	Area of a circle	Understanding of sample space
Game: Adding integers	Domain and range	Plotting points in all quadrants	Volume and Surface area	Introduction to probability
Proportion		Cartesian coordinates	Volume by counting cubes	Calculating probability
Proportion		Constructions	Volume of a prism and a cylinder	Sets
Variations		Constructing a perpendicular bisector using a	Total surface area of a prism	Introduction to sets
Direct variation		Constructing an angle bisector	Surface area of a cylinder	Set builder notation
Inverse variation		Constructing a triangle	Volume of a hollow cylinder	Drawing Venn diagrams
Joint variation		Constructing a rectangle	Volume of liquid in a cylinder	Problems using Venn diagrams
Percentages		Constructing special angles using compass	Converting units of Volume	Size of the intersection of 2 sets
Percentages, fractions and decimals		Exploring Circles		
Percentages - word problems		Parts of a circle		
Percentage increase and decrease		Parts of a circle - Illustrations		
Game: Percents		Tessellation		
Rational and irrational numbers		Tessellating shapes		
Definition of rational and irrational numbers		Tessellation in art - Symmetry, transformations and patterns		
Operations on rational numbers		Symmetry		
Rational and irrational numbers - Interactive		Line symmetry		
Scales and Maps		Rotational symmetry		
Scales on maps		Symmetry		
Arithmetic Problems		Planes of symmetry		
Average rate		Rotational symmetry of solids		
Time and distance		Symmetry - quiz		
Time and work		Nets of solids		
Relative speed		Nets of a cube		
Profit and loss		Nets of a rectangular prism		
Discount and commission		Nets of a prism		
Simple interest		Nets of a pyramid		
Compound interest		Nets of a cylinder		
Hire purchase		Nets of a tetrahedron		
Taxation		Congruence		
Money Exchange		Congruent figures		
Money exchange				
Use of Calculator				
Use of calculator				

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GRADE 8				
NUMBER SENSE	ALGEBRA	GEOMETRY	MEASUREMENT	STATISTICS AND PROBABILITY
Scientific Notation	Solving Algebraic Equations	Angles and Lines	Volume and Surface Area of Prism and Pyramid	Representation Of Data
Scientific Notation	Linear equations involving algebraic fractions	Angles in parallel lines	Prisms and pyramids	Presentation of data
Ratio	Simultaneous Linear Equations	Angles in parallel lines (FUZ Angles)	Volume of a pyramid	Types of data
Increasing and Decreasing in a given ratio	Solving simultaneous linear equations graphically	Triangle Properties	Volume of a square pyramid	Box and whisker diagram
Proportion	Simultaneous linear equations	Angle Properties of a Triangle	Total surface area of a pyramid	Cumulative Frequency
Direct Proportion	Simultaneous linear equations - word problems	Quadrilateral Properties	Volume and surface areas of a right triangular prism	Cumulative Frequency - Worksheet
Inverse Proportion	Graphs	Properties of Quadrilaterals	Triangular based pyramids - volume and surface area	Cumulative Frequency
Percents	Graphical solution of quadratic equations	Diagonal properties	Volume and Surface Area of Cone	Mean, Median and Mode
Discount and Commission	Cubic graph	Angle Properties of Polygons	Volume of cone	Mean, median and mode
Profit and Loss	Introduction to quadratics	Interior and Exterior Angles of a Polygon	Curved surface area of a cone	Properties of mean, median and mode
Exponents	Plotting quadratic graphs	Constructions	Total surface area of cone	Median activity
Laws of exponents	Distance - Time graphs	Constructing Quadrilaterals	Volume and Surface Area of Sphere	Different measures of average
Zero, negative exponents and radicals	Inequalities	Constructing a Rhombus	Surface area of a sphere	Mean and modal class from frequency table
Problem solving using exponents	Operations on inequality	Construction Examples (Polygons)	Volume of a sphere	Assumed mean
Laws of exponents - problems	Solving inequalities	Construction Examples (Lines and Angles)		Mean
Using exponents	Graphing inequalities in two variables	Congruence and Similarity		Median and mode
Exponents	Equation of a Straight Line and Linear Models	Congruence		Range
Rational and Irrational Numbers	Introduction to slope	Similarity		Probability
Categorizing Numbers	Types of slope	Area and Volume of Similar Figures		Addition and multiplication of probabilities
Rational and Irrational Numbers-Interactive	Formula for slope	Pythagorean Theorem		Probability without replacement
Squares, Square roots, Cubes and Cube roots	Conversion graphs	Pythagorean Theorem - Demo		Calculating probabilities of combined events using tree diagram
Squares and square roots	Travel graphs	Pythagorean Theorem - Proof		Calculating probabilities of combined events using possibility diagrams
Cubes and cube roots	Polynomials and Rational Expressions	Coordinate Geometry		
Use of Calculator	Introduction to polynomials	Length of a line segment		
Use of calculator	LCM of algebraic terms	Midpoint of a line segment		
Number Patterns	GCF (GCD) of algebraic terms	Plotting points in all four quadrants		
Sum of natural numbers	Solving linear equations and its Applications (Singapore)	Plotting straight lines		
Fibonacci sequence	Speed - Time graphs - Introduction	Geometrical Transformations		
Triangular numbers	Speed - Time graphs (2)	Reflection		
Gauss Law - Summing integers		Rotation - worksheet		
Algebra and formulae		Reflection - worksheet		
Number patterns		Applications of transformation - Rotation and Translation		
Pascal's triangle		Rotation		

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PRE - ALGEBRA				
Integers	Rounding off - game 2	Solving Equations and Inequalities	Two-Dimensional Geometry	Areas and Volumes
Practical uses of negative numbers	Ratio, Proportion and Percentage	Solving simple Equations	Basics of Geometry	Area of a Rectangle
Adding and subtracting integers - 1	Introduction to Ratios	Solving Equations - Balancing Method	Pairs of Angles	Area of a Triangle
Adding and subtracting integers - 2	Ratios - Examples	Algebraic Equations with Fractions and	Vertically Opposite Angles	Area of a Parallelogram
Multiplication and division of integers	Scales on Maps	Operations on Inequality	Linear Pair Axiom	Area of a Trapezoid
Absolute value of an integer	Proportion	Solving Inequalities	Introduction to Parallel Lines	Area of Compound Figures
Integers - Games	Direct Proportion	Solving Inequalities graphically	FUZ angles	Area of a Quadrilateral
Integers - Game	Inverse Proportion	Coordinate Plane	Types of Triangles	Total Surface Area of a Prism
Factors and Fractions	Percentages, Fractions and Decimals	Cartesian coordinates	Sum of angles of a Triangle	Total Surface Area of a Pyramid
Sieve of Eratosthenes	Percentage increase and decrease	Plotting straight lines	Introduction to Quadrilaterals	Total Surface Area of Cone
Prime factors of a Number	Percentages - word problems	Equation of a Straight Line: Slope-Intercept Formula(1)	Properties of Quadrilaterals	Surface area of a Sphere
Greatest Common Factor (GCF/GCD)	Discount and Commission	Equation of a Straight Line: Slope-Intercept Formula(2)	Congruence	Volume and Surface Area of a Cube and Cuboid
Lowest Common Multiple	Profit and Loss	Equation of a Straight Line: Slope-Point Formula	Transformations	Volume of a Cuboid
Tests of Divisibility	Ratio, Proportion and Percentage - Games	Plotting points in all quadrants	Translation	Volume by Counting Cubes
Properties of Divisibility	Percentages - fun and games	Length of a line joining two points	Reflection	Volume of a Prism and a Cylinder
Introduction to Fractions	Rescue the Princess	Midpoint of a line joining two points	Line symmetry	Volume of a Square Pyramid
Ordering fractions	Rational and irrational numbers	Exponents	Rotation	Volume of a Pyramid
Improper fractions and mixed numbers	Categorizing numbers	Standard form	Reflection - worksheet	Volume of Cone
Addition and subtraction of fractions	Introduction to Rational Numbers	Introduction to Exponents	Rotation - worksheet	Volume of a Sphere
Multiplication of fractions	Definition of Rational and Irrational numbers	Laws of Exponents	Right Triangles and Algebra	Volume and Surface Areas of a Right Triangular Prism
Division of fractions	Rational and Irrational numbers - Interactive	Zero, Negative Exponents and Radicals	Pythagoras Theorem - demo	Areas - Games
Fractions - Games	Squares and Square-Roots	Exponential graphs	Pythagoras Theorem	Alpha Beta Game
Game - Fractions in Simplest Form	Algebraic Expressions	Polynomials and Non-Linear functions	Trig ratios of Special Angles	Data Analysis and Probability
Game - Equivalent Fractions	Introduction to Algebra	Introduction to Quadratics	Introduction to Trigonometric Ratios	Mean
Decimals	Writing Algebraic Expressions	Introduction to Polynomials	Angle of Elevation	Median and Mode
Introduction to decimals	Evaluating Algebraic Expressions	Adding and Subtracting Polynomials	Angle of Elevation - Interactive	Range
Ordering decimals	Commutative and Associative laws	Multiplying Polynomials	Angle of Depression	Dot diagram
Addition and Subtraction of decimals	Expansion - Distributive law	Dividing Polynomials	Angle of Depression - Interactive	Pictogram
Multiplication of decimals	Order of Operations			Stem and Leaf diagram
Division of decimals	Use of parenthesis in simplification			Box and Whisker diagram
Difference between decimal places and Significant figures	Algebraic terms			Histograms of Equal width
Upper bound and lower bound - 1	Algebra - Games			Histogram and Frequency polygon
Upper bound and lower bound - 2	Game - Introduction to Algebra			Introduction to Permutations
Rounding off decimals	Simplification Game			Introduction to Combinations
Decimals - Games				Introduction to Probability
Who wants to be a millionaire?				Calculating Probability
Rounding off - game 1				

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GRADES 9-12: ALGEBRA I				
Variable Expressions and Operations	Graphing a Line	Scatter Plots and Line of Best Fit (Extension*)	Quadratics	Piecewise Linear Functions (Extension*)
Introduction to algebra	Graphing straight lines - By making a table	Scatter plots	Introduction to quadratic functions	Introduction to piecewise linear functions
Algebraic terms	Horizontal and vertical lines	Linear Regression Introduction - Sea Level Rise	Factorising quadratics	Graphing piecewise linear functions
Evaluating algebraic expressions	Graphing straight lines - Using x and y intercepts	Independent and dependent variables	Solving quadratics by factorisation	Writing the equation of piecewise linear functions
Introduction to exponents	Introduction to slope	Correlation	Quadratic formula	Applications of piecewise linear functions - Skateboarding
Order of operations (PEMDAS)	Types of slope	Line of best fit	Completing the square	Applications of piecewise linear functions - Swimming
Writing algebraic expressions	Formula for slope	Linear Regression - World Population	Quadratic - word problems	Absolute Value Functions (Extension*)
Expansion - Distributive property	Rate of change	Linear Regression - Swimming World Records	Discriminant - activity	Absolute value of an integer
Add and Subtract Real Numbers	Story graphs	Functions	Nature of roots of a quadratic equation	Absolute value equations
Adding and subtracting integers - 1	Slope-intercept form	Relations	Quadratic expressions and equations - Game - Quadratics	Absolute value inequalities
Adding and subtracting integers - 2	Vertical translations of linear graphs	Introduction to functions		Real life examples of absolute value inequalities
Game - adding integers	Point-slope form	Test for functions	Exponents	Introduction to absolute value functions
Addition and subtraction of fractions	Slopes of parallel lines	Finding domain and range	Introduction to exponents	Graphing absolute value
Addition and subtraction of decimals	Quiz on slope and parallel lines	Systems of Linear Equations	Laws of exponents	Writing the equation of absolute value graphs
Multiply and Divide Real Numbers	Slopes of perpendicular lines	Introduction to systems of linear equations	Zero, negative exponents and radicals	Real life examples of absolute value equations
Multiplication and division of integers	Coordinate plane and plotting points	Solve system of linear equations by graphing	Radicals	Absolute Value on the Move
Multiplication of fractions	Plotting points using positive coordinates	Substitution method	Laws of exponents - problems	Translation of absolute value graphs
Division of fractions	Plotting points in all quadrants	Linear Combination method	Problem solving using exponents	Wider, narrower and reflected absolute value graphs
Multiplication of decimals	Graphing basic shapes - Activity	Special cases of linear systems	Solving exponential equations	Mathematical Reasoning (Extension*)
Division of decimals	Writing the Equation of a Line	Linear systems - word problems	Exponential graphs	Mathematical Reasoning 1
Operations on rational numbers	Write linear equations in slope-intercept form	Linear Inequalities in Two Variables	Using exponents	Mathematical Reasoning 2
Solving Linear Equations	Write equations given the slope and a point	Inequalities in two variables	Graphs of exponential functions	
Solving simple equations	Write linear equations given two points	Systems of linear inequalities	Polynomials	
Solving equations - Balancing method	Write linear equations in point-slope form	Systems of linear inequalities - Activities	Introduction to polynomials	
Algebraic equations with fractions and	Write linear equations in standard form		Factorizing polynomials	
Algebra - word problems (Model Method)	Linear equations in the real world		Greatest common factor (GCF /GCD) of	
Algebra - word problems			Least common multiple of algebraic	
Linear Inequalities			GCF (GCD) of polynomials	
Introduction to inequalities			LCM of polynomials	
Solving one-step inequalities			Adding and subtracting polynomials	
Solving multi-step inequalities			Multiplying polynomials	
Compound inequalities			Dividing polynomials	
Extension* - These topics can be covered only if time permits				

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GRADES 9-12: GEOMETRY				
Introduction to geometry	Pythagorean Theorem	Tangents to a Circle	Triangular based pyramids - volume and	Vectors
Basics of geometry	Pythagorean theorem - demo	Tangents to a circle	Cone	Introduction to vectors
Naming and measuring angles	Pythagorean theorem - proof	Tangents from an external point	Volume of cone	Vectors and column vectors
Constructing angles	Congruence and Similarity	Alternate segment theorem	Curved surface area of a cone	Adding and subtracting vectors
Basic Angle Properties	Congruent figures	Constructions	Total surface area of cone	Parallel vectors
Pairs of angles	Congruence	Constructing tangents to a circle	Sphere	Vectors in terms of two non-parallel vectors
Vertically opposite angles	Similarity	Constructing incircle and circumcircle	Surface area of a sphere	Position vectors
Linear pair axiom	Area and volume of similar figures	Constructions - harder examples	Volume of a sphere	Collinear vectors
Parallel and Perpendicular Lines	Area and Perimeter	Equation of Circle	Tessellations	Unit vectors
Introduction to parallel lines	Perimeter of simple figures	Equation of a circle	Tessellating shapes	Ratio theorem
Constructing parallel lines	Perimeter of compound shapes	Theorems	Tessellation in art - Symmetry, transformations and patterns	Vectors - Worked examples
Drawing a perpendicular to a line	Area by counting squares	Areas	Symmetry	Loci
Angles in parallel lines	Area of a rectangle	Parallelograms - Theorem	Line symmetry	Introduction to locus
Triangle Properties	Area of rectangular paths	Intercept theorem	Rotational symmetry	Equidistant from a point
Types of triangles	Area of a triangle	Midpoint theorem	Symmetry	Equidistant from a line
Sum of angles of a triangle	Area of a parallelogram	Basic proportionality theorem	Planes of symmetry	Equidistant from a line segment
Angle properties of a triangle	Area of a trapezoid	Nets of Solids	Rotational symmetry of solids	Equidistant from two points
Triangle Inequalities	Area of a quadrilateral	Nets of a cube	Symmetry - quiz	Equidistant from two lines
Triangle inequalities - examples	Area of a kite	Nets of a rectangular prism	Transformations	Locus, given area of a triangle
Sides and angles of a triangle	Area of compound figures	Nets of a tetrahedron	Geometrical Transformations	Orbits and Locus
Sum of any two sides of a triangle	Conversion of units - Area	Nets of a prism	Translation	Circles and Locus - examples
Quadrilaterals	Area - Enrichment	Nets of a pyramid	Rotation	
Introduction to quadrilaterals	Area of a triangle given the three vertices	Nets of a cylinder	Reflection	
Sum of angles of a quadrilateral	Shoe lace algorithm	Nets of a cone	Enlargement	
Properties of quadrilaterals	Circles	Three Dimensional Geometry	Centre of enlargement	
Diagonal properties	Exploring Circles	Plan and elevations	Rotation - worksheet	
Properties of a parallelogram	Parts of a circle	Prisms and pyramids	Reflection - worksheet	
Geoboard	Parts of a circle - Illustrations	Activity - prisms and pyramids	Enlargement - Worksheet	
Angle Properties of Polygons	Circumference and Area	Tetrahedron, Octahedron and Euler's formula	Applications of transformation - Rotation and	
Interior and exterior angles of a polygon	Circumference of a circle	Volume and surface area	Further Geometrical Transformations	
Constructions	Area of a circle	Cube and Cuboid	Stretch and stretch factor	
Constructing a perpendicular bisector using a	Arc Length and Area of a Sector	Volume and surface area of a cube and	Shear	
Constructing an angle bisector	Length of an arc	Conversion of units - Volume	Shear factor	
Constructing a triangle	Area of a sector	Prism and Cylinder	More shear and stretch	
Constructing a rectangle	Area of a segment	Volume of a prism and a cylinder	Transformations - Worksheet	
Constructing special angles using compass	Chord Properties of a Circle	Total surface area of a prism	Identify the type of Transformation	
Construction examples (lines and angles)	Equal chords are equidistant from the centre	Surface area of a cylinder	Transforming Graphs	
Constructing quadrilaterals	Perpendicular bisecting chord	Volume of a hollow cylinder	Vertical translation	
Constructing a rhombus	Angle Properties of a Circle	Volume of liquid in a cylinder	Horizontal stretch	
Construction examples (polygons)	Angle at the centre = 2 x angle at the	Volume and surface areas of a right triangular	Vertical stretch	
Concurrent Lines	Cyclic quadrilaterals	Pyramids	Horizontal translation	
Concurrent lines		Volume of a square pyramid	Translation of quadratic graphs - Quiz	
		Volume of a pyramid		
		Total surface area of a pyramid		

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GRADES 9-12: ALGEBRA II				
Radicals	Slope and Equation of Straight Lines	Sequence and Series	Conic Sections	Elevation and Depression
Radicals	Equation of a Straight Line:Slope-Intercept Formula(1)	Arithmetic progressions	The Circle	Angle of elevation
Variations	Equation of a Straight Line:Slope-Intercept Formula(2)	Introduction to geometric sequences	The Parabola	Angle of elevation - interactive
Direct variation	Introduction to slope	Graphing arithmetic and geometric sequences	The Ellipse	Angle of depression
Inverse variation	Types of slope	Binomial Theorem	Probability	Angle of depression - interactive
Joint variation	Formula for slope	Binomial expansion	Calculating probabilities of combined events	More Trigonometry
Rational Expressions	Slope of parallel lines	Expanding product of 2 terms	Addition and multiplication of probabilities	Sine rule
Rational expressions	Slope of perpendicular lines	Finding a specific term	Probability without replacement	Cosine rule
Coordinate Geometry	Equation of a perpendicular bisector	Introduction to Functions	Calculating probabilities of combined events using tree diagram	Area of a triangle
Cartesian Coordinates	Applications of Coordinate Geometry	Define a function	Probability - Worksheet	Three dimensional problems
Plotting straight lines	Collinear points	Domain and range	Probability - Revision	Simple three dimensional problems
Length of a line segment	Types of quadrilaterals - proofs	Absolute valued functions	Permutations and Combinations	Introduction to bearings
Midpoint of a line segment	Shoelace algorithm	Absolute valued functions - worked examples	Introduction to permutations	Bearings - examples
Quadratics	Ratio theorem	Transforming graphs	Introduction to combinations	Angle of slope
Factorising quadratics	Coordinate geometry - worksheet	Composite and Inverse Functions	Permutations with restrictions	Trigonometric Functions
Solving quadratics by factorisation	Simultaneous Linear Equations	Composite functions	Combinations with restrictions	Transformations of sine curve
Quadratic formula	Simultaneous linear equations	Inverse functions	Combinations and Routes - Activity	Graphs of trigonometrical functions
Completing the square	Solving simultaneous linear equations graphically	Graph of inverse functions	Variance and standard deviation	Trigonometrical curves in radians
Quadratic - word problems	Simultaneous linear equations - word problems	Inverse of a composite function	Variance and standard deviation	Solving trig equations using graphs
Discriminant - activity	Intersection of a line and a curve	Function factory	Linear Programming	Period and Amplitude of Trigonometric Functions
Nature of roots of a quadratic equation	Solving System of Equations	Functions - Examples	Linear programming	Period and Amplitude of Trigonometric Functions-Worksheet
Quadratic expressions and equations - problems	Solving system of equations	Linear Law	Introduction to Trigonometry	Radian Measure
Game - Quadratics	Logarithms	Introduction to linear law	Introduction to basic angles	Length of an arc - Radian measure
Quadratic Graphs	Introduction to logarithms	Interactive worksheet - Identify the rock	Secant, cosecant and cotangent	Area of sector - Radian measure
Introduction to quadratics	Laws of logarithms	Applications of linear law	Trig ratios of an obtuse angle	Complex Numbers
Plotting quadratic graphs	Logarithm - Examples	Graphical Solution of Equations	Trig ratios of special angles	Introduction to complex numbers
Turning points of a curve	Solving logarithmic equations	Solving quadratics	Trig ratios of complementary angles	Polar coordinates
Turning points and completing the square	Matrices	Cubic graph	Introduction to trigonometric ratios	Polar form of a complex number
Line symmetry of quadratics	Introduction to matrices	Reciprocal graphs	CAST	De Moivre's Theorem - Activity
Quadratic Coefficients	Addition, subtraction and scalar multiplication of matrices	Graphs you need	Trigonometric identities	
Graphical solution of quadratic equations	Product of matrices	Graphs of logarithmic functions	Construct angle given trig ratios	
Solving quadratic inequality	Inverse of a 2x2 matrix	Graphs of exponential functions		
	Solving simultaneous equations using matrices			

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GRADES 9-12: TRIGONOMETRY and CALCULUS				
TRIGONOMETRY		CALCULUS		
Introduction to basic angles	Sine rule	Introduction to Functions	Rates of Change	Applications of Calculus
Secant, cosecant and cotangent	Cosine rule	Define a function	Constant rate and variable rate of change	Displacement
Trig ratios of an obtuse angle	Period and amplitude of trig functions	Domain and range	Related rates of change	Velocity and acceleration
Trig ratios of special angles	Period and amplitude - worksheet	Absolute valued functions	Small changes	Equations of motion with constant acceleration
Trig ratios of complementary angles	Angle of elevation	Absolute valued functions - worked examples	Small changes and percentage changes -	Vertical motion under gravity
CAST	Angle of elevation - interactive	Transforming graphs	Higher Derivatives and Applications	Calculus and kinematics
Trigonometric identities	Angle of depression	Composite and Inverse Functions	Stationary points	Velocity time graph - Worksheet
Graphs of trig functions	Angle of depression - interactive	Composite functions	Higher derivatives	Kinematics and Graphs - Activities
Transformations of a sine curve	Area of triangle	Inverse functions	First derivative test	Relative Velocity
Conversion between degrees and radians	Polar form of complex numbers	Graph of inverse functions	Second derivative test	Introduction to relative velocity
Trigonometrical curves in radians	De Moivre's Theorem - Activity	Inverse of a composite function	Problems on maxima and minima	Relative motion in current
		Function factory	Maxima and Minima - Activity	Relative motion in air
		Functions - Examples	Differentiation of Other Functions	Relative velocity - non horizontal motion
		Remainder And Factor Theorem	Differentiation of exponential functions	Relative velocity - vector method
		Remainder theorem	Differentiation of logarithmic functions	Unit vectors and relative velocity
		Factor theorem	Graphs of logarithmic functions	
		Polynomial identities	Graphs of exponential functions	
		Solving cubics	Differentiation of trigonometric functions	
		Differentiation	Integration	
		Limits	Indefinite integrals	
		Introduction to differentiation	Definite integrals	
		Differentiation from first principles	Integration of exponential functions	
		Chain rule	Integration of trigonometric functions	
		Product rule	Applications of Integration	
		Quotient rule	Area as a sum of strips	
		Slope of a Curve at a Point	Integration and area	
		Equations of tangent and normal	Area between a curve and the y-axis	
		Differentiation - Simple Examples	Area between two curves	