PRIME FACTORS			
Learning Objective			
Find the LCM of two numbers			
Find the HCF of two numbers			
Write a number as a product of prime factors			
Find the LCM of two or more numbers			
Find the HCF of two or more numbers			
SEQUENCES			
Learning Objective			
Write the terms of a sequence or a series of diagrams given the nth term			
Write the nth term of a linear sequence or a series of diagrams			
FRACTIONS AND DECIMALS			
Learning Objective			
Multiply and divide decimals			
Add and subtract fractions and decimals			
Divide a quantity in a given ratio			
Solve simple ratio and proportion problems			
Find one quantity as a fraction of another			
Solve problems involving fractions			
Divide a number by a decimal			
Recognise that recurring decimals are exact fractions and that some exact fractions are recurring decimals			
Add and subtract mixed numbers			
Multiply and divide fractions mixed numbers			
Find the reciprocal of a number			
Convert fractions to decimals			
Solve ratio and proportion problems using the unitary method			
Recognise that recurring decimals are exact fractions			
Understand the effect of multiplying and dividing by numbers between 0 and 1			
Convert recurring decimals to fractions			
SURDS			
Learning Objective			
Rationalise the denominator of a surd			
Simplify surds			
WORKING WITH SYMBOLS			
Learning Objective			
Expand simple brackets			
Factorise a simple expression			
Expand and simplify an expression			
Expand and simplify two brackets			
Simplify fractions with brackets			
COORDINATES			
Learning Objective			
Find the coordinates of the midpoint of a line or segment			
EQUATIONS AND INEQUALITIES			
Learning Objective			
Solve more complicated equations			
Represent and interpret inequalities on a number line			
Solve a harder equation			
Solve an inequality			

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Learning Objective			
Find the integer solutions of an inequality			
Solve equations with fractions			
Solve harder inequalities			
Represent linear inequalities in two variables as a region on a graph			
PERCENTAGES			
Learning Objective			
Increase or decrease by a given %			
Express one quantity as a % of another			
Work out a % increase or decrease			
Understand how to use successive percentages			
Work out reverse percentage problems			
GRAPHS OF LINEAR FUNCTIONS			
Learning Objective			
Solve problems such as where two linear lines cross			
Find the gradient of straight line graphs			
Find the midpoint of a line segment			
Find the gradient and equation of a line through two points			
Find the equation of line parallel to another line			
FORMULAE			
Learning Objective			
Substitute numbers into formulae			
Derive complex expressions and formulae			
Distinguish between an expression, equation and formula			
Rearrange linear formulae			
Rearrange formulae involving brackets, indices, fractions and square roots			
Rearrange formulae where the variable appears twice			
REAL LIFE GRAPHS			
Learning Objective			
Interpret real life graphs			
Find simple average speed from d/t graphs			
Recognise from a d/t graph when the fastest average speed is taking place			
Find the average speed from a distance/time graph in minutes			
Discuss and interpret graphs modelling real situations			
QUADRATIC EQUATIONS AND ALGEBRAIC PROOF			
Learning Objective			
Solve a problem using step by step instructions			
Factorise an expression with squared unknowns			
Solve an equation with squared unknowns			
Factorise a harder expression			
Simplify an expression with fractions			
Solve a harder equation using factorising			
Derive a proof using reasoning and logic			
Solve an equation with unknowns in the denominator			
Solve an equation by completing the square			
SIMULTANEOUS EQUATIONS			
Learning Objective			
Solve a pair of simultaneous equations			
Solve a pair of harder simultaneous equations			
COLLECTING DATA			
Learning Objective			
Understand and name different types of data			
Design and use data collection sheets, surveys and questionnaires			
Design and use two way tables for discrete and grouped data			
Understand and name other types of data collection methods			

Identify possible sources of bias			
Understand the data handling cycle			
Understand that increasing sample size generally leads to better estimates			
Select and justify a sampling scheme			
Use sampling methods such as random and stratified sampling			
STATISTICAL MEASURES			
Learning Objective			
Calculate the mean for a frequency distribution			
Find the modal class for grouped data			
Find the mean for grouped data			
Find the median class for grouped data			
Find the upper and lower quartiles and find the IQ range			
REPRESENTING DATA			
Learning Objective			
Construct an ordered stem and leaf diagram			
Construct a histogram for data with equal class intervals			
Interpret a line graph			
Construct a frequency polygon			
Construct and interpret a cumulative frequency diagram for continuous or grouped data			
Use a CFD to estimate median and IQ range			
Construct and interpret a box plot			
Compare two sets of data using a box plot			
Construct a histogram with unequal class intervals			
Interpret a histogram with unequal class intervals			
SCATTER GRAPHS			
Learning Objective			
Draw a scatter graph by plotting points			
Interpret the scatter graph			
Draw a line of best fit on the scatter graph			
Interpret the line of best fit			
Identify the type and strength of the correlation			
PROBABILITY			
Learning Objective			
Use a two way table to find a probability			
Understand mutually exclusive events			
Identify all mutually exclusive events and show equal to 1			
Use probability to estimate outcomes for a population			
Understand and use relative frequency			
Draw tree diagrams			
Understand independent and non-independent events			
Find probabilities of successive independent events			
Find probabilities of successive dependent events			
ANGLES AND AREAS			
Learning Objective			
Recognise corresponding, alternate and interior angles in parallel lines			
Understand and use three figure bearings			
Find the area of a triangle, trapezium and parallelogram			
Calculate the area and circumference of a circle			
Work out the area and perimeter of a semi-circle and compound shapes			
PROPERTIES OF POLYGONS			
Learning Objective			
Classify a quadrilateral using geometric properties			
Calculate exterior and interior angles of a regular polygon			

REFLECTION, ROTATION AND TRANSLATION			
Learning Objective			
Reflect shapes in lines parallel to the axes			
Rotate shapes about the origin			
Describe fully reflections in a line and rotations about the origin			
Translate a shape using a description (up, down, left, right)			
Reflect shapes in lines x=y , x=-y			
Rotate shapes about any point			
Describe fully any reflections in lines parallel to axes and rotations about any point			
Find the centre of a rotation and describe it fully			
Translate a shape by a vector			
Use congruence to show t, r, r preserve length and angle			
AREA AND VOLUME 1			
Learning Objective			
Convert between square units			
Convert between cube units			
Find the volume of prisms including cylinders			
Find the surface area of prisms			
MEASURES			
Learning Objective			
Calculate average speeds			
Use compound measures			
Recognise that rounding can cause units to be out up to 0.5 units			
Use compound measures such as density			
TRIAL AND IMPROVEMENT			
Learning Objective			
Solve equations using systematic trial and improvement			
ENLARGEMENTS			
Learning Objective			
Enlarge a shape by a positive amount from a given centre			
Compare area of enlarged shape with original			
Find the ratio of corresponding sides in similar shapes, scale factor			
Using ratios in similar shapes to find missing sides			
Enlarge a shape by a fractional scale factor			
Enlarge a shape by a negative scale factor			
Compare lengths, volume and area of enlarged shapes			
Use the effect of enlargement on perimeter, area and volume calculations			
CONSTRUCTION			
Learning Objective			
Draw a quadrilateral			
Understand ssa may not give a unique triangle			
Construct perpendicular bisectors and angle bisectors			
Match one angle and one side of congruent triangles			
Construct perpendicular lines from point to point			
Match sides and angles of similar triangles			
Prove two triangles are congruent			
Prove construction theorems			
LOCI			
Learning Objective			
Understand the idea of a locus			
Construct the locus of two points equidistant from two fixed points			
Construct the locus of points equidistant from two fixed lines			
Solve loci problems			

3D SHAPES COORDINATES AND GRAPHS			
Learning Objective			
Draw the elevations of a solid on squared paper			
Make simple interpretations of real life graphs			
Further interpret real life graphs			
Use 3D coordinates			
Discuss and interpret graphs modelling real situations			
PROPERTIES OF CIRCLES			
Learning Objective			
Know the angle and tangent properties of circles			
Understand the angle and tangent properties of a circle			
Understand the alternate segment theorem			
TRIGONOMETRY 1			
Learning Objective			
Use sine, cosine and tangent to calculate a side in a right angled triangle			
Use sine, cosine and tangent to calculate an angle in a right angled triangle			
Use trigonometry to solve problems			
Use trigonometry to find sides and angles in three dimensions			
VECTORS			
Learning Objective			
Add, subtract and multiply vectors			
Use vectors to solve simple geometric problems			
Understand the relationship between parallel vectors			
Solve more difficult geometric problems			
CUBIC, CIRCULAR AND EXPONENTIAL FUNCTIONS			
Learning Objective			
Complete tables and draw graphs of cubic functions			
Complete tables and draw graphs of reciprocal functions			
Sketch and draw circular graphs			
Use graphs to solve problems			
Sketch and draw graphs of exponential functions			
Understand the graphs of circular functions			
Use symmetry of circular functions to solve equations			
Recognise the shapes of graphs of functions			
Recognise functions when solving problems			
TRIGONOMETRY 2			
Learning Objective			
Use the sine and cosine rules to solve 2D problems			
Calculate the area of a triangle using ½ absinc			
Use the sine and cosine rules to solve 3D problems			
TRANSFORMING FUNCTIONS			
Learning Objective			
Understand and apply function notation			
Given y=f(x) draw transformations of y=f(x)			
Understand stretch with a scale factor of a			
Understand y=f(x) +a and y=f(x-a) represent translations of y=f(x)			
PYTHAGORAS' THEOREM			
Learning Objective			
Use Pythagoras' theorem to find the 3rd side of a right angled triangle			
Use the theorem to prove a triangle in right angled			
Find the distance between two points from their coordinates			
Use Pythagoras' theorem in 3-D problems			