

GCSE Maths Revision Checklist - Foundation

Unit	Unit / Topic	Complete
1	Integers and place value Types of number Use and order positive and negative numbers Use inequality symbols Four operations using positive and negative numbers Round numbers to nearest 10, 100, 1000 and use rounding for estimation	
	Decimals Use decimals and place value Compare and order decimal numbers Four operations using decimal numbers Round to nearest whole number, decimal place & significant figures Use one calculation to check another	
	Indices, powers and roots Find squares and cubes Use index notation including negative powers Use laws of indices to multiply and divide numbers in index form Order of operations including powers and brackets Use of calculator	
	Factors, multiples and primes Identify factors, multiples and prime numbers Find prime factorisation of a number (& write in index form) Find common factors & highest common factor Find LCM of two (or three) numbers	
2	Algebra: the basics Write an expression Collect like terms Simplify expressions Use index laws	
	Expanding and factorising single brackets Expand single brackets Simplify expressions using squares and cubes Factorise expressions	
	Expressions and substitution into formulae Substitute into expressions involving brackets & powers Substitute into a formula (& word formula)	
3	Tables Sort and classify data (inc tally charts) Extract data from lists and tables (inc timetables) Identify mode from a list / table	
	Charts and graphs Know which chart or diagram to use for different data sets Draw and interpret bar charts (inc dual & composite) Draw and interpret line graphs (vertical & time-series) Draw and interpret frequency polygons Draw and interpret pictograms Draw and interpret stem and leaf diagrams	
	Pie charts Draw and use pie charts Find mode & total frequency from a pie chart Compare two pie charts	
	Scatter graphs Draw and use scatter graphs & lines of best fit Identify outliers & correlation	

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4	Fractions Equivalent fractions including simplifying & comparing Express one amount as a fraction of another Convert between mixed numbers and improper fractions Four operations using fractions Find a fraction of an amount	
	Fractions, decimals and percentages Use fraction to decimal conversions Recognise terminating & recurring decimals	
	Percentages Convert between fractions, decimals & percentages Order & compare fractions, decimals & percentages Write one amount as a percentage of another Calculate percentage of an amount Calculate percentage increase/decrease Use decimals to find quantities (multiplier methods) Increase / decrease an amount by a percentage	
5	Equations Use function machines Solve equations (inc brackets and unknowns on both sides) Rearrange simple equations Set up & solve equations to solve problems	
	Inequalities On a number line Listing numbers that satisfy an inequality Solving inequalities and show the solution on a number line Error intervals due to rounding & truncation	
	Sequences Continue sequences inc from pictures Find the nth term Use nth term rule to generate or continue a sequence	
6	Properties of shapes, parallel lines and angle facts Measure and draw lines, angles, 2D & 3D shapes Identify and name 2D shapes and their properties Identify parallel and perpendicular lines Use angle facts - around a point, straight line, vertically opposite etc Use angle properties of parallel lines	
	Interior and exterior angles of polygons Use sum of interior angles for irregular & regular polygons Use sum of exterior angles for regular polygons	
7	Statistics and sampling Understand bias	
	The averages Use various charts & diagrams in relation to averages Calculate the mean, mode, median and range from a list Median, mean and range from a table (discrete data) Modal class, median and estimate of the mean from grouped data	
8	Perimeter and area Convert between metric measures Read scales Time Perimeter of 2D shapes Area of 2 D shapes Area of compound shapes Surface area of prisms & simple compound forms	



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8	3D forms and volume Identify and name 3D forms and their properties Volume of a cuboid Volume of a prism Volume of a composite forms	
9	Real-life graphs Use coordinates in all four quadrants Midpoints of a line segment Conversion graphs Fixed cost and cost per unit graphs Distance / time and Velocity/ time graphs	
	Straight-line graphs Draw, use and interpret (inc gradient) straight line graphs Identify parallel lines Find the equation of a line (including from a graph)	
10	Transformations I: translations, rotations & reflections Transform and describe translations Transform and describe rotations Transform and describe reflections	
	Transformations II: enlargements and combinations Transform and describe enlargements Transform shapes using a combination of transformations Describe transformations when using multiple transformations	
11	Ratio Write ratios in their simplest form (including in context) Share a quantity in a given ratio (including 3-part ratios) Use a ratio to find one quantity when another is known Compare ratios Write ratio in the form 1:n or n:1 Write a ratio as a fraction and vice versa	
	Proportion Use direct & inverse proportion (and recognise graphically) Best value Recipes Currency conversions	
12	Right-angled triangles: Pythagoras and trigonometry Pythagoras' Theorem Trigonometry - sin, cos and tan Know exact trig values	
13	Probability I Probability scale Listing outcomes Two-way tables & Frequency Trees Use 1-p	
	Probability II Relative frequency Sample space diagrams Venn diagrams & set notation Probability tree diagrams	

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14	Multiplicative reasoning Use compound measures: Pressure, Density & Speed Percentage profit / loss Reverse percentages Simple interest Compound interest & growth Depreciation & decay Rates of pay	
15	Plans and elevations 3D shape names and properties Sketch 3D forms Draw plans and elevations of shapes Draw a 3D form given its plan and elevations	
	Constructions, loci and bearings Standard constructions Find regions satisfying a combination of loci Use maps and scale drawings Bearings	
16	Quadratic equations: expanding and factorising Expand double brackets Factorise quadratic expressions Solve quadratic equations	
	Quadratic equations: graphs Plot quadratic graphs Find solutions, intercepts & turning points of a quadratic graph	
17	Circles, cylinders, cones and spheres Name parts of a circle Recall & use formula for area and circumference of a circle Arcs and sectors Surface area & volume of a cylinder Spheres, pyramids, cones and composite solids.	
18	Fractions and reciprocals Four operations with mixed number fractions Reciprocal of an integer, decimal or fractions	
	Indices and standard form Index laws to simplify & calculate the value of an expression Convert between ordinary numbers and standard form Work with the four operations in standard form Use a calculator with indices and standard form	
19	Similarity and congruence in 2D Use congruence criteria for triangles (SSS, SAS, ASA and RHS); Identify similar shapes Identify scale factors and find missing lengths in similar shapes	
	Vectors Understand and use column notation including drawing them Identify parallel column vectors Calculate using column vectors	
20	Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations Know the terms equation, identity, expression etc Change the subject of a formula Answer simple "show that" questions. Use inverse proportion involving graphs Recognise and sketch cubic functions Recognise and sketch reciprocal functions Solve simultaneous equations algebraically and graphically	



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