GCSE Maths Revision Checklist - Foundation

Unit		Unit / Topic	Complete
1	a	**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	
	b	**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	
	c	**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	
	d	**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	a	**Algebra: the basics**	
		Write an expression	
		Collect like terms	
		Simplify expressions	
		Use index laws	
	b	**Expanding and factorising single brackets**	
		Expand single brackets	
		Simplify expressions using squares and cubes	
		Factorise expressions	
	c	**Expressions and substitution into formulae**	
		Substitute into expressions involving brackets & powers	
		Substitute into a formula (& word formula)	
3	a	**Tables**	
		Sort and classify data (inc tally charts)	
		Extract data from lists and tables (inc timetables)	
		Identify mode from a list / table	
	b	**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	
	c	**Pie charts**	
		Draw and use pie charts	
		Find mode & total frequency from a pie chart	
		Compare two pie charts	
	d	**Scatter graphs**	
		Draw and use scatter graphs & lines of best fit	
		Identify outliers & correlation	

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4	a	**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	
	b	**Fractions, decimals and percentages**	
		Use fraction to decimal conversions	
		Recognise terminating & recurring decimals	
	c	**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	a	**Equations**	
		Use function machines	
		Solve equations (inc brackets and unknowns on both sides)	
		Rearrange simple equations	
		Set up & solve equations to solve problems	
	b	**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	
	c	**Sequences**	
		Continue sequences inc from pictures	
		Find the nth term	
		Use nth term rule to generate or continue a sequence	
6	a	**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	
	b	**Interior and exterior angles of polygons**	
		Use sum of interior angles for irregular & regular polygons	
		Use sum of exterior angles for regular polygons	
7	a	**Statistics and sampling**	
		Understand bias	
	b	**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	a	**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	b	**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	a	**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	
	b	**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	a	**Transformations I: translations, rotations & reflections**	
		Transform and describe translations	
		Transform and describe rotations	
		Transform and describe reflections	
	b	**Transformations II: enlargements and combinations**	
		Transform and describe enlargements	
		Transform shapes using a combination of transformations	
		Describe transformations when using multiple transformations	
11	a	**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	
	b	**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	a	**Probability I**	
		Probability scale	
		Listing outcomes	
		Two-way tables & Frequency Trees	
		Use 1-p	
	b	**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	a	**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	
	b	**Constructions, loci and bearings**	
		Standard constructions	
		Find regions satisfying a combination of loci	
		Use maps and scale drawings	
		Bearings	
16	a	**Quadratic equations: expanding and factorising**	
		Expand double brackets	
		Factorise quadratic expressions	
		Solve quadratic equations	
	b	**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	a	**Fractions and reciprocals**	
		Four operations with mixed number fractions	
		Reciprocal of an integer, decimal or fractions	
	b	**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	a	**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	
	b	**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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