Year 7 & 8 – Revision Checklist B

Unit content	Mathswatchvle.com Clip
Algebra 1 Expressions: Understand algebraic notation, forming expressions, simplifying by collecting like terms, expanding single brackets, factorising expressions by removing single term common factors, simple index notation. Know and use index laws for multiplication and division of integer powers, add simple algebraic fractions, expand 2 linear expressions. **Algebra 2 Co-ordinates:** Understand how co-ordinates work, plot and identify co-ordinates in all 4 quadrants, Draw shapes with given coordinates or find missing coordinates of a shape by considering properties of different shapes, find a midpoint of two coordinates on a line A and B given the coordinates of A and B. Find either A or B having been given the midpoint and either A or B. **Algebra 3 Sequences:** Position-to-term and term-to-term rules involving numbers and shapes, generating sequences from rules and nth term, finding the nth term rule for linear equations, generate terms of any type of sequence using term-to-term and position-to-term rules. Find the next term or stated term given the nth term rule of quadratic sequences, recognise and use sequences of a triangular, square and cube numbers, recognise Fibonacci-type sequences (rule will be given). **Algebra 4 Equations:** Understanding inverse operations, forming equations, solving one and two step equations, solving unknowns on both sides (negatives anywhere in the equation). Solve equations involving brackets, fractional coefficients and negative solutions. **Algebra 5 Formulae** Substitute numerical values into formulae and expressions, including scientific formula. Understand and use standard mathematical formulae; rearrange formulae to change the subject. Model situations or procedures by translating them into algebraic expressions or formulae	**Algebra 1** A4, A6, A7a,b, A8, A9, A18 **Algebra 2** A1a,b, **Algebra 3** A11a,b,c, A22, A23b **Algebra 4** A12, A17, A19a,b **Algebra 5** A10, A13a,b,
Geometry 1 Area and Perimeter: Calculate area and perimeter of rectangles, triangles, parallelograms, trapeziums and compounds shapes. Find the area and circumference of circles and parts of circles. Calculate the surface area and volume of shapes made from cubes and cuboids, calculate the surface area of nets made up of rectangles and triangles. **Geometry 2 Units of Measure and Scales:** Identify suitable metric units for weight, distance and capacity, interpret scales and compare readings, convert between units of measurement (including using decimals), convert between area or volume measures, use and interpret maps and scale drawings to find lengths on a map or real life. Construct scale drawings, use speed, distance, time to find unknown values. **Geometry 3 Plans and Elevations:** Identify, name and draw nets of common 3D shapes, understand the terms faces, edges and vertices, use plans and elevations to analyse 3d shapes, use and carry out isometric drawings. Understand and draw plans and elevations of a shape made from simple solids. **Geometry 4 Angles and Polygons:** Recognise acute, obtuse and reflex angles, know angle sums for: at a point; on a straight line; in a triangle; in a quadrilateral and use to calculate missing angles, recognise vertically opposite angle and know they are equal, identify parallel and perpendicular lines, know points on a compass, use bearings (three figure) to specify direction. Understand and use angle properties in parallel lines, know formula for interior and exterior angles of polygons and that interior + exterior = 180 °, know the definition of a circle and identify, name or draw on its parts; centre, radius, chord, diameter, circumference, use bearings to mark given points on a diagram. **Geometry 5 Transformations and Vectors** Identify the order of rotational symmetry and lines of symmetry of shapes. Draw or complete a diagram with rotational symmetry or lines of symmetry. Transform 2-D shapes by: (i) enlarging – by a positive integer scale factor (ii) reflection in a given mirror line or axis (iii) rotation about a point by a given number of degrees (iv) translation by a given vector. Be able to describe transformations by stating mirror lines, centre of rotation and direction; the vector for translations and scale factors of enlargements.	**Geometry 1** G2, G8a,b, G9, G20a,b,c,d, G21a,b, G22a,b, G24, G25a,b **Geometry 2** R2, N7a,b,c, N8, G15, **Geometry 3** G12a,b,c, **Geometry 4** G10b,c, G11, G13, G14, G16, G17, G18, G19, **Geometry 5** G3, G4a,b, G5, G6, G7, G28,

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Probability: Describe probability using key vocabulary, understand that the probability scale is 0-1 and probability cannot be more than 1, find basic probability of equally likely outcomes, list all possible outcomes of a single or two successive events, know that P(a) = 1 – P(a), know that probabilities of mutually exclusive outcomes sum to 1, understand the difference between experimental and theoretical probabilities, recognise that more trials give more reliability, use language of probability understanding notation like P(A), P(A'), P(A U B), complete and interpret Venn diagrams.	**Probability** P1, P2a,b, P3, P4, P5, P6,
Number 1 Written Calculation Methods: Mental calculations (using x, ÷, + and -), use written methods to add, subtract, multiply and divide given values including decimals, use function keys on a calculator to solve harder problems, understand and apply the rules of BIDMAS. Understand the effects of multiplying and dividing by numbers between 0 and 1, recognise and use reciprocals, know that any number multiplied by its reciprocal is 1 and that zero has no reciprocal. **Number 2 Decimals and Place Value:** Use decimal notation and place value, order values (integer or decimal) on a number line, write numbers in words and from words (including decimals), multiply and divide by powers of 10 and explain the effect, round positive numbers to any power of 10, round decimals to the nearest whole number or a given decimal place, make estimations and approximations to solutions using rounding. Round to any given number of significant figures and use this to approximate answers to problems, identify upper and lower bounds of numbers. **Number 3 HCF, LCM and Types of Number:** Recognise and use multiples, factors, primes (less than 100), identify common factors, common multiples, HCF and LCM of two or more integers, understand negative integer numbers as positions on a number line, calculate using positive and negative numbers, recall squares of numbers up to 15x15 and the cubes of 1, 2, 3, 4, 5, and 10, (also knowing the corresponding roots), write a number as a product of prime factors (including index form), use product of prime factors to find HCF and LCM. Use product of prime factors to work out the root of a number, convert between ordinary and standard form, order numbers written in standard form, calculate with standard form. **Number 4 Fractions, Decimals and Percentages:** <u>Fractions:</u> Shade a shape to show a given fraction or describe a fraction shaded, simplify fractions by cancelling common factors, order fractions using equivalent fractions or by converting them to decimals, convert between mixed numbers and improper fractions, add, subtract, multiply and divide fractions and mixed numbers, calculate fractions of quantities. <u>Decimals:</u> Convert terminating decimals to fractions e.g. 0.23 = 23, recognise recurring decimals as fractions. <u>Percentages:</u> Calculate simple percentages and use percentages to compare, interpret percentage as 'so many hundredths of', express one number as a percentage of another, percentage increase and decrease (including using multipliers) <u>FDPS:</u> Recognise the equivalence of percentages, fractions and decimals, use division to convert a fraction to a decimal, use the equivalence of fractions, decimals and percentages to compare amounts.	**Number 1** N2b, N3,a,b, N4a,b, N13a,b, N14a,b, N15a,b, N16, N19a,b, N20, N25, N28a,b, N29a,b, N40a,b, N44 **Number 2** N10, N11, N17a,b, N18, N27a,b, N38, N43a,b **Number 3** N30a,b N31a,b, **Number 4** N23a,b,c N24a,b, N32, N33, N34, N35, N36, N37a,b, N39a,b, N41, N42a,b, R3,
Statistics 1 Be able to draw and interpret the following: frequency tables, pictograms, tally charts, bar charts (including composite and dual bar charts); pie charts. Be able to find the mean, median and mode for list of data and from frequency tables and grouped data. Be able to complete scatter graphs, draw lines of best fit and comment on the correlation of the data. Know the difference between qualitative, discrete and continuous data. Be able to find the range of data and consider outlying results. Know which measures of average are suitable for what types of data. Be able to design, complete and use two way tables.	**Statistics 1** S1a,b, S2a,b, S3, S4, S5, S6, S7, S8, S9, S10a,b
Ratio, Proportion and Rates of Change Be able to scale quantities up and down e.g. recipes. Understand the relationship between ratios, fractions and proportion. Be able to write quantities as ratios, simplify ratios and share amounts out using a ratio of 2 or more parts. Solve proportion questions using unitary method. Be able to plot and use linear graphs representing direct proportions e.g conversion graphs. Use proportion in the context of geometric problems.	**Ratio** R1b, R4, R5a,b, R6, R8, **R10,**

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