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|  | **Half term points** | | | | | |
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| **AUTUMN 1** | **AUTUMN 2** | **SPRING 1** | **SPRING 2** | **SUMMER 1** | **SUMMER 2** |
| N2.6 Writing numbers in standard form  N3.6 Approximating  A3.4 Plotting quadratic and cubic graphs  GM1.10 Compound units  GM6.6 Enlargement in two and three dimensions  **Hot assessments per topic – 10 questions** | N5.5 Finding the percentage change from one amount to another  GM2.8 Angles in a polygon  GM6.5 Prisms  SP2.6 Scatter diagrams  SP2.7 Using lines of best fit  GM6.7 Constructing plans and elevations  **Hot assessments per topic – 10 questions** | A3.5 Finding equations of straight lines  A3.5 Quadratic sequences  GM1.11 Working with compound units  A1.9 Simplifying harder expressions  GM6.8 Surface area and volume of 3-D shapes  **Hot assessments per topic – 10 questions** | SP4.4 Estimating probability  SP4.5 The multiplication rule  GM5.10 Finding centres of rotation  N2.7 Calculating with standard form  A1.10 Using complex formulae  A3.7 Polynomial and reciprocal functions  **Hot assessments per topic – 10 questions** | N7.5 Prime Factorisation  GM5.7 Similarity  A2.5 Quadratic sequences  A2.6 Geometric progressions  **Hot assessments per topic – 10 questions** | N7.6 Rules of indices  GM2.9 Congruent triangles and proof  A4.3 Solve pairs of equations by substitution  A4.4 Solve simultaneous equations by elimination  **Hot assessments per topic – 10 questions** |
| **Key skills and knowledge assessed:**  **Key Skills:**   * Convert to and from standard form * Check answers using approximate/estimations and evaluate results * Draw linear, quadratic, simple cubic functions * Simple compound measure problems * Change freely between compound measures * Plot enlargements   **Key Knowledge:**   * Know how to enlarge shapes * Know the multiplier for linear scale factor is squared for area or cubed for volume | **Key skills and knowledge assessed:**  **Key Skills:**   * Write a quantity as a fraction or percentage of another * Any percentage of a given amount calculator and non-calculator including simple interest * Calculate the size of exterior/interior angles in a regular polygon and solve problems using angles in polygons. * Work out the surface area/ volume of prisms * Use a line of best fit to extrapolate or interpolate data from a scatter graph * Plot and use scatter graphs identify positive or negative correlation   **Key Knowledge:**   * Know how to solve repeated percentage change problems using multipliers * Know how to work out a percentage inc/dec and repeated change using a multiplier * Know how to calculate angles in polygons and exterior angles * know that volume of a prism= area of face x depth and to find area of all faces for SA * Know how to represent 3-D shapes with 2D drawings | **Key skills and knowledge assessed:**  **Key Skills:**   * Use y=mx+c to identify parallel and perpendicular lines * Find gradient of a given line * Find the nth term of a quadratic sequence * Change freely between compound measures * Simplify and manipulate expressions by collecting like terms * Calculate surface areas and volume of cubes and cuboids   **Key Knowledge:**   * Know a method of finding the gradient of a line * Know a method to find the nth term of quadratic sequence | **Key skills and knowledge assessed:**  **Key Skills:**   * Plot rotations * Calculate in standard form – with and without a calculator. * Convert to and from standard form * Rearrange formulae for a given subject * Draw linear, quadratic, simple cubic, exponential and 1/x graphs identifying key points   **Key Knowledge:**   * Know that more trials of an experiment tend to allow the experimental probability (relative frequency) to tend toward the theoretical probability * Know the difference between dependent and independent events in probability * Know to multiply along branches in a probability tree * Know a method to find the order of rotation * Know the characteristic functions of linear, quadratic, reciprocal, cubic and exponential graphs | **Key skills and knowledge assessed:**  **Key Skills:**   * Write numbers as the product of their prime factors * Solve problems using factors, multiples primes * Solve problems involving congruent or similar shape * Recognise and continue quadratic sequences * Find the nth term of a quadratic sequence * Obtain a term-to-term rule for a geometric progression   **Key Knowledge:**   * Know how to solve problems involving congruent or similar shape * Know that a quadratic sequence has a constant 2nd difference | **Key skills and knowledge assessed:**  **Key Skills:**   * Calculate with roots and integer indices * Solve problems involving congruent or similar shape * Fully understand SAS, RHS, SAS, SSS constructions give congruent triangles, identifying and stating * Solve two linear simultaneous equations algebraically and graphically   **Key Knowledge**   * Know how to solve problems involving congruent or similar shape * Know how to use either elimination or substitution to solve linear simultaneous equations |
| **Meaningful homeworks:**  **Paper-based task on current and previous topics**  Volume of cuboids  Solving inequalities  Inequalities on number lines  Angles in parallel lines  Construction with a ruler and protractor  Perimeter  Adding fractions  Dividing fractions  Expanding and simplifying  Venn Diagrams & Probability  Describing transformations  Ratio problems | **Meaningful homeworks:**  **Paper-based task on current and previous topics**  Ratio simplest form  Equivalent ratios  Sharing a ratio  Solving equations  Solving inequalities  Inequalities on number lines  Expanding brackets  Simplifying expressions | **Meaningful homeworks:**  **Paper-based task on current and previous topics**  Speed, distance, time  Writing a number in standard form  Calculations in standard form  Enlargements  Density, mass, volume  Significant figures  Plotting quadratics | **Meaningful homeworks:**  **Paper-based task on current and previous topics**  Volume of a pyramid  Rounding to given decimal places  Volume of a prism  Area of cross section  Percentage increase  Percentage profit  Compound interest  Interior angles of polygons  Exterior angles of polygons  Scatter graphs  Line of best fit | **Meaningful homeworks:**  **Paper-based task on current and previous topics**  Simplifying expressions  Laws of indices  Surface area of cuboids  Volume of cuboids  Expanding and simplifying single brackets  Calculating in standard form  Ordering standard form  Equations of parallel and perpendcular lines  Probability of a single event  Estimating probability  Plotting reciprocal functions  Combinations  Converting compoud units  Density  Rearranging equations | **Meaningful homeworks:**  **Paper-based task on current and previous topics**  Lowest common multiples  Product of primes  Simplifying index Form  4 operations in standard form  Ordindary number to standard form  Finding the nth term rule of a quadratic sequence  Fibanacci sequences  Probability in a table  Rearranging a formula to a given subject  Probability trees  Forming equations  Similar triangles |
| **Key skills and knowledge assessed:**  **Key Skills:**   * Work out the surface area/ volume of cuboids in context * Solve linear inequalities and represent them on a number line * Use correct inequality notation on number lines and to show intervals * Construct shapes using a protractor and ruler (ASA and SAS triangles) * Calculate the perimeter of shapes * Draw and Use tree diagrams and Venn diagrams for calculating probabilities * Identify, draw and describe transformations (inc. fractional/ negative scale factors for enlargement).   **Key Knowledge:**   * Know the formula for the volume of a cuboid * Know that linear inequalities are similar to linear equations * Know how to identify parallel lines * Know how to use a ruler AND protractor in shape construction * Know how + - / \* fractions inc improper * Know how to expand and simplify | **Key skills and knowledge assessed:**  **Key Skills:**   * Find the ratio of an amount, 2 or 3 parts * Ratio given part find total or other amount or ratio problem solving * Solve linear equations in one unknown, unknown on both sides * Solve linear inequalities and then represent them on a number line * Expand the product of two binomials   **Key Knowledge:**   * Know how to simplify ratio * Know the process to share when given a ratio * Know the process to balance equations to find a solution * Know how to expand and simplify | **Key skills and knowledge assessed:**  **Key Skills:**   * Convert to and from standard form * Calculate in standard form – with and without a calculator * Identify, draw and describe transformations (inc. fractional/ negative scale factors for enlargement) * Draw quadratics * Find roots and intercepts of quadratic graphs from plot   **Key Knowledge:**   * Know the definition of speed * Know how to enlarge shapes * Know the definition of density * Know how to round to decimal places and to significant figures * Know the characteristic functions of linear, quadratic, cubic | **Key skills and knowledge assessed:**  **Key Skills:**   * Calculate volumes of spheres, cones, and pyramids * Work out the surface area/ volume of cylinders, pyramids, spheres, hemispheres, cones, and prisms * Calculate the area of simple shapes rectangle, triangle, etc * Work out a percentage inc/ dec and repeated change using the multiplier * Solve complex repeated and inverse percentage problems. * Calculate the size of exterior/interior angles in a regular polygon and solve problems using angles in polygons. * Use a line of best fit to extrapolate or interpolate data from a scatter graph * Plot and use scatter graphs identify positive or negative correlation   **Key Knowledge:**   * Know how to round to decimal places * know that volume of a prism= area of face x depth * Know how to calculate reverse percentages * Know how to work out a percentage inc/dec and repeated change using a multiplier | **Key skills and knowledge assessed:**  **Key Skills:**   * Calculate with integer indices * Calculate surface areas and volume of cubes and cuboids * Work out the surface area/ volume of cuboids in context * To expand single brackets * Calculate in standard form – with and without a calculator * Convert to and from standard form * Change freely between compound measures   **Key Knowledge:**   * Know how to simplify harder expressions * Know how to find the surface area of shapes * Know to how expand single brackets * Know how to expand and simplify * Know that more trials of an experiment tend to allow the experimental probability (relative frequency) to tend toward the theoretical probability * Know the difference between dependent and independent events in probability * Know to multiply along branches in a probability tree * Know the characteristic shape of the graph of a quadratic, cubic and reciprocal graph | **Key skills and knowledge assessed:**  **Key Skills:**   * Write numbers as the product of their prime factors and solve problems for HCF /LCM * Calculate in standard form – with and without a calculator * Find the nth term of a quadratic sequence * Solve problems involving congruent or similar shape   **Key Knowledge:**   * Know that a quadratic sequence has a constant 2nd difference * Know how to use the rules for special sequences, Fibonacci etc * Know to multiply along branches in a probability tree |
| **Meaningful homeworks:**  **Mathswatch**  Topics from Year9 Summer 2 | **Meaningful homeworks:**  **Mathswatch**  Topics from Autumn 1 | **Meaningful homeworks:**  **Mathswatch**  Topics from Autumn 2 | **Meaningful homeworks:**  **Mathswatch**  Topics from Spring 1 | **Meaningful homeworks:**  **Mathswatch**  Topics from Spring 2 | **Meaningful homeworks:**  **Mathswatch**  Topics from Summer 1 |