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|-----------------------------|--|--|----|---|----|-----|
| NAME | | TEACHER | | | | |
| My GCSE Target Grade is | | End of Cycle Teacher Assessment Please circle | | | | |
| | | SAE | AE | E | BE | SBE |
| End of unit assessment type | | Your end of topic assessment will be a written exam. | | | | |

YEAR 8 CYCLE 1: NUMBER, ALGEBRA, 3D SHAPES

| Knowledge | | Prior knowledge | End of topic |
|---|--|--------------------|-----------------|
| 7 to 9 | Prime Factors - I can use index notation and write a number as a product of its prime factors | | |
| | Indices – I can calculate using the laws of indices, including with positive and negative powers and for multiplying and dividing | | |
| | Estimation – I can estimate calculation by rounding to 1 significant figure | | |
| | Expanding & Factorising – I can expand and factorise expressions involving powers | | |
| | Substituting and solving equations – construct and solve equations | | |
| 6 | Calculations - I can add and subtract decimals and apply this to money problems | | |
| | Powers & Roots – I can calculate using squares & square roots, cubes & cube roots, use index notation and estimate the square root of a number | | |
| | Substitution – I can substitute into formulas involving powers, roots and brackets | | |
| | Substitution 2 – I can substitute into algebraic expressions and form expressions | | |
| | Expanding Brackets – I can multiply out double brackets and collect like terms | | |
| | Area – I can find the area of a triangle, parallelogram and trapezia including with compound shapes and apply to problems involving money <i>Teach angles in triangles and quadrilaterals first</i> | | |
| | 3D shapes – I can sketch nets of 3D solids and find the volume of cubes and cuboids | | |
| Surface Area - I can calculate the surface area of cubes and cuboids | | | |
| 5 | Calculations – I can add, subtract, multiply and divide numbers with more than 3 digits | | |
| | Negative Numbers – I can add, subtract, multiply and divide positive and negative numbers | | |
| | Ratio – I can work with ratios, find equivalent ratios and solve word problems involving ratio <i>Teach comparing fractions, equivalent fractions, calculating with simple fractions</i> <i>Teach basic percentages first</i> | | |
| | 3D Shapes – I can identify the properties and draw the net of a 3D shape <i>Teach Perimeter of squares, rectangles and regular polygons first</i> <i>Teach Area of squares and rectangles first</i> | | |
| | Measures – I can solve problems involving units of length, area and capacity | | |

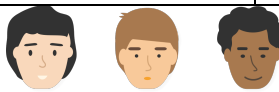
LEARNING TOOLS

| | | | | |
|----------------------|--------------------------------------|---|--|--|
| KEY CONCEPTS | Indices / Powers | What is a power? (Superpower?) | | |
| | Area / Volume | | | |
| KEY QUESTIONS | Factorising is the opposite of ----- | Where have you heard substitution before? | What are the two systems of measurement? | |
| KEY EQUATION | | Area of a Parallelogram = | | |

YEAR 8 CYCLE 1: NUMBER & ALGEBRA / VOLUME 3D SHAPES

| | Skills | Prior knowledge | End of topic |
|---------------------|---|-----------------|--------------|
| 7 to 9 Delta | N6 - use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 | | |
| | N14 - estimate answers; check calculations using approximation and estimation | | |
| | N15 - round numbers and measures to an appropriate degree of accuracy | | |
| | A3 - understand and use the concepts and vocabulary of expressions, equations, formulae, <u>identities</u> , inequalities, terms and factors | | |
| 6 Theta | N4 - use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation | | |
| | N3 - recognise and use relationships between operations, including inverse operations and be able to use BIDMAS | | |
| | G16 - know and apply formulae to calculate: area of triangles, parallelograms, trapezia; volume of cuboids and other right prisms (including cylinders) | | |
| | G17 - know the formulae: circumference of a circle = $2\pi r = \pi d$, area of a circle = πr^2 ; calculate: perimeters of 2D shapes, including circles; areas of circles | | |
| 5 Pi | R4- use ratio notation, including reduction to simplest form | | |
| | R5 - divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio | | |
| | G1 - use conventional terms and notation: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons and polygons with reflection and/or rotation symmetries | | |
| | G12 - identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres | | |
| | G13 - interpret plans and elevations of 3D shapes | | |

EVERYBODY READS... IN MATHS!

| KEY WORDS | Sketch | Surface Area | Prime Factor | Diameter | Prism |
|----------------------|--|--------------|--------------|----------|-------|
| | | | | | |
| PROBLEM OF THE CYCLE |  <p>Bill, David, and Joey are the 3 finalists in a hot dog eating contest.</p> <ul style="list-style-type: none"> • Bill did not eat the fewest hot dogs • David did not eat the greatest number of hot dogs. • Joey ate more hot dogs than Bill. <p>Who won the contest by eating the most hot dogs?</p> | | | | |