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|  | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Duration of term | 7 weeks 3 days | 7 weeks | 7 weeks | 6 weeks | 3 weeks 4 days | 8 weeks |
| Unit(s) taught | Place value (4 weeks)  Addition and subtraction (3 weeks 3 days) | Test week (2 days)  Multiplication and division (4 weeks)  Geometry – property of shape (3 weeks) including area, volume and perimeter | Fraction, decimals and percentages (6 weeks)  Geometry – position and direction (1 week) | Test week (2 days)  Place value / calculation recap (2 weeks)  Measurement (3 weeks) | Statistics (2 weeks)  Revision of previous learning | Test week (2 days)  Remainder of term – using QLA to address gaps (prior to transition meetings) |
| Essential prior knowledge | * Place value understanding of ThHTO.t h * Counting / up downs in 10s, 25s, 50s, 250s and multiples of any other multiplication table * Counting up and down in 1s, 10s, 100s from given numbers * Add and subtract single digits to 2-digit numbers mentally * Round and adjust mental strategy * Near double additions | * Recall of multiplication and division facts (secure in Y4) * Place value understanding to millions * Understanding of tenths and hundredths for place value * Counting in halves from starting point * Able to count squares and half squares | * See previous two columns * Knowledge of tenths and hundreds * Recall of key fraction equivalences e.g. ½ = 0.5 * Able to add and subtract fractions with common denominators * Money values – linking coins to amounts * Co-ordinates vocabulary and key rules * Negative number understanding | * Multiplying and dividing by 10, 100, 1000 * Conversion between cm and metre, hour and minute, minutes and seconds * Size of a metre, cm, mm, km, kg, g, ml, l… | * Counting up in 2s, 5s, 10s, 25s, 50s, 100s, 250s, fractions, decimals * Finding half way points * Mental calculation of fractions of amounts * Calculation methods (to solve word problems based on graph / chart)   NB: During this unit, children will be using and applying knowledge and understanding from across the Y3, 4 and 5 curriculum. They will be taught how to use common strategies in a range of contexts | Decided based on the QLA – teachers to assess existing knowledge and use this to address areas not yet secure. |
| Key facts non negotiables | * Number bonds to 10, 100 * Application of related facts e.g. 40 x 3 * Addition and subtraction using related facts * Addition involving place value e.g. 305040 = 300000 + \_\_\_\_ + 40 * Recall of multiplication and division facts at speed | * Use of related calculation facts including decimals e.g. 0.6 x 80 * Recall of factors, common factors * Recall of prime numbers * Recognising square and cubed numbers * Recall the formula for area and perimeter for quadrilaterals * Recall angle facts for right angle, straight lines, acute, obtuse, reflex and angles within a triangle / quadrilateral | * Children recall key FDP equivalencies e.g. ½, ¼, 3/4, fifths, tenths, hundredths * Recall key processes for multiplying fractions * Apply mental calculation of fraction and percentage problems which can be solved using mental strategies and related facts e.g. 10% of 640, 3/5 of 350 | * Use of multiplication and division by 10, 100, 1000 to convert key measures * Recall conversion between inches, pounds and pints * Use formula for volume | Recall of half way points in measures e.g. 175g is half way between 150 and 200g  Recall of measurement conversions e.g. 1.5kg = 1500g  NB: During this unit, children will be using and applying knowledge and understanding from across the Y3, 4 and 5 curriculum. They will be taught how to use common strategies in a range of contexts | Children can recall all key facts expected of Y5 child |
| KPIs | * Reads, writes, orders and compares numbers to at least one million and determines the value of each digit. * Interprets negative numbers in context, counts forwards and backwards with positive and negative whole numbers including through zero. * adds and subtracts whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). * Add and subtract numbers mentally with increasingly large numbers (eg, 12,462 – 2,300 – 10,162). | * Identifies multiples and factors including finding all factor pairs of a number and common factors of two numbers. * Solves problems involving multiplication and division including using a knowledge of factors and multiples, squares and cubes. * Solves problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. * Measures and calculates the perimeter of composite rectilinear shapes in centimetres and metres. * Calculates and compares the area of rectangles (including squares) and including using standard units, square centimetres (cm2) and square metres (m2). * Draws given angles and measures them in degrees. * Distinguishes between regular and irregular polygons based on reasoning about equal sides and angles. | * Compares and orders fractions whose denominators are all multiples of the same number. * Reads and writes decimal numbers as fractions; e.g., 0.71 = 71/100. * Reads, writes, orders and compares numbers with up to three decimal places. * Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. | * (see Aut 1 and 2 for PV and calculations) * Converts between different units of metric measure (e.g., kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). | Revision of KPIs from previous term and:   * Completes, reads and interprets information in tables, including timetables. |  |
| Revision of key objectives but particularly focused on transferring skill between problem solving objectives including:   * Solves problems involving multiplication and division including using a knowledge of factors and multiples, squares and cubes. * Solves problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. * Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. | |
| Additional objectives | * count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 * round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 * solve number problems and practical problems that involve all of the above * read Roman numerals to 1000 (M) and recognise years written in Roman numerals. * use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy * solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | * know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers * establish whether a number up to 100 is prime and recall prime numbers up to 19 * multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers * multiply and divide numbers mentally drawing upon known facts * divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context * multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 * recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) * solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign * identify 3-D shapes, including cubes and other cuboids, from 2-D representations * know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles   identify:   * angles at a point and one whole turn (total 360o) * angles at a point on a straight line and 21 a turn (total 180o) * other multiples of 90o * use the properties of rectangles to deduce related facts and find missing lengths and angles * measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres * calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes * estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] | * identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths * recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5] * add and subtract fractions with the same denominator and denominators that are multiples of the same number * multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams * recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents * round decimals with two decimal places to the nearest whole number and to one decimal place * solve problems involving number up to three decimal places * recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal | * (see Aut 1 and 2 for PV and calculations) * understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints * measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres * calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes * estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] * solve problems involving converting between units of time * use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | * solve comparison, sum and difference problems using information presented in a line graph |  |
| Revision of key objectives but particularly focused on transferring skill between problem solving objectives including:   * solve number problems and practical problems that involve rounding and counting forwards and backwards in powers of 10   Unit must also ensure that children are fully secure with all written methods including long division (ASJ need to decide whether this is added here to give this starting point for Y6) | |
| Explicit teaching of problem solving | Act it out  Trial and error | Algebra | Working backwards | Pattern  Simplify | List or table | Trial by improvement |
| Vocabulary | Powers of 10  Millions, thousands, hundreds, tens, ones, tenths, hundredths  Greater than, less than, more, decrease, total  Efficient written  method  Multistep  Part / whole, bar model, represent | Product, factor, volume, multiply, divide, divisible, share, group, remainder, place holder, factor pair, prime  Composite  numbers, prime  number, prime  factors, square  number, cubed  number  Formal written  Method  Regular and irregular  Polygons | Proper fractions, improper  fractions, mixed numbers  Percentage  Half, quarter, fifth, two  fifths, four fifths  Ratio, proportion  Reflex angle  Dimensions | Volume  Imperial units, metric  units | Bar line graph, line graph, maximum / minimum value, outcome |  |
| Application of all Year 3, 4 and 5 key vocabulary in context of reasoning and problem solving contexts | |