**CJS Year 5 Maths overview**

Year 5 Autumn 1

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| **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** |
| **Assessment**  Make flashcards of important Y3/4 facts.  Presentation in books.  Counting.  Number bonds to 10, 20 and 100.  Days in each month  Days in a year and leap year | **Place value**   * Partition 5 digit numbers into TThThHTO (counters, bar model). * Partition 5 digit numbers in different ways (counters, bar model). * Solve balancing equations with partitioning numbers in different ways. * Position of TThThHTO on a number line with benchmarks labelled. * Position of TThThHTO on a number line with only two benchmarks * Position of the same TThThHTO on differently benchmarked number lines.   **Counting**   * Counting in 10000s from any number. * Adding / subtracting O, T, H, Th, TThs crossing boundaries by using counters on a place value grid and exchanging.   **Comparing and ordering**   * Saying which is bigger / smaller out of two TThThHTO numbers, represented in different ways (concrete, pictorial and abstract). * Using < and > to show the relative size of two TThThHTO numbers. * Saying which is bigger / smaller out of three+ TThThHTO numbers represented in different ways (concrete, pictorial and abstract).   **Rounding**   * Say which multiples of O, T, H, Th and TTh a number lies between. * Place numbers between multiples of O, T, H, Th and TTh on a number line. * Round numbers to the nearest T, H, Th and TTh * Say which numbers could have been rounded to a given multiple of T, H, Th or TTh. * Say all possibilities of a number that could have been rounded to a given multiple of 10. * Say the biggest and smallest possible number that could have been rounded to a given multiple of H, Th and TTh. | | **Addition and subtraction**   * TThThHTO +– TThThHTO using concrete materials, no exchange then exchange. * TThThHTO +– TThThHTO using pictorial method, no exchange then exchange. * TThThHTO +– TThThHTO using expanded column method, no exchange. * TThThHTO +– TThThHTO using expanded column method, exchange in ones only. * TThThHTO +– TThThHTO using expanded column method, exchange in tens only. * TthThHTO +– TThThHTO using expanded column method, exchange in hundreds only. * TthThHTO +– TThThHTO using expanded column method, exchange in thousands only. * TThThHTO +– TThThHTO using expanded column method, exchange in ones, tens, hundreds and thousands. * TThTHHTO +– TThThHTO using contracted column method, no exchange. * TThThHTO +– TThThHTO using contracted column method, exchange in ones only. * TThThHTO +– TThThHTO using contracted column method, exchange in tens only. * TThThHTO +– TThThHTO using contracted column method, exchange in hundreds only. * TthThHTO +– TThThHTO using expanded column method, exchange in thousands only. * TThThHTO +– TThThHTO using contracted column method, exchange in ones, tens, hundreds and thousands. * Missing number problems (whole and part unknown) TThThHTO +-TThThHTO. * Balancing equations (whole and part unknown) TThThHTO +- TThThHTO. * Number problem solving * Sort worded problems based on whether the whole or a part is unknown. * Break two step problems into the first and second calculation needed based on whether the whole or part is unknown. | | **Multiplying and dividing by powers of 10**   * Multiply numbers by 10 (product unknown) * Divide numbers by 10 (factor unknown) * Something multiplied by 10 = XXX (factor unknown). * Something divided by 10 = XX (product unknown). * Multiply numbers by 100 (product unknown) * Divide numbers by 100 (factor unknown) * Something multiplied by 100 = XXX (factor unknown). * Something divided by 100 = XX (product unknown). * Multiply numbers by 1000 (product unknown) * Divide numbers by 1000 (factor unknown) * Something multiplied by 1000 = XXX (factor unknown). * Something divided by 1000 = XX (product unknown). * Solve missing number problems where the missing number the factor and a power of 10. * Multiply any number by 20 by multiplying by 10 and doubling. * Divide any number by 20 by dividing by 10 and halving. * Multiply any number by 5 by multiplying by 10 and halving. * Divide any number by 5 by dividing by 10 and doubling. * Multiply any number by 200 by multiplying by 100 and doubling. * Divide any number by 200 by dividing by 100 and halving. * Multiply any number by 50 by multiplying by 100 and halving. * Divide any number by 50 by dividing by 100 and doubling. | | **Reflex angles**   * Represent reflex angles as greater than straight lines but smaller than full turns. * Identify reflex angles in different orientations, sizes and shapes. * Estimate the size of reflex angles where the 270 degree benchmark is labelled. * Estimate the size of reflex angles with no benchmarks. * Compare two reflex angles to say which is bigger / smaller. * Order multiple reflex angles from smallest to biggest / biggest to smallest. * Order multiple reflex, obtuse and acute angles from smallest to biggest / biggest to smallest. |

Autumn 2

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| **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** |
| **Multiplication and division**   * Use base 10 to multiply HTO by O. * Use the expanded column method for multiplying HTO by O. * Use the expanded column method for multiplying ThHTO by O. * Use the contracted column method for multiplying ThHTO by O. * Use Numicon to divide ThHTO by O using short division with no remainders. * Use short division to divide ThHTO by O with no remainders. * Use Numicon to divide ThHTO by O using short division with remainders. * Use short division to divide ThHTO by O with remainders. * Use Numicon to divide ThHTO by 5 using short division so as to get a decimal reminder of one decimal place. * Use short division to divide ThHTO by 5 using short division so as to get a decimal reminder of one decimal place. * Use Numicon to divide ThHTO by 4 or 8 using short division so as to get a decimal reminder of two decimal places. * Use short division to divide ThHTO by 4 or 8 using short division so as to get a decimal reminder of two decimal places. * Use Numicon to divide ThHTO by 3, 6, 7 or 9 using short division so as to get a decimal reminder of more than two decimal places. * Use short division to divide ThHTO by 3, 6 or 9 using short division so as to get a decimal reminder of more than two decimal places. * Sort missing number problems based on whether the product or a factor is unknown. * Solve missing number problems for multiplication and division, selecting the correct operation. * Decide whether to round remainders up or down depending on the context of division problems. * Sort worded problems based on whether the whole, number of parts or size of each part is unknown, then solve. * Break two step problems into the first and second calculation needed based on whether the whole, number of parts or size of each part is unknown. | | | **Position and translation in the first quadrant**   * Read the coordinates of a point in the first quadrant. * Plot a point in the first quadrant. * Read the coordinates of corners of polygons in the first quadrant. * Plot the points of corners of polygons in the first quadrant. * Work out missing corners of polygons and write the coordinates. * Translate a shape vertically by moving each corner. * Translate a shape vertically by moving one corner and copying the shape’s dimensions. * Translate a shape vertically and write its new coordinates. * Given the final position and the vertical translation, draw the original position. * Given the final position and the vertical translation, write the coordinates of the original position. * Translate a shape horizontally by moving each corner. * Translate a shape horizontally by moving one corner and copying the shape’s dimensions. * Translate a shape horizontally and write its new coordinates. * Given the final position and the horizontal translation, draw the original position. * Given the final position and the horizontal translation, write the coordinates of the original position. * Translate a shape both vertically and horizontally by moving each corner. * Translate a shape both vertically and horizontally by moving one corner and copying the shape’s dimensions. * Translate a shape both vertically and horizontally and write its new coordinates. * Given the final position and both the vertical and horizontal translation, draw the original position. * Given the final position and both the vertical and horizontal translation, write the coordinates of the original position. | | **Mass**   * Get know benchmarks of mass 10g, 100g, 500g, 1kg, 5kg, 10kg, 100kg, 1000kg etc). * Read and mark scales that increase in 500g but only kg are labelled. * Read and mark scales that increase in 100g but only 500g and kg are labelled. * Read and mark scales that increase in 50g but only 100g are labelled. * Read and mark scales that increase in 25g but only 100g are labelled. * Read and mark scales that increase in 10g but only 50g are labelled. * Show what the same mass looks like on different scales. * Convert between g and kg and vice versa. * Measure the mass of common objects using a variety of scales. * Add masses together and mark on varied scales. * Subtract masses and mark on varied scales. * Sort mass problems based on whether the whole or a part is unknown, then solve. * Break two step problems into the first and second calculation needed based on whether the whole or a part is unknown. | |

Spring 1

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| **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** |
| **Fractions**   * Find fractions of equivalent value by drawing bar models and halving parts. * Find fractions of equivalent value by reading a fraction wall. * Show which fraction out of two is bigger by shading a picture or drawing own bar model (where one denominator is a multiple of the other). * Order three or more fractions by shading pictures or drawing own bar model (where denominators are multiples of each other). * Make and describe improper fractions using Numicon or multi link cubes. * Read pictures of improper fractions. * Draw improper fractions as bar models. * Make and describe mixed numbers using Numicon or multi link cubes. * Read pictures of mixed numbers. * Draw mixed numbers as bar models. * Convert improper fractions to mixed numbers by making or drawing bar models. * Convert mixed numbers to improper fractions by making or drawing bar models. | | **Calculating with angles**   * In a right angle split into two parts and one of the parts is known, work out the unknown angle. * In a right angle split into three parts and two of the parts are known, work out the unknown angle. * In a straight line split into two parts and one of the parts is known, work out the unknown angle. * In a straight line split into three parts and two of the parts are known, work out the unknown angle. * In a full turn split into two parts and one of the parts is known, work out the unknown angle. * In a full turn split into three or more parts and all but one of the parts are known, work out the unknown angle. | **Decimals**  **Tenths**   * Relate tenths as fractions to tenths as decimals and convert between them. * Relate tenths to multiples of 10p. * Count in tenths between and across whole numbers, forwards and backwards. * Read and mark multiples of tenth on different number lines. * Say which is bigger or smaller out of two O.t numbers. * Order three or more O.t numbers from biggest to smallest and smallest to biggest. * Round O.t numbers to the nearest whole number. * Add and subtract multiples of tenth to any O.t number using place value counters and number lines.   **Hundredths**   * Relate hundredths as fractions to hundredths as decimals and convert between them. * Relate hundredths to multiples of 1p. * Count in hundredths between and across multiples of tenth and whole numbers, forwards and backwards. * Read and mark multiples of hundredths on different number lines. * Show pictorially and on a number line that, for example, 0.4 and 0.04 are not the same. * Say which is bigger or smaller out of two O.th numbers. * Order three or more O.th numbers from biggest to smallest and smallest to biggest. * Order three or more decimal numbers from biggest to smallest and smallest to biggest. * Round O.th numbers to the nearest tenth and whole number. * Add and subtract multiples of hundredth to any O.th number using place value counters and number lines. * Add and subtract O.th using expanded column methods. * Add and subtract O.th using contracted column methods. * Sort money problems based on whether the whole or a part is unknown. * Break two step money problems into the first and second calculation needed based on whether the whole, number of parts or size of each part is unknown. | | |

Spring 2

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| **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** |
| **Adding and subtracting fractions**   * Add and subtract fractions with the same denominator within and up to one whole using Numicon. * Add and subtract fractions with the same denominator within and up to one whole using a bar model and number line. * Add and subtract fractions where one denominator is a multiple of the other using Numicon. * Add and subtract fractions where one denominator is a multiple of the other using a bar model and number line. * Add and subtract proper and improper fractions. * Add and subtract proper fractions and mixed numbers. * Add and subtract improper fractions and mixed numbers. * Add and subtract combinations of proper fractions, improper fractions and mixed numbers. * Generate 4 addition and subtraction statements involving all 3 types of fraction using a bar model. * Generate 4 addition and subtraction statements involving all 3 types of fraction using a bar model where the whole or a part is unknown. * Sort missing number questions involving all 3 types of fraction based on whether the whole or a part is unknown, then solve. * Solve balancing equations involving all 3 types of fraction where both sides are whole unknown. * Solve balancing equations involving all 3 types of fraction where both sides are part unknown. * Solve balancing equations involving all 3 types of fraction where one side is part unknown and one side is whole unknown. | | **Symmetry in the first quadrant**   * Reflect a rectilinear shape in the x axis one corner at a time. * Reflect a rectilinear shape in the x axis by working out one corner and copying the dimensions of the original shape. * Reflect a rectilinear shape in the y axis one corner at a time. * Reflect a rectilinear shape in the y axis by working out one corner and copying the dimensions of the original shape. * Reflect a shape with diagonal lines in the x axis one corner at a time. * Reflect a shape with diagonal lines in the x axis by working out one corner and copying the dimensions of the original shape. * Reflect a shape with diagonal lines in the y axis one corner at a time. * Reflect a shape with diagonal lines in the y axis by working out one corner and copying the dimensions of the original shape. * Write the coordinates of reflected shapes in varied mirror lines. * Reflect a rectilinear shape in a diagonal mirror line one corner at a time. * Reflect a rectilinear shape in a diagonal mirror line by working out one corner and copying the dimensions of the original shape. * Reflect a shape with diagonal lines in a diagonal mirror line one corner at a time. * Reflect a shape with diagonal lines in a diagonal mirror line by working out one corner and copying the dimensions of the original shape. * Write the coordinates of reflected shapes in varied mirror lines. * Complete partial shapes both sides of a mirror line to find the original and its reflection | | **Volume of liquid / capacity**   * Get know benchmarks of volume 10ml, 100ml, 500ml, 1L, 5L, 10L, 100L, 1000L etc). * Read and mark scales that increase in 500ml but only L are labelled. * Read and mark scales that increase in 100ml but only 500ml and L are labelled. * Read and mark scales that increase in 50ml but only 100ml are labelled. * Read and mark scales that increase in 25ml but only 100ml are labelled. * Read and mark scales that increase in 10ml but only 50ml are labelled. * Show what the same volume looks like on different scales. * Convert between ml and L and vice versa. * Measure the volume of liquids using a variety of scales. * Add volumes together and mark on varied scales. * Subtract volumes and mark on varied scales. * Sort volume problems based on whether the whole or a part is unknown, then solve. * Break two step problems into the first and second calculation needed based on whether the whole or a part is unknown. | |

Summer 1

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| **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** |
| **Multiples and factors**   * Identify multiples of numbers beyond times tables by using known facts and counting, * Identify multiples that two or more numbers have in common. * Fill in Carroll and Venn diagrams using multiples. * Systematically identify factor pairs of a number using Numicon. * Systematically identify factors pairs of a number using knowledge of times tables. * Identify factors that two or more numbers have in common. * Identify a number from its factors. * Identify prime numbers based on numbers that have only two factors. * Sort prime and composite numbers. | **Multiplying and dividing fractions**   * Multiply unit fractions by whole numbers using multi link cubes and number lines. * Divide a fraction by a unit fraction by counting up. * Multiply non unit fractions by whole numbers using multi link cubes and number lines. * Divide a fraction by a non-unit fraction by counting up. * Multiply a mixed number by a whole number using multi link cubes and number lines. * Divide a fraction by a mixed number by counting up. * Generate 4 multiplication and division statements using a bar model. * Generate 4 multiplication and division statements using a bar model where the whole or a part is unknown. * Sort missing number questions based on whether the product or a factor is unknown, then solve. * Sort worded problems based on whether the product or a factor is unknown, then solve. * Break two step problems into the first and second calculation needed based on whether the whole or a part is unknown. | | **Negative numbers**   * Count backwards in ones from zero. * Count backwards in other multiples from zero. * Count backwards in twos from an odd one digit number, crossing zero. * Count backwards in other multiples from any one digit number, crossing zero. * Subtract a larger number (part) from a smaller number (whole) to find a negative part. * Add a positive to a negative to find a positive whole. | **2D and 3D shape**   * Classify examples and non examples of regular and irregular shapes. * Name the 3D shapes in different orientations and sizes. * Match 2D drawings in different orientations and sizes to 3D shapes. * Label the properties of 3D shapes on drawings (number of edges, number of vertices, number of faces). * Sort 3D shapes based on their properties using varied Carroll and Venn diagrams. |

Summer 2

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| **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** |
| **Fractions of an amount**   * Calculate a unit fraction of a number by dividing into groups of the denominator – counters on a bar model. * Calculate a unit fraction of a number by dividing into groups of the denominator – jottings on a bar model. * Calculate the whole when given the unit fraction. * Calculate a non unit fraction of a number by dividing into groups of the denominator and multiplying by the numerator – counters on a bar model. * Calculate a non unit fraction of a number by dividing into groups of the denominator and multiplying by the numerator – jottings on a bar model. * Calculate the whole when given the non unit fraction. * Solve balancing equations where both sides are unit fractions (whole and part unknown). * Solve balancing equations where one side is a unit fraction and one side is a non unit fraction (whole and part unknown). * Solve balancing equations where both sides are non unit fractions (whole and part unknown). * Varied problem solving with fractions of amounts. * Sort worded problems based on whether the whole, the number of parts or the size of each part is unknown, then solve. * Break two step problems into the first and second calculation needed based on whether the whole, the number of parts or the size of each part is unknown. | | **Perimeter and area**   * Calculate the perimeter of rectangles where two adjacent sides are labelled. * Calculate the perimeter of rectilinear shapes where all sides are labelled. * Work out unlabelled side lengths in rectilinear shapes. * Calculate the perimeter of rectilinear shapes where some sides are labelled. * Calculate the area of rectangles by multiplying adjacent sides. * Calculate an unknown side of a rectangle by dividing the area by the known side. * Calculate the area of compound rectilinear shapes by working out the area of each rectangle and adding them together. * Estimate the area of irregular shapes. * Describe how area can change as perimeter changes and vice versa. * Draw shapes that satisfy given perimeter and area. | **Square and cubed numbers**   * Identify square numbers. * Read and write correct notation for square numbers. * Sort square numbers in Carroll and Venn diagrams. * Solve problems such as ‘something squared = 81’. * Calculate cube of numbers. * Read and write correct notation for cubed numbers. * Sort cubed numbers in Carroll and Venn diagrams. * Solve problems such as ‘something cubed = 27’. | **Roman numerals**   * Know and convert between numbers V, X, L, C. * Know how to write multiples of 10. * Know how to read and write multiples of 5. * Know how to read and write one, two and three more than V, X, L and C. * Know how to read and write one less than V, X, L and C. | **Measuring and drawing angles**   * Use a protractor to measure acute angles. * Use a broken protractor to measure acute angles. * Use a protractor to measure obtuse angles. * Use a broken protractor to measure obtuse angles. * Use a protractor to measure reflex angles. * Use a broken protractor to measure reflex angles. * Draw acute angles with a protractor. * Draw acute angles with a broken protractor. * Draw obtuse angles with a protractor. * Draw obtuse angles with a broken protractor. * Draw reflex angles with a protractor. * Draw reflex angles with a broken protractor. * Complete partially drawn polygons with given angles and side lengths. * Draw polygons with given angles and side lengths. | |