**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 monthDays 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.
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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.
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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.
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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.
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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.
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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.
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