Mathematics Teaching sequence – Year 2

Children should engage with appropriate number and practical problems **throughout each topic**.
Statements highlighted in yellow have been identified as 'ready to progress' objectives: key concepts which are essential building blocks for the next steps in learning. These objectives must be embedded across the year so that children are fluent.
Resources to support teaching of these specific objectives can be found here:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1017683/Maths_guidance_KS_1_and_2.pdf
https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/

Year 2	
Autumn Term	**Key vocab for topic**
Number and Place value (4 weeks) • Count sets of objects reliably to 100 • Read and write numerals to 100 in numerals and words • Count forwards in steps 0 of 10 from any number, forwards and backwards • Recognise the place value of each digit in a two-digit number (tens and ones) • Identify, represent, partition and estimate numbers in different ways (up to 100). • Reason about the location of any two digit number e.g. compare and order numbers from 0 to 100, identifying the next and previous multiple of 10. • Use the <> and = symbols to compare numbers up to 100 **Addition and subtraction (5 weeks – following White Rose smalls steps)** **(Include appropriate reasoning using learnt facts/methods throughout e.g. missing numbers, comparing number sentences, finding totals to solve problems)** • Secure fluency in addition and subtraction facts within 10, through continued practice. • Recall and use the addition and subtraction facts to 20 fluently (representing this is different ways for example part whole model, dienes, progressing to number sentences). • Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships. • Add and subtract across 10:	Count, forwards, backwards, numerals, digits, represent, estimate, tens, ones, place value, partition, number line, compare, order, more than, less than, equal to. Add, plus, sum, more, total, altogether, subtract, less, difference, equals, parts, whole, altogether, bonds, relationship, inverse, partition, jump, pictorial, resources, commutative, inverse, equation, calculation, biggest, smallest, equal to, more than, less than, compare.

• Use known facts within 20 to add and subtract numbers to 100 • Add numbers using concrete objects and pictorial representations, including 2 digit numbers and ones and two digit numbers and tens • Add and subtract within 100 by applying related 1-digit addition and subtraction facts: add and subtract **only ones or only tens** to/from a 2 digit number, before adding and **subtracting any 2 digit numbers**: -Add numbers mentally including 2 digit numbers and ones and two digit numbers and tens -Show that addition of two numbers can be done in any order (commutative law). -Subtract numbers using concrete objects and pictorial representations, including 2 digit numbers and ones and two digit numbers and tens -Subtract numbers mentally including 2 digit numbers and ones and two digit numbers and tens • Understand that subtraction cannot be done in any order. • Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?". • Recognise and use the inverse relationship between addition and subtractions and use this to check calculations and missing number problems (only within addition and subtraction calculations previously learnt) • Compare addition and subtraction number sentences, saying which answer is the biggest/smallest/equal to • Add numbers using concrete objects and pictorial representations, including 2, 2 digit numbers and 3, 1 digit numbers • Add numbers mentally including 2, 2 digit numbers and 3, 1 digit numbers • Subtract numbers using concrete objects and pictorial representations, including 2, 2 digit numbers and 3, 1 digit numbers • Subtract numbers mentally including 2, 2 digit numbers and 3, 1 digit numbers	Add, plus, sum, more, total, altogether, subtract, less, difference, equals, parts, whole, altogether, bonds, relationship, partition, jump, pictorial, resources, commutative, equation, calculation,
NTS week – 1 week **Multiplication (2 weeks)**	Equal groups, total, bar model, equal amounts, repeated addition, multiplication, groups of, multiple of,

• Make equal groups of 2, 5 and 10 and use these to find totals (including representing through bar models) • Recognise that combining groups of equal amounts can be done as repeated addition • Link repeated addition to multiplication number sentences and calculating the product in the 2, 5 and 10 times table • Calculate mathematical statements for multiplication statements within the 2, 5 and 10 time stables and write them using the multiplication (x) and equals (=) sign • Recall the multiplication facts for the 2, 5 and 10 times tables • Recognise odd and even numbers **Autumn term review and assess – 1-2weeks**	times, lots of, multiply, times tables, equals, odd, even, commutative
Spring Term – This term will introduce a weekly arithmetic lesson now that coverage has taken place in the Autumn term. **Statistics (1 week)** • Interpret data in a tally chart • Present data in the form of a tally chart • Interpret data simple pictograms • Present data in simple pictograms • Ask and answer simple questions by counting the number of objects in each category and sorting the category by numbers • Ask and answer simple questions about totalling and comparing categorical data	Data, interpret, present, tally chart, pictograms, categories, sorting, totalling, amount, compare, difference.
Division (2 weeks) • To know that equal sharing into groups of the same size is called division • Practically share a group of objects into smaller groups of equal size and write the corresponding division calculation • Write division number sentences using the ÷ symbol • Recall the division facts for the 2, 5 and 10 times table • Show that multiplication of 2 numbers can be done in any order and that division cannot • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods. Include relating grouping problems (where number of groups is	Divide, divided by, divide into, sharing, equal groups of, shared between, division facts, arrays, repeated addition, bar model

unknown) to multiplication equations with a missing factor, and to division. **Fractions (3 weeks)** • Identify and recognise a whole and equal parts**.** • Recognise, find, name and write a half of a length, shape, set of objects or quantity. • Recognise, find, name and write a quarter of a length, shape, set of objects or quantity. • Recognise, find, name and write a quarter of a length, shape, set of objects or quantity. • Recognise, find, name and write three quarters of a length, shape, set of objects or quantity. • Recognise that $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent. • Write simple fractions of amounts e.g ½ of 6 = 3 • Know that a unit fraction is where the numerator is 1. • Know that that a whole can be split into a different number of equal parts and associate this with recognising unit fractions E.g. If a whole is split into 3 parts, 1 part = $\frac{1}{3}$	Whole, part, denominator, numerator, half, quarter, third, three quarters, equivalent
2-3 Calculation REVIEW LESSONS (+ and -) **These lessons will recap the addition and subtraction covered in the Autumn term, particularly practising crossing a ten.** **Money (2 weeks)** • Recognise and use symbols for pounds (£) and pence (p). • Count money (coins and notes) and combine amounts to make a particular value, progressing to working with pounds and pence. • Identify and find different combinations of coins that equal the same amounts of money. • Compare amounts of money. • Identify language in word problems which require addition or subtraction of amounts eg. total cost, altogether, how much more? • Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	Amount, total, pence, pound, coin, note, total cost, altogether, compare, more than, less than, equal to, change, pay, spent
Measurement - (1 week) • to know that length and height can be measured in centimetres • To know that a ruler can be used to measure in centimetres.	Length, height, width, tall, taller, tallest, short, shorter, shortest, long longer, longest, small, ruler, accuracy, centimetres, metres, metre stick,

• Measure length of standard object in centimetres with a 30cm ruler • To know that length and height can be measured in metres when the object is longer or taller • Measure length of standard object in metres using a metre rule/trundle wheels • Compare and order heights and lengths in any direction using < > and = to record the results • Choose and use appropriate standard units to estimate and measure lengths and height • Compare and order lengths in any direction using < > and = to record the results **<u>Time (1 week) – focus on telling the time.</u>** • Tell and write the time to the hour, the half hour, including quarter past/to the hour. • Draw the hands on a clock face to show these times. • Tell and write the time to 5 minute intervals. **Spring term review and assess – 1 week**	more than, less than, equal to, unit of measurement. Hour, minutes, half hour, quarter past, half past, quarter to, 5 minute intervals, sequence, days, weeks, months, years, minute hand, hour hand, seconds.
Summer term **Properties of shape (2D and 3D) (2 weeks)** • Use precise language to identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. • Know that a line of symmetry is a line between two halves. • Know that when something is folded on its line of symmetry, the two parts match exactly; the shape is symmetrical. • Compare and sort common 2-D shapes by reasoning about similarities and differences in properties and everyday objects. • Order and arrange combinations of mathematical objects eg. 2D shapes in patterns and sequences (geometry – position and direction). **<u>3D shapes</u>** • Know that a face is a flat surface on a 3D shape. • Know that each fact is a 2D shape. • Know that an edge is where two faces on a 3D shape meet. • Identify and describe the properties of 3-D shapes including the number of edges, vertices and faces. • Compare shapes by reasoning about similarities and differences of properties; sort common 3-D shapes and everyday objects based on their properties.	Properties, 2 dimensional, sides, corners, lines of symmetry, vertical line, halves, fold, parts, match, compare 3 dimensional, faces, vertices, edges, meet, compare, sort, 2 dimensional face, sphere, cone, cube, cuboid, prism, cylinder, pyramid, patterns.

• Identify 2-D shapes on the surface of 3-D shapes, (eg: a circle on a cylinder and a triangle on a pyramid). • Make patterns with 3D shapes. **Review and assess of: (2 weeks)** - **place value** - **4 operations + - x ÷** **SATs week** **<u>Time (1 week) – focus on solving time durations/problems.</u>** • Tell and write the time to the hour, the half hour, including quarter past/to the hour. • Draw the hands on a clock face to show these times. • Tell and write the time to 5 minute intervals. • Compare and sequence intervals of time. • Know the number of minutes in an hour and number of hours in a day. **<u>Weight, volume and temperature (2 weeks)</u>** • Know that mass can be measured accurately by weighing (e.g. using balance/weighing scales). • Compare mass, using vocabulary of heaviest, lightest, heavier and lighter, greater than, less than and equals signs. • Know that a gram is a unit for measuring mass. • Know that a kilogram is a heavier unit than grams for measuring mass (and is used to measure heavier objects). • Choose and use appropriate standard units to estimate and measure mass (kg/g). • Know that volume can be measured accurately using measuring vessels/jugs, spoonfuls. • Compare volume, using vocabulary of most, least, how many 'spoonfuls', container A holds half as much as container B, greater than, less than and equals signs etc. • Know that millilitres is a unit for measuring volume. • Know that a litre is a larger unit than millilitres for measuring volume. • Choose and use appropriate standard units to estimate and measure volume (l/ml).	Hour, minutes, half hour, quarter past, half past, quarter to, 5 minute intervals, sequence, days, weeks, months, years, minute hand, hour hand, seconds. Mass, balance, weight, weighing scales, lightest, heaviest, greater than, less than equal to, grams, kilograms, unit of measurements, Volume, vessels, jugs, spoonfuls, compare, greater than, less than, equal to, millilitres, litres Thermometer, degrees, symbol, temperatures, highest, lowest, increase, decrease,

• Know that temperature can be measured accurately using a thermometer in degrees. • To know that degrees is represented by the symbol °. • Read thermometers and write temperatures in degrees. • Compare temperature, using vocabulary of highest, lowest, increase and decrease. • Choose and use appropriate standard units to estimate and measure volume (l/ml). **<u>Position and direction (1 week)</u>** • Use mathematical vocabulary to describe position and direction e.g. to the left/right of, in the middle of, in one of the etc. • Use mathematical vocabulary to describe movement e.g. forwards, backwards, left and right. • Use mathematical vocabulary to describe movement in a straight line and • Recognise that clockwise and anticlockwise describes a turn (direction of rotation). • Describe turns in terms of clockwise and anti-clockwise and turns at right angles for quarter, half and three-quarter turns. **<u>Statistics (1 week)</u>** • Interpret data in block diagrams. • Present data in block diagrams. • Ask and answer simple questions by counting the number of objects in each category and sorting the category by numbers • Ask and answer simple questions about totalling and comparing categorical data **Summer term review and assess – 1-2weeks**	Left, right, forwards, backwards, in the middle of, in front of, next to, clockwise, anti-clockwise, right angle, quarter turn, half turn, 3 quarter turn, rotate. Block diagram, axes, present, interpret, category, sort, totalling, categorical data, compare. .