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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Term** | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** |  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** |
| **Autumn 1 – 8 Weeks** | **Autumn 2 – 9 Weeks** |
|  | **Pixl Paper Testing Window (Paper 1)** |  | **Start of** | **Pixl Y2 Testing Window (2018 Paper)** | **Y2 QLA Deadline** | **Y2 IFT Reports** |  |
|  |  | **Pixl Y3-5 Testing Window** |  |  |
|  | **Y6 QLA Deadline** | **Y6 IFT Reports** |  | **Y3-5 QLA Deadline** | **Y3-5 IFT Reports** | **Pixl Y6 Testing Window (2017 Paper)** | **Y6 QLA Deadline** | **Y6 IFT Reports** |  |
| **Autumn** | **Number: Place Value****3 Weeks** **Small Steps: 12****NCETM Spine:** [**1.17**](https://www.ncetm.org.uk/resources/52219) **(TP1 hundreds, 1000, 50s, 25s)**[**1.18**](https://www.ncetm.org.uk/resources/52399) **(TP1 100s,10s,1s) (TP2 number line to 1000) (TP3 1,10,100 more or less) (TP4 compare order)** | **Number: Addition & Subtraction****5 Weeks** **Small Steps: 23****NCETM Spine:** [**1.18**](https://www.ncetm.org.uk/resources/52399) **(TP 5 add and sub multiples of 100)****1.19** [**1.17**](https://www.ncetm.org.uk/resources/52219) **(TP 3 + 4 crossing 10s and 100s)**[**1.20**](https://www.ncetm.org.uk/resources/52401) **(written addition)**[**1.21**](https://www.ncetm.org.uk/resources/52402) **(written subtraction)** | **Consolidation/****Assessment** | **Number: Multiplication & Division****4 Weeks****Small Steps: 19****NCETM Spine:** [**2.6**](https://www.ncetm.org.uk/resources/52991) **(revisit for equal groups)**[**2.8**](https://www.ncetm.org.uk/resources/53131) **(TP 1 mult and divide by 3)**[**2.7**](https://www.ncetm.org.uk/resources/53130) **(mainly TP2 mult divide by 4 incl 4x table) (TP3 & 4 mult and divide by 8 incl 8x table)** | **Number: Multiplication & Division****3 Weeks****Small Steps: 10****NCETM Spine:** [**2.6**](https://www.ncetm.org.uk/resources/52991) **TP4 related** [**2.13**](https://www.ncetm.org.uk/resources/53537) **(TP 6 related facts taken from y4)**[**2.19**](https://www.ncetm.org.uk/resources/53657) **(related facts taken from y5)**[**2.17**](https://www.ncetm.org.uk/resources/53570) **and** [**2.8**](https://www.ncetm.org.uk/resources/53131) **(TP 5 scaling)** [**2.14**](https://www.ncetm.org.uk/resources/53538) **(select from TP 1 & 2)** [**2.15**](https://www.ncetm.org.uk/resources/53539) **(TP 1)** | **Measurement: Money****1** **Week****Small Steps: 7****NCETM Spine: revisit** [**2.1**](https://www.ncetm.org.uk/resources/52889)[**1.25**](https://www.ncetm.org.uk/resources/52568) **(select appropriate)** | **Consolidation/****Assessment** |
| **Spring 1 – 6 Weeks** |  |  | **Spring 2 – 7 Weeks** |
|  | **Pixl Y1 Testing Window**  | **Y1 QLA Deadline** | **Y1 IFT Reports** |  |
|  | **Pixl Y3-5 Testing Window** |  | **Pixl Y2 Testing Window (2019 Paper)****Pixl Y6 Testing Window (2019 Paper)** | **Y2 & Y6 QLA Deadline** | **Y2 & Y6 IFT Reports** |  |
|  | **Pixl Y6 Testing Window (2018 Paper)** | **Y6 QLA Deadline** | **Y6 IFT Reports** | **Pixl Y3-5 Testing Window** | **Y3-5 QLA Deadline** | **Y3-5 IFT Reports** |  |
| **Spring** | **Consolidation** | **Statistics****2 weeks** **Small Steps: 6****NCETM Spine: N/A**  | **Measurement: Length & Perimeter****2.5 Weeks****Small Steps: 10****NCETM Spine:** [**2.16**](https://www.ncetm.org.uk/resources/53569) **(TP 1 to introduce)** | **Consolidation/****Assessment** |  | **Number: Fractions** **2 Weeks** **Small Steps: 11****NCETM Spine: revisit Key Stage 1** [**3.1**](https://www.ncetm.org.uk/resources/53333)**,** [**3.2**](https://www.ncetm.org.uk/resources/53334)[**3.6**](https://www.ncetm.org.uk/resources/53650) **(TP 3 Fractions of amounts)** | **Number: Fractions** **3 Weeks** **Small Steps: 15****NCETM Spine:** [**3.3**](https://www.ncetm.org.uk/resources/53429) **(compare andorder)** [**3.4**](https://www.ncetm.org.uk/resources/53430) **(add and sub fractions)**[**3.7**](https://www.ncetm.org.uk/resources/53651) **(select from TP 1 + 2 only)** | **Consolidation/****Assessment** |  |
|  **Summer 1 – 5 Weeks** |  |  | **Summer 2 – 5 Weeks** |
|  | **Pixl Y1 Testing Window** |  | **Pixl Y1 Testing Window** | **Y1 QLA Deadline** | **Y1 IFT Reports** |  |
|  | **Pixl Y3-5 Testing Window** |  | **Pixl Y3-5 Testing Window** | **Y3-5 QLA Deadline** | **Y3-5 IFT Reports** |
| **Summer** | **Measurement: Time** **3 Weeks****Small Steps: 12****NCETM Spine: N/A**  | **Geometry: Properties of Shape****2 Weeks****Small Steps: 9****NCETM Spine: N/A)** | **Consolidation & Problem Solving** |  | **Geometry: Properties of Shape****2 Weeks****Small Steps: 9****NCETM Spine: N/A)** | **Measurement: Mass and Capacity****3 Weeks****Small Steps: 11****NCETM Spine: N/A**  | **Consolidation/****Assessment** |

YEAR 3 – KS2 Mathematics Curriculum Map 2021-22

**Year 3 National Curriculum Objectives, White Rose Small Steps & NCTEM Spine Teaching Points**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Autumn** | **Number: Place Value – 3 Weeks** | **Number: Addition & Subtraction - 5 Weeks** | **Number: Multiplication & Division – #****4 Weeks** | **Number: Multiplication & Division –** **3 Weeks** | **Measurement: Money –** **1 Week** |
| **National Curriculum Objectives** | * count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
* recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)
* compare and order numbers up to 1,000
* identify, represent and estimate numbers using different representations
* read and write numbers up to 1,000 in numerals and in words
* solve number problems and practical problems involving these ideas
 | * add and subtract numbers mentally, including:
* a three-digit number and 1s
* a three-digit number and 10s
* a three-digit number and 100s
* add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction
* estimate the answer to a calculation and use inverse operations to check answers
* solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
 | * recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
* write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
* solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects
 | * recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
* write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods

solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects | * add and subtract amounts of money to give change, using both £ and p in practical contexts
* Pupils continue to become fluent in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. They record £ and p separately. The decimal recording of money is introduced formally in year 4.
 |
| **White Rose Small steps** | * Represent numbers to 100
* Tens and ones using addition
* Hundreds
* Represent numbers to 1,000
* 100s, 10s and 1s (1)
* 100s, 10s and 1s (2)
* Number line to 1,000
* Find 1, 10, 100 more or less than a given number
* Compare objects to 1,000
* Compare numbers to 1,000
* Order numbers
* Count in 50s
 | * Add and subtract multiples of 100
* Add and subtract 1s
* Add and subtract 3-digit and 1-digit numbers – not crossing 10
* Add a 2-digit and a 1-digit number – crossing 10
* Add a 3-digit and 1-digit numbers – crossing 10
* Subtract a 1-digit number from 2-digits – crossing 10
* Subtract a 1-digit number from 3-digits – crossing 10
* Add and subtract 3-digit and 2-digit numbers – not crossing 100
* Add 3-digit and 2-digit numbers – crossing 100
* Subtract a 2-digit number from a 3-digit number – crossing 100
* Add and subtract 100s
* Spot the pattern – making it explicit
* Add two 2-digit numbers – crossing 10 – add ones and add tens
* Subtract a 2-digit number from a 2-digit number – crossing 10
* Add and subtract a 2-digit and 3-digit number – not crossing 10 or 100
* Add and subtract a 2-digit and 3-digit numbers – crossing 10 or 100
* Subtract a 2-digit number from a 3-digit number – crossing 10 or 100
* Add two 3-digit numbers – not crossing 10 or 100
* Add two 3-digit numbers – crossing 10 or 100
* Subtract a 3-digit number from a 3-digit number – no exchange
* Subtract a 3-digit number from a 3-digit number – exchange
* Estimate answers to calculations
* Check answers
 | * Multiplication – equal groups
* Multiplication using the symbol
* Using arrays
* 2 times-table
* 5 times-table
* Make equal groups – sharing
* Make equal groups – grouping
* Divide by 2
* Divide by 5
* Divide by 10
* Multiply by 3
* Divide by 3
* The 3 times-table
* Multiply by 4
* Divide by 4
* The 4 times-table
* Multiply by 8
* Divide by 8
* The 8 times-table
 | * Consolidate 2, 4 and 8 times-tables
* Comparing statements
* Related calculations
* Multiply 2-digits by 1-digit (1)
* Multiply 2-digits by 1-digit (2)
* Divide 2-digits by 1-digit (1)
* Divide 2-digits by 1-digit (2)
* Divide 2-digits by 1-digit (3)
* Scaling
* How many ways?
 | * Count money (pence)
* Count money (pounds)
* Pounds and pence
* Convert pounds and pence
* Add money
* Subtract money
* Give change
 |
| **NCTEM Spine Teaching Points** | **1.17. – Composition and calculation: 100 and bridging 100**Equip children with a range of useful strategies for addition within ten, including adding and subtracting zero and one, commutativity, adding and subtracting two to/from odd and even numbers, and doubling and halving.**1.18 – Number: Addition & Subtraction** Explore multiples of ten, including counting in tens to 100; apply number facts within ten to addition and subtraction for multiples of ten. | **2.1 – Number: Addition & Subtraction**Explore the concept of unitising by counting in units of two, five or ten; investigate how objects can be counted efficiently by counting in units other than one; apply unitising in the context of the low-denomination coins (1 p, 2 p, 5 p and 10 p).**1.17. – Composition and calculation: 100 and bridging 100**Equip children with a range of useful strategies for addition within ten, including adding and subtracting zero and one, commutativity, adding and subtracting two to/from odd and even numbers, and doubling and halving.**1.21 - Algorithms: Column Subtraction** Introduce children to the column algorithm for subtraction calculations, applying the algorithm to a variety of partitioning, reduction and difference contexts for two-digit and three-digit numbers; explore exchange (insufficient quantity to subtract from in a column) in detail. | **2.6 – Multiplication & Division – Revisit for equal groups** Introduce the quotitive and partitive structures of division; skip count using the divisor, or use known multiplication facts, to find the quotient; generalise about the quotient when dividend = 0, dividend = divisor, or divisor = 1.**2.8 - Times-tables: 3, 6 and 9, and the relationship between them**Build up the three/six/nine times table; using different structures/interpretations of multiplication and division, solve problems related to these tables; explore connections between the three, six and nine times tables.**2.7 – Times-tables: 2, 4 and 8, and the relationship between them**Build up the four/eight times table; using different structures/interpretations of multiplication and division, solve problems related to these tables; explore connections between the two, four and eight times tables. | **2.6 – Multiplication & Division** Introduce the quotitive and partitive structures of division; skip count using the divisor, or use known multiplication facts, to find the quotient; generalise about the quotient when dividend = 0, dividend = divisor, or divisor = 1.**2.13 – Calculation: Multiplying & dividing by 10 or 100** Use place-value knowledge to develop strategies for multiplying/dividing by 10 and 100. Generalise about the product or quotient when a factor or the dividend is made 10 or 100 times bigger/smaller.**2.19 – Calculation: x/÷ decimal fractions by whole numbers** Develop strategies for multiplying and dividing decimal fractions by whole numbers, including combining known facts with unitising, multiplying and dividing by 10 and 100, and using adjusting strategies.**2.17 – Structures: Using measure and comparison to secure understanding** Build on segment 2.13 to introduce the scaling structure of multiplication and division; use known multiplication and division strategies to solve problems about scaling/comparison problems.**2.8 - Times-tables: 3, 6 and 9, and the relationship between them****Teaching point 5:** Products in the nine times table are triple the products in the three times table. Products that are in the three, six and nine times tables share the same factors**2.14 – Multiplication: partitioning leading to short multiplication** Introduce the short multiplication algorithm, using it to multiply two-/three-digit numbers by single-digit numbers; explore regrouping where necessary.**2.15 – Division: Partitioning leading to short division** Introduce the short division algorithm, using it to divide two-/three-digit numbers by single-digit numbers; explore exchange where necessary. | **1.25 – Addition & Subtraction: Money** Building on segments 1.23 and 1.24, introduce children to conventions for expressing monetary value and explore the equivalence of 100 p and £1; encourage children to select column algorithms or equivalent calculations where most appropriate. |
| **Spring** | **Statistics – 2 Weeks** | **Measurement: Length & Perimeter**  | **Number: Fractions – 2 Weeks** | **Number: Fractions – 3 Weeks** |
| **National Curriculum Objectives** | * interpret and present data using bar charts, pictograms and tables
* solve one-step and two-step questions [for example ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables
 | * measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
* measure the perimeter of simple 2-D shapes
 | * count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
* recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
* recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
* recognise and show, using diagrams, equivalent fractions with small denominators
* add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7 ]
* compare and order unit fractions, and fractions with the same denominators
* solve problems that involve all of the above
 | * count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
* recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
* recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
* recognise and show, using diagrams, equivalent fractions with small denominators
* add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7 ]
* compare and order unit fractions, and fractions with the same denominators
* solve problems that involve all of the above
 |
| **White Rose Small steps** | * Make tally charts
* Draw pictograms (2, 5 and 10)
* Interpret pictograms (2, 5 and 10)
* Pictograms
* Bar charts
* Tables
 | * Measure length
* Measure length (m)
* Equivalent lengths – m & cm
* Equivalent lengths – mm & cm
* Compare lengths
* Compare lengths
* Add lengths
* Subtract lengths
* Measure perimeter
* Calculate perimeter
 | * Make equal parts
* Recognise a half
* Find a half
* Recognise a quarter
* Find a quarter
* Recognise a third
* Find a third
* Unit fractions
* Non-unit fractions
* Equivalence of ½ and 2/4
* Count in fractions
 | * Making the whole
* Tenths
* Count in tenths
* Tenths as decimals
* Fractions on a number line
* Fractions of a set of objects (1)
* Fractions of a set of objects (2)
* Fractions of a set of objects (3)
* Equivalent fractions (1)
* Equivalent fractions (2)
* Equivalent fractions (3)
* Compare factions
* Order factions
* Add fractions
* Subtract fractions
 |
| **NCTEM Spine Teaching Points** | **N/A** | **2.16 – Area & Perimeter** Use addition and multiplication to solve problems about the perimeter of irregular and regular 2D shapes, and to find the area of rectilinear and composite rectilinear shapes; use division to solve associated inverse problems. | **Revisit Key Stage 1 Fractions Spine:** **3.1 – The part-whole relationship** Identify parts and wholes of areas, lengths and sets. Identify equal and unequal parts; make judgements about the relative size of a part to a whole. Find the whole when the size of a part and number of equal parts is known.**3.2 – Unit fractions**Learn to name and write unit fractions. Recognise and show unit fractions of areas, lengths and quantities. Relate numerators and denominators to parts and wholes; explore how the greater the denominators, the smaller the unit fraction.ad and write the fraction notation \frac{1}{2}, \frac{1}{3} and \frac{1}{4}, and relate this to a fraction of a length, shape or set of objects. Find half of numbers.**3.6 – Mixing whole number fractions** Consider multiplication of whole numbers and proper fractions as both repeated addition and scaling. Understand that multiplication of a whole number by a proper fraction results in a smaller number. | **3.3 – Non-unit fractions** Learn to name and write non-unit fractions, recognising them as multiples of unit fractions. Learn that fractions are numbers that can be positioned on a number line. Compare and order fractions with the same denominator or same numerator.**3.4 – Adding and subtracting within one whole**Learn to name and write unit fractions. Recognise and show unit fractions of areas, lengths and quantities. Relate numerators and denominators to parts and wholes; explore how the greater the denominators, the smaller the unit fraction. **3.7 – Finding equivalent fractions** Discover how equivalent fractions have the same proportional relationship between the numerator and denominator, and therefore have the same numerical value. Convert between equivalent fractions and simplify fractions. |
| **Summer** | **Measurement: Time – 3 weeks** | **Geometry: Properties of Shape – 2 Weeks**  | **Measurement: Mass & Capacity – 3 Weeks** |
| **National Curriculum Objectives** | * tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
* estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o’clock, am/pm, morning, afternoon, noon and midnight
* know the number of seconds in a minute and the number of days in each month, year and leap year
* compare durations of events [for example, to calculate the time taken by particular events or tasks]
 | * draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
* recognise angles as a property of shape or a description of a turn
* identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle
* identify horizontal and vertical lines and pairs of perpendicular and parallel lines
 | * measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
 |
| **White Rose Small steps** | * O’clock and half past
* Quarter past and quarter to
* Months and years
* Hours in a day
* Telling the time to 5 minutes
* Telling the time to the minute
* Using AM and PM
* 24-hour clock
* Finding the duration
* Comparing durations
* Start and end times
* Measuring time in seconds
 | * Turns and angles
* Right angles in shapes
* Compare angles
* Draw accurately
* Horizontal and vertical
* Parallel and perpendicular
* Recognise and describe 2-D shapes
* Recognise and describe 3-D shapes
* Make 3-D shapes
 | * Compare mass
* Measure mass (1)
* Measure mass (2)
* Compare mass
* Add and subtract mass
* Compare volume
* Measure capacity (1)
* Measure capacity (2)
* Compare capacity
* Add and subtract capacity
* Temperatures
 |
| **NCTEM Spine Teaching Points** | **N/A** | **N/A** | **N/A** |