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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** | | |