|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Term** | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** |  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** |
| **Autumn 1 – 6 Weeks & 4 days** | **Autumn 2 – 8 Weeks** |
| **Autumn** | **Number: Place Value****3 Weeks****Small Steps: 14** | **Number: Addition & Subtraction** **2 Weeks****Small Steps: 8**  | **Number: Multiplication & Division A****3 Weeks****Small Steps: 10** | **Consolidation/****Assessment** | **Number: Multiplication & Division A****3 Weeks****Small Steps: 10** | **Number: Fractions A** **4 Weeks****Small Steps: 17** | **Number: Multiplication & Division B****3 Weeks****Small Steps:**  | **Consolidation/****Assessment** |
| **Spring 1 – 6 Weeks & 3 days** |  | **Spring 2 – 5 Weeks** |
| **Spring** | **Number: Multiplication & Division B****3 Weeks****Small Steps:**  | **Number: Fractions B** **2 Weeks****Small Steps:**  | **Number: Decimals and Percentages** **3 Weeks****Small Steps:**  | **Number: Decimals and Percentages** **3 Weeks****Small Steps:**  | **Measurement: Perimeter & Area****2 Weeks** **Small Steps:**  | **Statistics****2 Weeks** **Small Steps:** |  |
|  **Summer 1 – 6 Weeks** |  | **Summer 2 – 5 Weeks & 4 days** |
| **Summer** | **Geometry: Properties of Shape****3 Weeks** **Small Steps:**  | **Geometry: Position & Direction****2 Weeks****Small Steps:** | **Number: Decimals** **3 Weeks****Small Steps:**  |  |  **Number: Decimals** **3 Weeks****Small Steps:** | **Number: Negative Numbers** **1 Week****Small Steps:** | **Measurement: Converting Units****2 Weeks** **Small Steps:** | **Measurement: Volume****1 Week****Small Steps:**  |

YEAR 5 – KS2 Mathematics Curriculum Map 2022- 23

**Year 5 National Curriculum Objectives & White Rose Small Steps**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Autumn** | **Number: Place Value – 3 Weeks** | **Number: Addition & Subtraction – 2 Weeks** | **Number: Multiplication & Division A –** **3 Weeks** | **Number: Fractions A – 4 Weeks** | **Number: Multiplication & Division B –** **3 Weeks** |
| **National Curriculum Objectives** | * + - * read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
			* count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
			* interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0
			* round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000
			* solve number problems and practical problems that involve all of the above
			* read Roman numerals to 1,000 (M) and recognise years written in Roman numerals
 | * add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
* add and subtract numbers mentally with increasingly large numbers
* use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
* solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
 | * identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers
* know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
* establish whether a number up to 100 is prime and recall prime numbers up to 19
* multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
* multiply and divide numbers mentally, drawing upon known facts
* divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
* multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
* recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)
* solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
* solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
* solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates
 | * compare and order fractions whose denominators are all multiples of the same number
* identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
* recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5]
* add and subtract fractions with the same denominator, and denominators that are multiples of the same number
* multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
* read and write decimal numbers as fractions [for example, 0.71 = 71/100]
* recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
* round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
* read, write, order and compare numbers with up to 3 decimal places
* solve problems involving number up to 3 decimal places
* recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per 100’, and write percentages as a fraction with denominator 100, and as a decimal fraction
* solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25
 | * identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers
* know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
* establish whether a number up to 100 is prime and recall prime numbers up to 19
* multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
* multiply and divide numbers mentally, drawing upon known facts
* divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
* multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
* recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)
* solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
* solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
* solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates
 |
| **White Rose Small steps** | * Step 1: Roman numerals to 1,000
* Step 2: Numbers to 10,000
* Step 3: Numbers to 100,000
* Step 4: Numbers to 1,000,000
* Step 5: Read and write numbers to 1,000,000
* Step 6: Powers of 10
* Step 7: 10/100/1,000/10,000/100,000 more or less
* Step 8: Partition numbers to 1,000,000
* Step 9: Number line to 1,000,000
* Step 10: Compare and order numbers to 100,000
* Step 11: Compare and order numbers to 1,000,000
* Step 12: Round to the nearest 10, 100 or 1,000
* Step 13: Round within 100,000
* Step 14: Round within 1,000,000
 | * Step 1: Mental strategies
* Step 2: Add whole numbers with more than four digits
* Step 3: Subtract whole numbers with more than four digits
* Step 4: Round to check answers
* Step 5: Inverse operations (addition and subtraction)
* Step 6: Multi-step addition and subtraction problems
* Step 7: Compare calculations
* Step 8: Find missing numbers
 | * Step 1: Multiples
* Step 2: Common multiples
* Step 3: Factors
* Step 4: Common factors
* Step 5: Prime numbers
* Step 6: Square numbers
* Step 7: Cube numbers
* Step 8: Multiply by 10, 100 and 1,000
* Step 9: Divide by 10, 100 and 1,000
* Step 10: Multiples of 10, 100 and 1,000
 | * Step 1: Find fractions equivalent to a unit fraction
* Step 2: Find fractions equivalent to a non-unit fraction
* Step 3: Recognise equivalent fractions
* Step 4: Convert improper fractions to mixed numbers
* Step 5: Convert mixed numbers to improper fractions
* Step 6: Compare fractions less than 1
* Step 7: Order fractions less than 1
* Step 8: Compare and order fractions greater than 1
* Step 9: Add and subtract fractions with the same denominator
* Step 10: Add fractions within 1
* Step 11: Add fractions with total greater than 1
* Step 12: Add to a mixed number
* Step 13: Add two mixed numbers
* Step 14: Subtract fractions
* Step 15: Subtract from a mixed number
* Step 16: Subtract from a mixed number – breaking the whole
* Step 17: Subtract two mixed numbers
 | * Released November 2022
 |
| **Spring** | **Number: Multiplication & Division B –** **3 Weeks** | **Number: Fractions B – 2 Weeks** | **Number: Decimals & Percentages – 3 Weeks** | **Measurement: Area & Perimeter – 2 Weeks** | **Statistics – 2 Weeks** |
| **National** **Curriculum Objectives** | * identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers
* know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
* establish whether a number up to 100 is prime and recall prime numbers up to 19
* multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
* multiply and divide numbers mentally, drawing upon known facts
* divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
* multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000
* recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)
* solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes
* solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
* solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates
 | * compare and order fractions whose denominators are all multiples of the same number
* identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
* recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5]
* add and subtract fractions with the same denominator, and denominators that are multiples of the same number
* multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
* read and write decimal numbers as fractions [for example, 0.71 = 71/100]
* recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
* round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
* read, write, order and compare numbers with up to 3 decimal places
* solve problems involving number up to 3 decimal places
* recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per 100’, and write percentages as a fraction with denominator 100, and as a decimal fraction
* solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25
 | * read and write decimal numbers as fractions [for example, 0.71 = 71/100 ]
* recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
* round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
* read, write, order and compare numbers with up to 3 decimal places
* solve problems involving number up to 3 decimal places
* recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per 100’, and write percentages as a fraction with denominator 100, and as a decimal fraction
* solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25
 | * convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]
* understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
* measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
* calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes
* estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]
* solve problems involving converting between units of time
* use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
 | * solve comparison, sum and difference problems using information presented in a line graph
* complete, read and interpret information in tables, including timetables
 |
| **White Rose Small steps** | * Released November 2022
 | * Released November 2022
 | * Released November 2022
 | * Released November 2022
 | * Released November 2022
 |
| **Summer** | **Geometry: Properties of Shape – 3 Weeks** | **Geometry: Position & Direction – 2 Weeks** | **Number: Decimals – 3 Weeks** | **Number: Negative Numbers – 1 Week** | **Measurement: Converting Units – 2 Weeks** | **Measurement: Volume – 1 Week** |
| **National Curriculum Objectives** | * identify 3-D shapes, including cubes and other cuboids, from 2-D representations
* know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
* draw given angles, and measure them in degrees (°)
* identify:
* angles at a point and 1 whole turn (total 360°)
* angles at a point on a straight line and half a turn (total 180°)
* other multiples of 90°
* use the properties of rectangles to deduce related facts and find missing lengths and angles
* distinguish between regular and irregular polygons based on reasoning about equal sides and angles
 | * identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed
 | * read and write decimal numbers as fractions [for example, 0.71 = 71/100 ]
* recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
* round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
* read, write, order and compare numbers with up to 3 decimal places
* solve problems involving number up to 3 decimal places
* recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per 100’, and write percentages as a fraction with denominator 100, and as a decimal fraction
* solve problems which require knowing percentage and decimal equivalents of 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25
 |  | * convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]
* understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
* measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
* calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes
* estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]
* solve problems involving converting between units of time
* use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
 | * convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]
* understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
* measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
* calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes
* estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]
* solve problems involving converting between units of time
* use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
 |
| **White Rose Small steps** | * Released March 2023
 | * Released March 2023
 | * Released March 2023
 | * Released March 2023
 | * Released March 2023
 |