

## New

Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry (position and	Geometry (Properties of	Fractions	General/problem solving.
				direction)	shape)		
Number	Number line	Odd, even	Full, half, empty	Over, under, underneath,	Sort	Whole	Listen, join in
One, two, three to twenty and beyond.	Add, more, plus, make, sum,	Double, halve	Holds	above, below, top, bottom, side	Cube, cuboid, pyramid.	Equal	Say, think, imagine, remember
None	total, altogether	Share, share equally	Container	On in outside	sphere, cone,	One half	Start from
None	Double	Group in pairs	Weigh, weighs,	inside	triangle, square		Start Irom
Count on/up/to/from/down	Half, halve	Equal groups of	balance	In front, behind	Shape		Look at, point to
Before, after	Equals, is the	Divide	Heavy, heavier, heaviest, light,	Front, back	Flat. curved.		Put
Mara Jaca manu	same (including		lighter, lightest	Pafara aftar	straight, round		What comes next?
few, fewer, fewest, smaller, smallest	How many more		Scales	Beside, next to	Corner		Find, use, make, build
	to make? How		Time	Middle	Face, side		Tell me describe
Equal to, the same as	then,,,? How		Days of the week:	Middle	Make, build,		pick out, talk about,
Odd, even	much more is?		Monday, Tuesday etc.	Up, down, forwards,	draw		explain, show me
Digit	Subtract take		Seasons: Spring	backwards. Sideways			Read, write
Digit	away, minus.		Summer, Autumn,	oluciays			Tick, draw a line,
Numeral			winter	Close, far			ring
Compare			Days, week, month, year, weekend	Through			Cost
Order			Birthday, holiday	Towards, away from			Count, work out
Size			Morning afternoon	Side roll turn			Number line,
Value			evening, night				number square,
Between, halfway between			Bedtime,				number cards

# Year 1 Pathway Autumn



Number and Place value	Addition and Subtraction	Multiplication and division	Measure	Position and direction	Shape	Fractions	Problem solving
Value Zero, one, two, three to twenty and beyond None Count on/up/to/down/ From Before/less Many, fewer, least, smallest, greatest, Equal to, same as Odd, even Units, ones, tens Compare	Subtraction Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Equals Difference between, How many more make? How much more is? Subtract, take away, minus How many fewer is?	division Odd, even How many times Lots of, groups of Multiply, multiple of Repeated addition, Array, row Double, halve Share, share equally Equal groups of Divide, divided by, left over	Full, half, empty Holds Container Weigh, balances Heavy, heavier, heaviest Light, lighter, lightest Days of the week Seasons Day, week ,month, year, weekend Morning, afternoon, evening	direction Over, under, underneath, above, below, top, bottom On, in, outside, inside Around, in front, behind Front, back, before, after Beside, next to, opposite, apart Left, right, up, down, forwards, backwards Along, through Slide, roll, turn,	Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, round Hollow, solid Corner Face, side, edge	Whole Equal Parts Four equal parts One half, two halves A quarter Two quarters	Say Think Start from, start with Look at, point to, place Arrange, rearrange What comes next? Carry on, continue, repeat Find, choose, collect Shade, colour, record Describe Explain
Value	How much less is!		past				



Array, row Temperature Double, halve

degrees

Holds

Container

heaviest

Weigh, balances

Heavy, heavier,

Share, share equally

Equal groups of

Divide, divided by,

left over

Equal to, same as

Units, ones, tens

Odd. even

Compare

Value

Difference between,

How much more is ...?

Subtract, take away,

How many fewer

How much less is...?

How many more

make...?

minus

Mirror line, reflection.

**Right angle** 

Pattern, repeating pattern,

### Describe Explain

Prove it

#### Block 1 Number

## Year 3 Pathway Autumn

Place Value. Step 1 Represent numbers to 100 Step 2 Partition numbers to 100 Step 3 Number line to 100 Step 4 Hundreds Step 5 Represent numbers to 1,000 Step 6 Partition numbers to 1,000 Step 7 Flexible partitioning of numbers to 1,000 Step 8 Hundreds, tens and ones Small steps Year 3 | Autumn term | Block 1 – Place value © White Rose Maths 2022 Step 9 Find 1, 10 or 100 more or less Step 10 Number line to 1,000 Step 11 Estimate on a number line to 1,000 Step 12 Compare numbers to 1,000 Step 13 Order numbers to 1,000 Step 14 Count in 50



Identify, represent and estimate numbers using different representations

Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones)

Read and write numbers up to 1,000 in numerals and words Count from zero in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number



#### **Block 2 Number** Addition and Subtraction. Step 1 Apply number bonds within 10 Step 2 Add and subtract 1s Step 3 Add and subtract 10s Step 4 Add and subtract 100s Step 5 Spot the pattern Step 6 Add 1s across a 10 Step 7 Add 10s across a 100 Step 8 Subtract 1s across a10 Step 9 Subtract 10s across a 100 Step 10 Make connections Step 11 Add two numbers (no exchange) Step 12 Subtract two numbers (no exchange) Step 13 Add two numbers (across a 10) Step 14 Add two numbers (across a 100) Step 15 Subtract two numbers (across a 10) Step 16 Subtract two numbers (across a 100)

- Step 17 Add 2-digit and 3-digit numbers
- Step 18 Subtract a 2-digit number from a 3-digit number
- Step 19 Complements to 100
- Step 20 Estimate answers
- Step 21 Inverse operations
- Step 22 Make decision

#### Addition and Subtraction

Add and subtract numbers mentally, including:

+

- a 3-digit number and ones
- a 3-digit number and tens
- a 3-digit number and hundreds

Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Estimate the answer to a calculation and use inverse operations to check answers

<u>Multiplication and division.</u> Step 1 Multiplication – equal groups

Block 3 Number

Step 2 Use arrays Step 3 Multiples of 2 Step 4 Multiples of 5 and 10 Step 5 Sharing and grouping Step 6 Multiply by 3 Step 7 Divide by 3 Step 8 The 3 times-table Step 9 Multiply by 4 Step 10 Divide by 4 Step 11 The 4 times-table Step 12 Multiply by 8 Step 13 Divide by 8 Step 14 The 8 times-table Step 15 The 2, 4 and 8 times-table

### Multiplication and Division A

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods

Show that multiplication of two numbers can be done in any order (commutative) and division on one number by another cannot (Y2) Count in steps of 2, 3 and 5 from 0, and in 10s from any number,

forward and backward (Y2)

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Number and Place value	Addition and Subtraction	Multiplication and division	Measure	Position and direction	Shape	Fractions	Data/Statistics
Numbers to 1000 Partition Recombine Hundred more, less Equal to, same as Odd, even Compare Value	Column addition, Column subtraction, Inverse Equals Difference between, How many more make? How much more is? Subtract, take away, minus How many fewer is? How much less is?	Product Multiples of Scale up Multiply, multiple of Repeated addition, Array, row Share, share equally Equal groups of Divide, divided by, left over	Twelve/twenty four hour clock Am, pm Roman numerals I to XIII	Greater, less than Ninety degrees Orientation, Same orientation Different orientation	Horizontal, Vertical Perpendicular lines Parallel lines	Numerator Denominator Unit fraction, non unit fraction Compare and order Tenths	Chart Bar chart Frequency table Carroll diagram Venn diagram Axis Diagram



## Year 5 Pathway Autumn

### Block 1 Number

- Place Value 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 10/100/1,000/100,000 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

Place Value



Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

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

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 involving the above

#### Block 4 Number

#### **Fractions**

- 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

## Fractions A

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

Compare and order fractions whose denominators are all multiples of the same number

Add and subtract fractions with the same denominator, and denominators that are multiples of the same number

Block 2 Number

Addition and Subtraction

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

#### Addition and Subtraction



Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction) Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Add and subtract numbers mentally with increasingly large numbers

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy



Multiplication and Division. 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 Small steps Year 5 | Autumn term | Block 3 – Multiplication and division A © White Rose Maths 2022 Step 9 Divide by 10, 100 and 1,000 Step 10 Multiples of 10, 100 and 1,000

Multiplication and Division A



•

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

Recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000  $\,$ 

Identifu multiples and factors, includina findina all factor pairs of a Multiply and divide numbers mentally, drawing upon known facts

Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes

Number and Place value	Multiplication and division	Measure	Position and direction	Shape	Fractions
Powers of ten	Efficient written method Factor pairs Composite, prime, prime factor, square numbers, cubed numbers Formal written method	Volume Imperial measures/units Metric measures/units	Reflex angles Dimensions	Regular and irregular polygons	Proper fraction, improper fractions, mixed numbers Percentage Half Quarter Fifths Ratio and proportion

e whole

3





Common factors

Common multiples

Circumference

Radius

Diameter

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Use estimation to check answers to calculations and determine, in the

context of a problem, an appropriate degree of accuracy Identify common factors, common multiples and prime numbers

Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written method of long multiplication Perform mental calculations, including with mixed operations and

Divide numbers up to four digits by a 2-digit number using the formal written method of short division where appropriate, interpreting

Use their knowledge of the order of operations to carry out

calculations involving the four operations

Step 1 Equivalent fractions and simplifying Step 2 Equivalent fractions on a number line Step 3 Compare and order (denominator) Step 4 Compare and order (numerator) Step 5 Add and subtract simple fractions Step 6 Add and subtract any two fractions

Use common factors to simplify fractions; use common multiples to

Compare and order fractions, including fractions > 1

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Solve addition and subtraction multi-step problems in contexts,

deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication

Construct

Substitute

Variables

Symbol Known values

- Step 7 Multiply up to a 4-digit number by a 2-digit
- Step 8 Solve problems with multiplication
- Step 12 Long division with remainders
- Step 13 Solve problems with division
- Step 14 Solve multi-step problems
- Step 16 Mental calculations and estimation

