# Mathletics White Rose Maths Aligned Skill Quests \& Activities 



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November 2023
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## Year 4

## Yearly Overview

|  | Week | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | $\begin{gathered} \text { Week } \\ 8 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Week } \\ 9 \end{gathered}$ | Week <br> 10 | Week <br> 11 | Week 12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \frac{5}{E} \\ & \frac{1}{5} \\ & \frac{5}{4} \end{aligned}$ | Number: <br> Place value |  |  |  | Number: Addition and subtraction |  |  |  | Number: Multiplication and division |  |  |  |
| $\begin{aligned} & \text { 인 } \\ & \text { 등 } \end{aligned}$ | Number: <br> Multiplication and division B |  |  | Measurement: <br> Length and perimeter |  | Number: Fractions |  |  |  | Number: <br> Decimals A |  |  |
| $\begin{aligned} & \text { む } \\ & \text { E } \\ & \text { ज } \end{aligned}$ | Number: Decimals B |  | Measurement: Money |  | Measurement: Time |  |  | Geometry: Shape |  |  | Geometry: <br> Position <br> and direction |  |

## Autumn

## Number: Place value

## Curriculum Links

- Read and write numbers up to 1,000 in numerals and words (Y3)
- Identify, represent and estimate numbers using different representations
- Recognise the place value of each digit in a 3 -digit number (hundreds, tens, ones) (Y3)
- Count in multiples of $6,7,9,25$ and 1,000
- Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones)
- Find 1,000 more or less than a given number
- Order and compare numbers beyond 1,000
- Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value
- Round any number to the nearest 10 , 100 or 1,000

| Skill Quests | Skills |
| :---: | :---: |
| A1 Place value review | Represent numbers to 1,000 |
|  | Partition numbers to 1,000 |
|  | Number line to 1,000 |
|  | Thousands |
| A1 Place value | Represent numbers to 10,000 |
|  | Partition numbers to 10,000 |
|  | Flexible partitioning to 10,000 |
|  | Find 1, 10, 100, 1,000 more or less |
|  | Working with a number line to 10,000 |
| A1 Comparing \& ordering numbers | Compare numbers to 10,000 |
|  | Order numbers to 10,000 |
| A1 Roman numerals | Roman numerals |
| A1 Rounding numbers | Round to the nearest 10 |
|  | Round to the nearest 100 |
|  | Round to the nearest 1,000 |
|  | Round to the nearest 10,100 or 1,000 |


| Course Topic | Activities Title |
| :---: | :---: |
| Autumn: Number (place value) | Place Value to Thousands |
|  | Place Value 3 |
|  | Partition and Rename 3 |
|  | Expanding Numbers |
|  | Which Is Greater? |
|  | Which Is Less? |
|  | Put in Order 1 |
|  | Missing Numbers 1 |
|  | Integers on a Number Line |
|  | Converting to Roman Numerals to 100 |
|  | Nearest 10? |
|  | Nearest 100? |
|  | Nearest 1000? |
|  | Rounding Numbers |

## Number: Addition and Subtraction

## Curriculum Links

- Add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate
- Solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why
- Estimate and use inverse operations to check answers to a calculation


## Small Steps

Step 1 Add and subtract $1 \mathrm{~s}, 10 \mathrm{~s}, 100$ s and 1,000s
Step 2 Add up to two 4-digit numbers - no exchange
Step 3 Add two 4-digit numbers - one exchange
Step 4 Add two 4-digit numbers - more than one exchange
Step 5 Subtract two 4-digit numbers - no exchange
Step 6 Subtract two 4-digit numbers - one exchange
Step 7 Subtract two 4-digit numbers - more than one exchange
Step 8 Efficient subtraction
Step 9 Estimate answers
Step 10 Checking strategies

Skill Quests
A2 Addition \& subtraction review A2 Addition

A2 Subtraction


Course Topic
Autumn: Number (addition and subtraction)

Skills
Add \& subtract 1s, 10s, 100s \& 1,000s

Add up to two 4-digit numbers - no exchange
Add two 4-digit numbers - one exchange
Add two 4-digit numbers - more than one exchange
Subtract two 4-digit numbers - no exchange
Subtract two 4-digit numbers - one exchange
Subtract two 4-digit numbers with exchanges
Efficient subtraction
Estimate answers
Checking strategies

Activities Title
Add 3-Digit Numbers: Exchanging (UK)
Strategies for Column Addition (UK)
3-Digit Differences
Bump Add and Subtract

|  | Adding Colossal Columns (UK) |
| :--- | :--- |
|  | Estimate Sums |
|  | Split Add and Subtract |
|  | Jump Add and Subtract |
|  | Subtracting Colossal Columns (UK) |
|  | Estimate Differences |

## Measurement: Area

## Curriculum Links

- Find the area of rectilinear shapes by counting squares


## Small Steps

Step 1 What is area?
Step 2 Count squares
Step 3 Make shapes
Step 4 Compare areas

| Skill Quests |  |
| :--- | :--- |
| A3 Area | What is area? |
|  | Count squares |
|  | Make shapes |
|  | Compare area |
| Course Topic |  |
|  | Area of Shapes |
|  | Equal Areas |
|  | Biggest Shape |

## Number: Multiplication and division A

## Curriculum Links

- Recall multiplication and division facts for multiplication tables up to $12 \times 12$
- Recognise and use factor pairs and commutativity in mental calculations
- Count in multiples of $6,7,9,25$ and 1,000
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1 ; dividing by 1 ; multiplying together three numbers


## Small Steps

## Step 1 Multiples of 3

Step 2 Multiply and divide by 6 Step 36 times-table and division facts
Step 4 Multiply and divide by 9
Step 59 times-table and division facts
Step 6 The 3, 6 and 9 times-tables
Step 7 Multiply and divide by 7
Step 87 times-table and division facts
Step 911 times-table and division facts
Step 1012 times-table and division facts
Step 11 Multiply by 1 and 0
Step 12 Divide a number by 1 and itself
Step 13 Multiply three numbers

## Skills

A4 Multiplication facts for 3,
6 \& 9
Multiples of 3
Multiply \& divide by 6
6 times-table \& division facts
Multiply \& divide by 9
9 times-table \& division facts
The 3, 6 \& 9 times-tables
A4 Multiplication facts for 7,
$11 \& 12$

7 times-table \& division facts
11 times-table \& division facts
12 times-table \& division facts

| A4 Multiplication \& division properties | Multiply by 1 \& 0 |
| :---: | :---: |
|  | Divide by 1 \& itself |
|  | Multiply 3 numbers |
| Course Topic | Activities Title |
| Autumn: Number (multiplication \& division A) | Grouping in Threes |
|  | Counting up in 6s |
|  | Groups of Six |
|  | Dividing Sixes |
|  | Groups of Nine |
|  | Dividing Nines |
|  | Counting up in 7s |
|  | Groups of Seven |
|  | Dividing Sevens |
|  | Times Tables |
|  | Multiply 3 single-digit numbers |

## Spring

## Number: Multiplication and division B

## Curriculum Links

- Recognise and use factor pairs and commutativity in mental calculations
- Recall multiplication and division facts for multiplication tables up to $12 \times 12$
- Multiply and divide whole numbers and those involving decimals by 10,100 and 1,000 (Y5)
- Solve problems involving multiplying and adding, including using the distributive law to multiply 2 -digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to $m$ objects
- Multiply 2 -digit and 3 -digit numbers by a 1-digit number using formal written layout
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1 ; dividing by 1 ; multiplying together 3 numbers

Small Steps
Step 1 Factor pairs
Step 2 Use factor pairs
Step 3 Multiply by 10
Step 4 Multiply by 100
Step 5 Divide by 10
Step 6 Divide by 100
Step 7 Related facts - multiplication and division
Step 8 Informal written methods for multiplication
Step 9 Multiply a 2-digit number by a 1digit number
Step 10 Multiply a 3-digit number by a 1digit number
Step 11 Divide a 2-digit number by a 1digit number (1)
Step 12 Divide a 2-digit number by a 1digit number (2)
Step 13 Divide a 3-digit number by a 1digit number
Step 14 Correspondence problems Step 15 Efficient multiplication

| Skill Quests | Skills |
| :---: | :---: |
| Sp1 Factor pairs | Factor pairs |
|  | Use factor pairs |
| Sp1 Multiply \& divide by 10 \& 100 | Multiply by 10 |
|  | Multiply by 100 |
|  | Divide by 10 |
|  | Divide by 100 |
| Sp1 Related facts | Related facts - multiplication \& division |
| Sp1 Multiplication | Informal written methods |
|  | Multiply a 2-digit by a 1-digit number |
|  | Multiply a 3-digit by a 1-digit number |
| Sp1 Division | Divide a 2-digit by a 1-digit number (1) |
|  | Divide a 2-digit by a 1-digit number (2) |
|  | Divide a 3-digit by a 1 -digit number |
| Sp1 Solving multiplication problems | Correspondence problems |
|  | Efficient multiplication |
| Course Topic | Activities Title |
| Spring: Number (multiplication \& division B) | Factors |
|  | Find the Factor |
|  | Multiply Multiples of 10 |
|  | Mental Methods Multiplication 1 |
|  | Mental Methods Division 1 |
|  | Multiplication Turn-Abouts |

## Measurement: Length and perimeter

## Curriculum Links

- Convert between different units of measure [for example, kilometre to metre; hour to minute]
- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

Small Steps
Step 1 Measure in kilometres and metres
Step 2 Equivalent lengths (kilometres and metres)
Step 3 Perimeter on a grid
Step 4 Perimeter of a rectangle
Step 5 Perimeter of rectilinear shapes
Step 6 Find missing lengths in rectilinear shapes
Step 7 Calculate perimeter of rectilinear shapes
Step 8 Perimeter of regular polygons
Step 9 Perimeter of polygons

| Skill Quests | Skills |
| :---: | :---: |
| Sp2 Length | Measure in kilometres \& metres |
|  | Equivalent lengths (kilometres \& metres) |
| Sp2 Perimeter | Perimeter on a grid |
|  | Perimeter of a rectangle |
|  | Working with perimeter of rectilinear shapes |
|  | Perimeter of regular polygons |
|  | Perimeter of polygons |
| Course Topic | Activities Title |
| Spring: Measurement (length and perimeter) | Measuring Length |
|  | Converting cm and mm |
|  | Centimetres and Metres |
|  | Kilometre Conversions |
|  | Metres and Kilometres |
|  | Operations with Length |
|  | Perimeter of Shapes |
|  | Calculate Perimeter of Squares and Rectangles |

## Number: Fractions

## Curriculum Links

- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators (Y3)
- Recognise and show, using diagrams, families of common equivalent fractions
- Add and subtract fractions with the same denominator


## Small Steps

Step 1 Understand the whole Step 2 Count beyond 1
Step 3 Partition a mixed number
Step 4 Number lines with mixed numbers
Step 5 Compare and order mixed numbers
Step 6 Understand improper fractions
Step 7 Convert mixed numbers to improper fractions
Step 8 Convert improper fractions to mixed numbers
Step 9 Equivalent fractions on a number line
Step 10 Equivalent fraction families
Step 11 Add two or more fractions
Step 12 Add fractions and mixed numbers
Step 13 Subtract two fractions

|  | Step 14 Subtract from whole amounts |
| :---: | :---: |
|  | Step 15 Subtract from mixed numbers |
| Skill Quests | Skills |
| Sp3 Mixed numbers \& | Understand the whole |
| wholes | Count beyond 1 |
|  | Partition a mixed number |
|  | Working with mixed numbers |
| Sp3 Improper fractions | Understand improper fractions |
|  | Convert mixed numbers \& improper fractions |
| Sp3 Fractions: equivalence | Equivalent fractions on a number line |
|  | Equivalent fraction families |
| Sp3 Fractions: Add \& | Add two or more fractions |
| subtract | Add fractions \& mixed numbers |
|  | Subtract two fractions |
|  | Subtract from whole amounts |
|  | Subtract from mixed numbers |
| Course Topic | Activities Title |
| Spring: Number (fractions) | Model Fractions |
|  | Identifying Fractions on a Number Line |
|  | Identifying Fractions Beyond 1 |
|  | What Mixed Number Is Shaded? |
|  | Mixed and Improper Fractions on a Number Line |
|  | Mixed to Improper Fractions |
|  | Improper to Mixed |
|  | Improper Fraction to Mixed Numeral |
|  | Equivalent Fractions |
|  | What fraction Is Shaded 1 |
|  | Equivalent Fraction Wall 2 |
|  | Equivalent Fractions |
|  | Add Like Fractions |
|  | Subtract Like Fractions |

## Number: Decimals A

## Curriculum Links

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 (Y3)
- Recognise and write decimal equivalents of any number of tenths or hundredths
- Compare numbers with the same number of decimal places up to 2 decimal places
- Find the effect of dividing a 1- or 2digit number by 10 and 100 , identifying the value of the digits in


## Small Steps

Step 1 Tenths as fractions
Step 2 Tenths as decimals
Step 3 Tenths on a place value chart
Step 4 Tenths on a number line
Step 5 Divide a 1-digit number by 10
Step 6 Divide a 2-digit number by 10
Step 7 Hundredths as fractions
Step 8 Hundredths as decimals
Step 9 Hundredths on a place value chart
Step 10 Divide a 1- or 2-digit number by 100


## Summer

## Number: Decimals B

## Curriculum Links

- Recognise and write decimal equivalents of any number of tenths or hundredths
- Solve simple measure and money problems involving fractions and decimals to 2 decimal places
- Compare numbers with the same number of decimal places up to 2 decimal places
- Round decimals with 1 decimal place to the nearest whole number
- Recognise and write decimal equivalents to $1 / 4,1 / 2$ and $3 / 4$
Skill Quests
Skills


## Sum1 Making a whole with

 decimalsSum1 Working with
decimals

| Make a whole with tenths |
| :--- |
| Make a whole with hundredths |
| Partition decimals |
| Flexibly partition decimals |
| Compare \& order decimals |
| Round to the nearest whole number |
| Halves \& quarters as decimals |
| Activities Title |
| Comparing Decimals 1 |
| Decimal Order 1 |
| Decimal Complements |

## Measurement: Money

## Curriculum Links

- Estimate, compare and calculate different measures, including money in pounds and pence



## Skill Quests

## Small Steps

Step 1 Write money using decimals
Step 2 Convert between pounds and pence Step 3 Compare amounts of money Step 4 Estimate with money Step 5 Calculate with money Step 6 Solve problems with money

## Skills

Sum2 Money
Convert between pounds \& pence
Compare amounts of money
Estimate with money
Calculate \& solve problems with money
Course Topic $\quad$ Activities Title
Summer: Measurement (money)

## Small Steps

Step 1 Make a whole with tenths Step 2 Make a whole with hundredths Step 3 Partition decimals
Step 4 Flexibly partition decimals
Step 5 Compare decimals
Step 6 Order decimals
Step 7 Round to the nearest whole number
Step 8 Halves and quarters as decimals

Course Topic
Summer: Number (decimals
B)

Comparing Decimals 1
Decimal Order 1
Decimal Complements

| Measurement: Money |  |
| :--- | :--- |
| Curriculum Links |  |

## Measurement: Time

## Curriculum Links

- Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days
- Read, write and convert time between analogue and digital 12 - and 24 -hour clocks
Skill Quests


## Skills

Sum3 Time
Years, months, weeks \& days
Hours, minutes \& seconds
Convert between analogue \& digital times
Convert to \& from the 24-hour clock

## Activities Title

Time Conversions: Whole Numbers 2
What is the Time?
24 Hour Time

## Small Steps

Step 1 Years, months, weeks and days
Step 2 Hours, minutes and seconds
Step 3 Convert between analogue and digital times
Step 4 Convert to the 24 -hour clock
Step 5 Convert from the 24 -hour clock

## Geometry: Shape

## Curriculum Links

- Recognise angles as a property of shape or a description of a turn (Y3)
- Identify acute and obtuse angles and compare and order angles up to two right angles by size
- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- Identify lines of symmetry in 2-D shapes presented in different orientations
- Complete a simple symmetric figure with respect to a specific line of symmetry

| Skill Quests | Skills |
| :---: | :---: |
| Sum4 Angles | Understand angles as turns |
|  | Identify angles |
|  | Compare \& order angles |
| Sum4 Classifying shapes | Triangles |
|  | Quadrilaterals |
|  | Polygons |
| Sum4 Symmetry | Lines of symmetry |
|  | Symmetric figures |


| Course Topic | Activities Title |
| :--- | :--- |
| Summer: Geometry (shape) | What Type of Angle? |
|  | What Type of Angle 2? |
|  | Comparing Angles |
|  | Triangle Tasters |
|  | Symmetry or Not? |
|  | Collect the Polygons |
|  | Collect the Shapes |

## Statistics

## Curriculum Links

- Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

| Skill Quests |  |
| :--- | :--- |
| Sum5 Statistics | Interpret charts - tables |
|  | Interpret charts - pictograms |
|  | Interpret charts - bar charts |
|  | Solving problems using charts |
|  | Comparison, sum \& difference |
|  | Interpret \& draw line graphs |
| Course Topic |  |
| Summer: Statistics | Interpreting Tables Title |
|  | Bar Chart |
|  | Line Graphs: Explanation |

## Geometry: Position and Direction

## Curriculum Links

Describe positions on a 2-D grid as coordinates in the first quadrant

Plot specified points and draw sides to complete a given polygon

Describe movements between positions as translations of a given unit to the left/right and up/down

Skill Quests
Sum6 Position \& direction

## Small Steps

Step 1 Interpret charts
Step 2 Comparison, sum and difference
Step 3 Interpret line graphs
Step 4 Draw line graphs

| Geometry: Position and Direction |  |  |
| :---: | :---: | :---: |
| Curriculum Links |  | Small Steps |
| Describe positions on a 2-D grid as coordinates in the first quadrant |  | Step 1 Describe position using coordinates |
|  |  | Step 2 Plot coordinates |
| Plot specified points and draw sides to complete a given polygon |  | Step 3 Draw 2-D shapes on a grid |
|  |  | Step 4 Translate on a grid |
|  |  | Step 5 Describe translation on a grid |
| Describe movements between positions as translations of a given unit to the left/right and up/down |  |  |
| Skill Quests |  | Skills |
| Sum6 Position \& direction | Describe position using coordinates |  |
|  | Plot coordinates |  |
|  | Draw 2-D shapes on a grid |  |
|  | Translate on a grid |  |
|  | Describe translation on a grid |  |

Course Topic

## Activities Title

|  |  |
| :--- | :--- |
| Summer: Geometry <br> (position and direction) | Coordinate Meeting Place |
|  | Coordinate Graphs: 1st Quadrant |

## Problem solving

| Course Topic | Activities Title |
| :--- | :--- |
| Problem solving | Magic Symbols 1 |
|  | Bar Model Problems 2 |
|  | Find the Missing Number 1 |
|  | I am Thinking of a Number! |
|  | Fit the Conditions 1 |

## Year 5

## Yearly Overview

|  | Wee k 1 | $\begin{gathered} \text { Wee } \\ \text { k } 2 \end{gathered}$ | $\begin{gathered} \text { Wee } \\ \text { k } 3 \end{gathered}$ | $\begin{gathered} \text { Wee } \\ \text { k } 4 \end{gathered}$ | $\begin{gathered} \text { Wee } \\ \mathrm{k} 5 \end{gathered}$ | $\begin{aligned} & \hline \text { Wee } \\ & \mathrm{k} 6 \end{aligned}$ | $\begin{aligned} & \text { Wee } \\ & \mathrm{k} 7 \end{aligned}$ | $\begin{aligned} & \hline \text { Wee } \\ & \text { k } 8 \end{aligned}$ | Week $9$ | $\begin{gathered} \text { Week } \\ 10 \end{gathered}$ | Week 11 | Week 12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \frac{5}{E} \\ \frac{1}{2} \\ \frac{7}{4} \end{gathered}$ | Number: <br> Place value |  |  | Number: <br> Addition <br> and <br> subtraction |  | Number: Multiplication and division A |  |  | Number: <br> Fractions A |  |  |  |
| $\begin{aligned} & \text { 음 } \\ & \text { 듬 } \end{aligned}$ | Number: <br> Multiplication and division B |  |  | Number: <br> Fractions B |  | Number: Decimals and percentages |  |  | Measurement: Perimeter and area |  | Statistics |  |
|  | Geometry: Shape |  |  | Geometry: <br> Position and direction |  | Number: Decimals |  |  |  | Measurement <br> Converting units |  |  |

## Autumn

## Number: Place value

## Curriculum Links

- 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 $1,000,000$
- Solve number problems and practical problems involving the above
- Round any number up to $1,000,000$ to the nearest $10,100,1,000,10,000$ and 100,000 Skill Quests


## Skills

| A1 Roman numerals |
| :--- |
| A1 Place value |
|  |
| A1 Comparing \& ordering <br> numbers |

A1 Rounding numbers
Roman numerals to 1,000
Numbers to 10,000
Numbers to 100,000
Numbers to $1,000,000$
Read \& write numbers to $1,000,000$
Powers of 10
10/100/1,000/10,000/100,000 more or less
Partition numbers to $1,000,000$
Compare \& order numbers to 100,000
Compare \& order numbers to $1,000,000$
Round to nearest 10,100 \& 1,000
Round within 100,000
Round within 1,000,000

| Course Topic |  |
| :--- | :--- |
| Autumn: Number (place <br> value) | Activities Title |
|  | Converting to Roman Numerals to 1000 |
|  | Converting from Roman Numerals to 1000 |
|  | Place Value to Millions |
|  | Expanded Notation |
|  | Partition and rename 3 |
|  | Numbers in Words |
|  | Numbers from Words to Digits 1 |
|  | Numbers from Words to Digits 2 |
|  | Nearest 10? |
|  | Nearest 100? |
|  | Nearest 1000? |
|  | Rounding Numbers |

## Number: Addition \& Subtraction

## Curriculum Links

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


## Small Steps

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

Skill Quests
A2 Addition \& subtraction strategies
A2 Formal algorithm
A2 Rounding \& checking answers
A2 Addition \& subtraction problems

## Course Topic

Autumn: Number (addition and subtraction)

Skills
Mental strategies
Add whole numbers with more than four digits Subtract whole numbers with more than four digits Round to check answers
Inverse operations (addition \& subtraction)
Multi-step addition \& subtraction problems
Compare calculations
Find missing numbers

## Activities Title

| Jump Add and Subtract |
| :--- |
| Split Add and Subtract |
| Compensation - Add |
| Compensation - Subtract |
| Add 3-Digit Numbers: Exchanging (UK) |
| Adding Colossal Columns (UK) |
| Add Multi-Digit Numbers 2 (UK) |
| Subtracting Colossal Columns (UK) |
| Estimate Sums |
| Estimate Differences |
| Estimation: Add and Subtract |

## Number: Multiplication \& Division A

## Curriculum Links

- Identify multiples and factors, including fnding all factor pairs of a number, and common factors of two numbers


## Small Steps

## Step 1 Multiples

Step 2 Common multiples
Step 3 Factors
Step 4 Common factors

|  |  | Step 5 Prime numbers |
| :---: | :---: | :---: |
| - Solve problems invo |  | Step 6 Square numbers |
| multiplication and di | sion, including | Step 7 Cube numbers |
| using their knowled | of factors and | Step 8 Multiply by 10, 100 and 1,000 |
| multiples, squares | dubes | Step 9 Divide by 10, 100 and 1,000 |
| - Know and use the v numbers, prime fact (non-prime) number | cabulary of prime s and composite | Step 10 Multiples of 10,100 and 1,000 |
| - Establish whether a is prime and recall p to 19 | umber up to 100 me numbers up |  |
| - Recognise and use and cube numbers, for squared (2) and | uare numbers nd the notation bed (3) |  |
| - Multiply and divide and those involving 100 and 1,000 | hole numbers cimals by 10 , |  |
| - Multiply and divide drawing upon know | mbers mentally, facts |  |
| Skill Quests |  | Skills |
| A3 Multiples \& factors | Multiples |  |
|  | Common multip |  |
|  | Factors |  |
|  | Common factors |  |
| A3 Prime, square \& cube | Prime numbers |  |
| numbers | Square number |  |
|  | Cube numbers |  |
| A3 Multiply \& divide by 10, | Multiply by 10, | O \& 1,000 |
| 100 \& 1000 . | Divide by 10, 10 | \& 1,000 |
|  | Multiples of 10, | 00 \& 1,000 |
| Course Topic |  | Activities Title |
| Autumn: Number | Multiples |  |
| (multiplication and division | Lowest Commo | Multiple |
| A) | Factors |  |
|  | Highest Commo | Factor |
|  | Square Roots |  |
|  | Prime or Compo | ste? |
|  | Multiplying by 1 | , 100, 1000 |
|  | Dividing Whole | Numbers by 10, 100, 1000 |
|  | Mental Methods | Multiplication 1 |

## Number: Fractions A

## Curriculum Links

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

## Small Steps

Step 1 Find fractions equivalent to a unit fraction
Step 2 Find fractions equivalent to a non-unit fraction

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

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number

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

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

| Skill Quests | Skills |
| :---: | :---: |
| A4 Fractions A | Find equivalent proper fractions |
|  | Recognise equivalent fractions |
|  | Convert improper fractions to mixed numbers |
|  | Convert mixed numbers to improper fractions |
|  | Compare \& order fractions less than 1 |
|  | Compare \& order fractions greater than 1 |
| A4 Adding \& subtraction fractions | Add \& subtract fractions with the same denominator |
|  | Add fractions within 1 |
|  | Add fractions with total greater than 1 |
|  | Add to a mixed number |
|  | Add two mixed numbers |
|  | Subtract fractions |
|  | Subtract from a mixed number |
|  | Subtract two mixed numbers |
| Course Topic | Activities Title |
| Autumn: Number (fractions A) | Equivalent Fraction Wall 2 |
|  | Equivalent Fractions |
|  | Identifying Fractions Beyond 1 |
|  | What Mixed Number Is Shaded? |
|  | Mixed and Improper Fractions on a Number Line |
|  | Counting with Fractions on a Number Line |
|  | Common Denominator |
|  | Add: No Common Denominator |
|  | Subtract: No Common Denominator |
|  | One Take Fraction |
|  | Add Unlike Mixed Numbers |
|  | Subtract Unlike Mixed Numbers |

## Spring

| Number: Multiplication \& division B |  |  |
| :---: | :---: | :---: |
| Curriculum Links |  | Small Steps |
| - Multiply numbers up to four digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers |  | Step 1 Multiply up to a 4-digit number by a 1digit number |
|  |  | Step 2 Multiply a 2-digit number by a 2-digit number (area model) |
| - Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context |  | Step 3 Multiply a 2-digit number by a 2-digit number |
|  |  | Step 4 Multiply a 3-digit number by a 2-digit number |
|  |  | Step 5 Multiply a 4-digit number by a 2-digit number |
| - Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes |  | Step 6 Solve problems with multiplication |
|  |  | Step 7 Short division |
|  |  | Step 8 Divide a 4-digit number by a 1-digit number |
|  |  | Step 9 Divide with remainders |
|  |  | Step 10 Efficient division |
|  |  | Step 11 Solve problems with multiplication and division |
| Skill Quests |  | Skills |
| Sp1 Multiplication B | Multiply up to a | -digit by a 1-digit number |
|  | Multiply 2-digit | y a 2-digit number (area model) |
|  | Multiply a 2-digit | by a 2-digit number |
|  | Multiply a 3-digit | by a 2-digit number |
|  | Multiply a 4-digit | by a 2-digit number |
|  | Solve problems | with multiplication |
| Sp1 Division B | Short division |  |
|  | Divide a 4-digit | y a 1-digit number |
|  | Divide with rem | inders |
|  | Efficient division |  |
| Sp1 Multiplication \& division problems | Solve problems | ith multiplication \& division |
| Course Topic |  | Activities Title |
| Spring: Number (multiplication and division B) | Contracted Multip | plication |
|  | Multiply 2 Digits | Area Model |
|  | Multiply: 1-Digit | Number |
|  | Grid Methods 1 |  |
|  | Grid Methods 2 |  |
|  | Grid Methods 3 |  |
|  | Divide: 1-Digit D | visor 2 |
|  | Remainders by | ables |

## Number: Fractions B

## Curriculum Links

- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams


## Small Steps

Step 1 Multiply a unit fraction by an integer Step 2 Multiply a non-unit fraction by an integer

- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number (Y4)
Skill Quests
Skills

| Skill Quests |  |
| :--- | :--- |
| Skills |  |
| Sp2 Multiplying fractions | Multiply a unit fraction by an integer |
|  | Multiply a non-unit fraction by an integer |
|  | Multiply a mixed number by an integer |
|  | Calculate a fraction of a quantity |
|  | Fraction of an amount |
|  | Find the whole |
|  | Using fractions as operators |
| B) |  |

## Number: Decimals and percentages

## Curriculum Links

- Read, write, order and compare numbers with up to 3 decimal places
- Read and write decimal numbers as fractions
- Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- 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
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Solve problems involving numbers up to 3 decimal places
- Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place

Step 3 Multiply a mixed number by an integer
Step 4 Calculate a fraction of a quantity
Step 5 Fraction of an amount
Step 6 Find the whole
Step 7 Use fractions as operators

## Small Steps

Step 1 Decimals up to 2 decimal places
Step 2 Equivalent fractions and decimals (tenths)
Step 3 Equivalent fractions and decimals (hundredths)
Step 4 Equivalent fractions and decimals
Step 5 Thousandths as fractions
Step 6 Thousandths as decimals
Step 7 Thousandths on a place value chart
Step 8 Order and compare decimals (same number of decimal places)
Step 9 Order and compare any decimals with up to 3 decimal places
Step 10 Round to the nearest whole number
Step 11 Round to 1 decimal place
Step 12 Understand percentages
Step 13 Percentages as fractions
Step 14 Percentages as decimals
Step 15 Equivalent fractions, decimals and percentages

- 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
Skill Quests
Skills

| Sp3 Decimals \& fractions | Decimals up to 2 decimal places |
| :---: | :---: |
|  | Equivalent fractions \& decimals (tenths) |
|  | Equivalent fractions \& decimals (hundredths) |
|  | Equivalent fractions \& decimals |
| Sp3 Thousandths | Working with thousandths |
|  | Order \& compare decimals up to 3 decimal places |
| Sp3 Rounding decimals | Round to the nearest whole number |
|  | Round to 1 decimal place |
| Sp3 Percentages | Understand percentages |
|  | Percentages as fractions |
|  | Percentages as decimals |
|  | Equivalent fractions, decimals \& percentages |
| Course Topic | Activities Title |
| Spring: Number (decimals and percentages) | Convert Decimals to Fractions 2 |
|  | Decimals to Fractions 2 |
|  | Decimal Order 1 |
|  | Decimals on a Number Line |
|  | Comparing Decimals |
|  | Rounding Decimals 1 |
|  | Modelling Percentages |

## Measurement: Perimeter \& Area

## Curriculum Links

- 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
Skill Quests
Skills

| Skill Quests |  |  |  |
| :--- | :--- | :---: | :---: |
| Sp4 Perimeter | Perimeter of rectangles |  |  |
|  | Perimeter of rectilinear shapes |  |  |
|  | Perimeter of polygons |  |  |
|  | Area of rectangles |  |  |
|  | Area of compound shapes |  |  |
|  | Estimate area |  |  |
| Course Topic |  |  | Spring: Measurement |
| (perimeter and area) |  |  |  |$\quad$| Perimeter of Shapes |
| :--- |


|  | Perimeter Detectives 1 |
| :--- | :--- |
|  | Area: Squares and Rectangles |
|  | Area: Compound Figures |

## Statistics

## Curriculum Links

- Solve comparison, sum and difference problems using information presented in a line graph
- Complete, read and interpret information in tables, including timetables
Skill Quests

Sp5 Statistics
Draw line graphs
Read \& interpret line graphs
Read \& interpret tables
Two-way tables
Read \& interpret timetables
Course Topic
Spring: Statistics
Skills

Line Graphs: Explanation
Interpreting Data Tables
Using Timetables

## Small Steps

Step 1 Draw line graphs
Step 2 Read and interpret line graphs
Step 3 Read and interpret tables
Step 4 Two-way tables
Step 5 Read and interpret timetables

## Summer

## Geometry: Shape

## Curriculum Links

- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- Draw given angles, and measure them in degrees ( ${ }^{\circ}$ )
- Identify angles at a point and 1 whole turn (total $360^{\circ}$ )
- Identify: angles at a point and 1 whole turn (total $360^{\circ}$ ); angles at a point on a straight line and half a turn (total $180^{\circ}$ )
- 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 3-D shapes, including cubes and other cuboids, from 2-D representations


## Small Steps

## Step 1 Understand and use degrees

Step 2 Classify angles
Step 3 Estimate angles
Step 4 Measure angles up to $180^{\circ}$
Step 5 Draw lines and angles accurately
Step 6 Calculate angles around a point
Step 7 Calculate angles on a straight line
Step 8 Lengths and angles in shapes
Step 9 Regular and irregular polygons
Step 10 3-D shapes

Skills

| Skill Quests | Skills |
| :---: | :---: |
| Sum1 Angles | Understand \& use degrees |
|  | Classify angles |
|  | Estimate \& measure angles up to $180^{\circ}$ |
|  | Draw lines \& angles accurately |
|  | Calculate angles around a point |
|  | Calculating angles on a straight line |
|  | Lengths \& angles in shapes |
| Sum1 Polygons | Regular \& irregular polygons |
| Sum1 3-D shapes | 3-D shapes |
| Course Topic | Activities Title |
| Summer: Geometry (shape) | What Type of Angle? |
|  | Classifying Angles |
|  | Estimating Angles |
|  | Angles in a Revolution |
|  | Angles of revolution: Unknown Values |
|  | How Many Faces? |
|  | How many Edges? |
|  | How many Vertices? |
|  | Faces, Edges, and Vertices 1 |

## Geometry: Position and direction

## Curriculum Links $\quad$ Small Steps

- 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

Step 1 Read and plot coordinates
Step 2 Problem solving with coordinates
Step 3 Translation
Step 4 Translation with coordinates
Step 5 Lines of symmetry
Step 6 Reflection in horizontal and vertical lines
Skill Quests
Sum2 Position \& direction

Course Topic
Summer: Geometry (position and direction)

Skills
Read \& plot coordinates
Problem solving with coordinates
Translation
Translation with coordinates
Lines of symmetry
Reflection in horizontal \& vertical lines

## Activities Title

Coordinate Graphs: 1st Quadrant
Transformations
Symmetry or Not?
Lines of Symmetry
Transformations: Coordinate Plane

## Number: Decimals

## Curriculum Links

- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Solve problems involving number up to 3 decimal places
- Read, write, order and compare numbers with up to 3 decimal places
- Multiply and divide whole numbers and those involving decimals by 10 , 100 and 1,000


## Small Steps

Step 1 Use known facts to add and subtract decimals within 1
Step 2 Complements to 1
Step 3 Add and subtract decimals across 1
Step 4 Add decimals with the same number of decimal places
Step 5 Subtract decimals with the same number of decimal places
Step 6 Add decimals with different numbers of decimal places
Step 7 Subtract decimals with different numbers of decimal places
Step 8 Efficient strategies for adding and subtracting decimals
Step 9 Decimal sequences
Step 10 Multiply by 10,100 and 1,000
Step 11 Divide by 10, 100 and 1,000
Step 12 Multiply and divide decimals missing values

Skill Quests Skills

Sum3 Add \& subtract decimals

Use known facts add \& subtract decimals within 1 Complements to 1
Add \& subtract decimals across 1
Add decimals with same number of decimal places
Subtract decimals same number of decimal places
Add decimals different number of decimal places

|  | Subtract decimals in different place values |
| :---: | :---: |
|  | Efficient strategies to add \& subtract decimals |
|  | Decimal sequences |
| Sum3 Multiply \& divide decimals | Multiply by 10, 100 \& 1,000 |
|  | Divide by 10, 100 \& 1,000 |
|  | Multiply \& divide decimals - missing values |
| Course Topic | Activities Title |
| Summer: Number (decimals) | Decimal Complements |
|  | Subtract Decimals 1 |
|  | Add Decimals 1 |
|  | Adding Decimals |
|  | Subtract Decimals 2 |
|  | Subtracting Decimals |
|  | Adding and Subtracting Decimals |
|  | Multiply Decimals: 10, 100, 1000 |
|  | Divide Decimals: 10, 100, 1000 |

## Number: Negative numbers

## Curriculum Links <br> Small Steps

- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

Skill Quests

- Interpret negative numbers in context,
count forwards and backwards with
positive and negative whole numbers,
including through zero

Step 1 Understand negative numbers
Step 2 Count through zero in 1 s Step 3 Count through zero in multiples Step 4 Compare and order negative numbers Step 5 Find the difference

| Skill Quests | Step 5 Find the difference |
| :---: | :--- |
| Sum4 Negative numbers | Working with negative numbers |
| Course Topic | Activities Title |
| Summer: <br> numbers) | Integers on a Number Line |
|  | Comparing Integers |
|  | Ordering Integers (Number Line) |

## Measurement: Converting units

## Curriculum Links

- 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
- Solve problems involving converting between units of time
Skill Quests
Skills
Sum5 Converting units

Small Steps
Step 1 Kilograms and kilometres
Step 2 Millimetres and millilitres
Step 3 Convert units of length
Step 4 Convert between metric and imperial units
Step 5 Convert units of time
Step 6 Calculate with timetables

|  | Convert between imperial \& metric units |
| :---: | :---: |
|  | Convert units of time |
|  | Calculate with timetables |
| Course Topic | Activities Title |
| Summer: Measurement (converting units) | Grams and Kilograms |
|  | Metres and Kilometres |
|  | Grams and Milligrams |
|  | Millilitres and Litres |
|  | Converting Units of Length |
|  | Converting cm and mm |
|  | Centimetres and Metres |
|  | Ounces and Pounds |
|  | Inches, Feet, Yards |
|  | Cups, Pints, Quarts, Gallons |
|  | Time Conversions: Simple Fractions |
|  | Time Zones |

## Measurement: Volume

## Curriculum Links <br> Small Steps

- Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity
- Estimate volume and capacity [for example, using water]
Skill Quests
Sum6 Volume

Course Topic
Summer: Measurement (volume)

Step 1 Cubic centimetres
Step 2 Compare volume
Step 3 Estimate volume
Step 4 Estimate capacity

| Course Topic |  |
| :--- | :--- |
| Problem solving |  |
|  | Pyramid Puzzles 2 |
|  | I am Thinking of a Number! |
|  | Missing Numbers: $\times$ and $\div$ facts |
|  | Find the Missing Number 2 |

## Year 6

## Yearly Overview

|  | Week <br> 1 | $\begin{array}{\|c} \hline \text { Week } \\ 2 \\ \hline \end{array}$ | Week <br> 3 | $\begin{gathered} \text { Week } \\ 4 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Week } \\ 5 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Week } \\ 6 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Week } \\ 7 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Week } \\ 8 \end{gathered}$ | $\begin{gathered} \text { Week } \\ 9 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Week } \\ 10 \\ \hline \end{gathered}$ | Week <br> 11 | Week <br> 12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { 气 } \\ & \frac{1}{7} \\ & \frac{1}{3} \end{aligned}$ | Number: <br> Place value |  | Number: <br> Addition, subtraction, multiplication and division |  |  |  |  | Number: <br> Fractions A |  | Number: <br> Fractions B |  |  |
| $\begin{aligned} & \text { 은 } \\ & \text { ஸे } \\ & \text { जे } \end{aligned}$ | Num Ratio |  | Number: Algebra |  | Numb <br> Decim |  | Numb <br> Fract <br> decim <br> and <br> perce | ns, ls <br> tages | Meas <br> Area, perim volum | rement: <br> ter and | Sta |  |
|  | Geometry: Shapes |  |  |  | Themed projects, consolidation and problem solving |  |  |  |  |  |  |  |

## Autumn

## Number: Place value

## Curriculum Links

- Read, write, order and compare numbers up to $10,000,000$ and determine the value of each digit
- Solve number and practical problems that involve the above
- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across zero


## Small Steps

Step 1 Numbers to $1,000,000$
Step 2 Numbers to $10,000,000$
Step 3 Read and write numbers to $10,000,000$
Step 4 Powers of 10
Step 5 Number line to $10,000,000$
Step 6 Compare and order any integers
Step 7 Round any integer
Step 8 Negative numbers

Skill Quests
A1 Place value

Read \& write numbers to $10,000,000$
Powers of 10
Number line to $10,000,000$
Compare \& order any integers
Round any integers
Negative numbers

## Activities Title

| Place Value to Millions |
| :--- |
| Place Value - Millions |
| Numbers from Words to Digits 2 |
| Expanded Notation |
| Comparing Numbers |
| Rounding Numbers |
| Nearest 1000? |
| Nearest Whole Number |
| Comparing Integers ( $\langle,=,>$ ) |
| Integers on a Number Line |
| Ordering Integers (Number Line) |

## Number: Addition, subtraction, multiplication and division

## Curriculum Links

- Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why
- Solve problems involving addition, subtraction, multiplication and division
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy


## Small Steps

Step 1 Add and subtract integers
Step 2 Common factors
Step 3 Common multiples
Step 4 Rules of divisibility
Step 5 Primes to 100
Step 6 Square and cube numbers
Step 7 Multiply up to a 4-digit number by a 2 digit number
Step 8 Solve problems with multiplication Step 9 Short division
Step 10 Division using factors Step 11 Introduction to long division

|  |  | Step 12 Long division with remainders |
| :---: | :---: | :---: |
| - Identify common fact | rs, common | Step 13 Solve problems with division |
| multiples and prim | umbers | Step 14 Solve multi-step problems |
|  |  | Step 15 Order of operations |
| - Multiply multi-digit | mbers up to four | Step 16 Mental calculations and estimation |
| digits by a 2-digit wh the formal written m multiplication | le number using hod of long | Step 17 Reason from known facts |
| - Perform mental calcu with mixed operation numbers | ations, including and large |  |
| - Divide numbers up to 2-digit number using written method of sh where appropriate, in remainders accordin | four digits by a he formal rt division erpreting to the context |  |
| - Use their knowledge operations to carry o involving the four op | f the order of calculations rations |  |
| - Use estimation to ch calculations and deter context of a problem degree of accuracy | k answers to mine, in the an appropriate |  |
| Skill Quests |  | Skills |
| A2 Addition \& subtraction | Add \& subtract i | tegers |
| A2 Factors \& multiples | Common factors |  |
|  | Common multipl |  |
| A2 Divisibility | Rules of divisibil |  |
| A2 Prime, square \& cube | Primes to 100 |  |
| numbers | Square \& cube n | mbers |
| A2 Multiplication | Multiply up to a | -digit number by 2-digit number |
|  | Solve problems | ith multiplication |
| A2 Division | Short division |  |
|  | Division using fa | tors |
|  | Introduction to lon | ng division |
|  | Long division wi | remainders |
|  | Solve problems | ith division |
| A2 Multiplication \& division | Solve multi-step | problems |
| problems | Order of operatio |  |
| A2 Multiplication \& division | Mental calculatio | ns \& estimation |
|  | Reason from know | wn facts |
| Course Topic |  | Activities Title |
| Autumn: Number (addition, | Add Multi-Digit | umbers 2 (UK) |
| subtraction, multiplication | Estimation: Add | and Subtract |
| and division) | Subtracting Colo | ssal Columns (UK) |
|  | Lowest Common | Multiple |


|  | Greatest Common Factor |
| :---: | :---: |
|  | Divisibility Tests |
|  | Prime or Composite? |
|  | Square Roots |
|  | Mental Methods Multiplication 1 |
|  | Mental Methods Division 1 |
|  | Estimation: Multiply and Divide |
|  | Contracted Multiplication |
|  | Long Multiplication |
|  | Short Division |
|  | Remainders by Tables |
|  | Divide: 1-Digit Divisor 1 |
|  | Divide: 1-Digit Divisor 2 |
|  | Long Division 1 |
|  | Long Division |
|  | Order of Operations 1 (BIDMAS) |

## Number: Fractions A

## Curriculum Links

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Compare and order fractions, including fractions > 1
- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- Identify common factors, common multiples and prime numbers
- Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why

| Skill Quests | Skills |
| :---: | :---: |
| A3 Equivalent fractions | Equivalent fractions \& simplifying |
|  | Equivalent fractions on a number line |
| A3 Compare \& order fractions | Compare \& order (denominator) |
|  | Compare \& order (numerator) |
| A3 Add \& subtract fractions | Add \& subtract simple fractions |
|  | Add \& subtract any two fractions |
|  | Add mixed numbers |
|  | Subtract mixed numbers |
| A3 Fraction problems | Multi-step problems |
| Course Topic | Activities Title |
| Autumn: Number (fractions A) | Simplifying Fractions |
|  | Identifying fractions beyond 1 |


|  | Equivalent Fractions on a Number Line 2 |
| :---: | :---: |
|  | Comparing Fractions 2 |
|  | Ordering Fractions 1 |
|  | Counting with Fractions on a Number Line |
|  | Fraction Wall Labelling 1 |
|  | Add Unlike Fractions |
|  | Add Like Mixed Numbers |
|  | Add Unlike Mixed Numbers |
|  | Subtract Unlike Fractions |
|  | Subtract Unlike Mixed Numbers |
|  | No Common Denominator |
|  | Mixed Numerals |

## Number: Fractions B

## Curriculum Links

- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5)
- Multiply simple pairs of proper fractions, writing the answer in its simplest form
- Divide proper fractions by whole numbers
- Solve problems involving addition, subtraction, multiplication and division
- Associate a fraction with division and calculate decimal fraction equivalents


## Small Steps

Step 1 Multiply fractions by integers
Step 2 Multiply fractions by fractions
Step 3 Divide a fraction by an integer
Step 4 Divide any fraction by an integer
Step 5 Mixed questions with fractions
Step 6 Fraction of an amount
Step 7 Fraction of an amount - find the whole

Skill Quests
A4 Multiply \& divide fractions

Multiply fractions by integers
Multiply fractions by fractions Divide a fraction by an integer
Mixed questions with fractions
Fraction of an amount
Fraction of an amount - find the whole
Course Topic
Autumn: Number (fractions
B)

Skills

| Activities Title |
| :--- |
| Model Fractions to Multiply |
| Multiply Fraction by Whole Number |
| Multiply: Whole Number and Fraction |
| Multiply Fraction by Fraction |
| Multiply Two Fractions 1 |
| Divide Fractions Visual Model |
| Fraction of an Amount |
| Fraction Word Problems |

## Measurement: Converting units

## Curriculum Links

Small Steps

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate
- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places

Skill Quests
A5 Converting units
Metric measures
Convert metric measures
Calculate with metric measures
Miles \& kilometres
Imperial measures

## Course Topic

Autumn: Measurement (converting units)

Skills
Step 1 Metric measures
Step 2 Convert metric measures
Step 3 Calculate with metric measures
Step 4 Miles and kilometres
Step 5 Imperial measures

## Activities Title

| Which Unit of Measurement? |
| :--- |
| Converting cm and mm |
| Centimetres and Metres |
| Metres and Kilometres |
| Converting Units of Length |
| Grams and Kilograms |
| Converting Units of Mass |
| Millilitres and Litres |
| Time Conversions: Simple Fractions |

## Spring

| Number: Ratio |  |  |
| :--- | :--- | :---: |
| Curriculum Links | Small Steps |  |
| - Solve problems involving the relative |  |  |
| sizes of two quantities where missing |  |  |
| values can be found by using integer |  |  |
| multiplication and division facts |  |  |$\quad$ Step 1 Add or multiply?

## Number: Algebra

## Curriculum Links

- Use simple formulae
- Generate and describe linear number sequences
- Find pairs of numbers that satisfy an equation with two unknowns
- Enumerate possibilities of combinations of two variables
- Express missing number problems algebraically Skill Quests

Skills

| Skill Quests |  |
| :--- | :--- |
| Sp2 Function machines | 1-step function machines |
|  | 2-step function machines |
|  | Form expressions |
|  | Substitution |
|  | Formulae |


|  | Form equations |
| :---: | :---: |
|  | Solve 1-step equations |
|  | Solve 2-step equations |
|  | Find pairs of values |
|  | Solve problems with two unknowns |
| Course Topic | Activities Title |
| Spring: Algebra | Writing Algebraic Expressions |
|  | Simple Substitution 1 |
|  | I am Thinking of a Number! |
|  | Missing Numbers: Variables |
|  | Solve Equations: Add, Subtract 1 |
|  | Solve Equations: Multiply, Divide 1 |
|  | Write an Equation: Word Problems |
|  | Function Rules and Tables |

## Number: Decimals

## Curriculum Links

- Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10,100 and 1,000 giving answers up to 3 decimal places
- Solve problems which require answers to be rounded to specified degrees of accuracy
- Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why
- Multiply 1-digit numbers with up to 2 decimal places by whole numbers
- Use written division methods in cases where the answer has up to 2 decimal places
- Solve problems involving addition, subtraction, multiplication and division


## Skill Quests

Skills
Sp3 Place value decimals
Place value within 1
Round decimals
Sp3 Add \& subtract decimals
Sp3 Multiply \& divide decimals

## Small Steps

Step 1 Place value within 1
Step 2 Place value - integers and decimals
Step 3 Round decimals
Step 4 Add and subtract decimals
Step 5 Multiply by 10, 100 and 1,000
Step 6 Divide by 10,100 and 1,000
Step 7 Multiply decimals by integers
Step 8 Divide decimals by integers
Step 9 Multiply and divide decimals in context

| Add \& subtract decimals |
| :--- |
| Multiply by $10,100 \& 1,000$ |
| Divide by $10,100 \& 1,000$ |
| Multiply decimals by integers |
| Divide decimals by integers |
| Multiply \& divide decimals in context |


| Course Topic | Activities Title |
| :--- | :--- |
| Spring: Number (decimals) | Decimals from Words to Digits 2 |
|  | Decimal Place Value |
|  | Rounding Decimals 1 |
|  | Adding and Subtracting Decimals |
|  | Multiply Decimals: $10,100,1000$ |
|  | Divide Decimals: $10,100,1000$ |
|  | Decimal by Whole Number |

## Number: Fractions, decimals and percentages

## Curriculum Links

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
- Compare and order fractions, including fractions >1
- Solve problems involving the calculation of percentages and the use of percentages for comparison


## Small Steps

Step 1 Decimal and fraction equivalents
Step 2 Fractions as division
Step 3 Understand percentages
Step 4 Fractions to percentages
Step 5 Equivalent fractions, decimals and percentages
Step 6 Order fractions, decimals and percentages
Step 7 Percentage of an amount - one step
Step 8 Percentage of an amount - multi-step
Step 9 Percentages - missing values

Skill Quests
Sp4 Fractions \& decimals

|  | Fraction as division |
| :--- | :--- |


| Sp4 Percentages | Understand percentages |
| :--- | :--- |

Fractions to percentages
Equivalent fractions, decimals \& percentages
Order fractions, decimals \& percentages
Percentage of an amount
Percentages - missing values

## Course Topic

Spring: Number (fractions, decimals and percentages)

Activities Title
Decimals to Fractions 1
Fraction to Terminating Decimal
Fractions to Decimals
Fractions to Decimals 2
Fractions to Percentages (Non-Calculator)
Common Fractions as Percentages
Match Decimals and Percentages
Calculating Percentages 1
Percentage Word Problems

| Measurement: Area, perimeter \& volume |  |  |
| :---: | :---: | :---: |
| Curriculum Links |  | Small Steps |
| - Recognise that shapes with the same areas can have different perimeters and vice versa |  | Step 1 Shapes - same area |
|  |  | Step 2 Area and perimeter |
|  |  | Step 3 Area of a triangle - counting squares |
| - Recognise when it is possible to use formulae for area and volume of shapes |  | Step 4 Area of a right-angled triangle |
|  |  | Step 5 Area of any triangle |
|  |  | Step 6 Area of a parallelogram |
|  |  | Step 7 Volume - counting cubes |
| - Calculate the area of parallelograms and triangles |  | Step 8 Volume of a cuboid |
| - Recognise when it is possible to use formulae for area and volume of shapes |  |  |
| - Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units |  |  |
| Skill Quests |  | Skills |
| Sp5 Area \& perimeter | Shapes - same area |  |
|  | Area \& perimeter |  |
|  | Area of a triangle - counting squares |  |
|  | Area of a right-angled triangle |  |
|  | Area of any triangle |  |
|  | Area of a parallelogram |  |
| Sp5 Volume | Volume - counting cubes |  |
|  | Volume of a cuboid |  |
| Course Topic | Activities Title |  |
| Spring: Measurement (area, perimeter and volume) | Perimeter |  |
|  | Area: Squares and Rectangles |  |
|  | Area of Triangles |  |
|  | Area: Parallelograms (Metric) |  |
|  | Volume of Solids and Prisms - $1 \mathrm{~cm}^{3}$ blocks |  |
|  | Volume: Rectangular Prisms 1 |  |
|  |  |  |
| Statistics |  |  |
| Curriculum Links |  | Small Steps |
| - Interpret and construct pie charts and line graphs and use these to solve problems |  | Step 1 Line graphs |
|  |  | Step 2 Dual bar charts |
|  |  | Step 3 Read and interpret pie charts |
| - Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4) <br> - Calculate and interpret the mean as an average |  | Step 4 Pie charts with percentages |
|  |  | Step 5 Draw pie charts |
|  |  | Step 6 The mean |
|  |  |  |


| Skill Quests | Skills |
| :---: | :---: |
| Sp6 Statistics | Line graphs |
|  | Dual bar charts |
|  | Read \& interpret pie charts |
|  | Pie charts with percentages |
|  | Draw pie charts |
|  | The mean |
| Course Topic | Activities Title |
| Spring: Statistics | Line Graphs: Explanation |
|  | Identify Parts of Circles 1 |
|  | Pie Charts |
|  | Pie Chart Calculations |
|  | The Mean |
|  | Mean |

## Summer

## Geometry: Shape

## Curriculum Links

- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
- Draw given angles, and measure them in degrees ( ${ }^{\circ}$ ) (Y5)
- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5)
- Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- Draw 2-D shapes using given dimensions and angles
- Recognise, describe and build simple 3-D shapes, including making nets

| Skill Quests | Skills |
| :---: | :---: |
| Sum1 Angles | Measure \& classify angles |
|  | Calculate angles |
|  | Vertically opposite angles |
|  | Angles in a triangle |
|  | Angles in quadrilaterals |
|  | Angles in polygons |
| Sum1 Shapes | Circles |
|  | Draw shapes accurately |
|  | Nets of 3-D shapes |
| Course Topic | Activities Title |
| Summer: Geometry (shape) | Measuring Angles |
|  | Angles of Revolution: Unknown Values |
|  | Vertically Opposite Angles: Unknown Values |
|  | Angle Measures in a Triangle |
|  | Interior Angles |
|  | Nets |

## Geometry: Position \& direction

## Curriculum Links

- Describe positions on the full coordinate grid (all four quadrants)
- Draw and translate simple shapes on the coordinate plane, and reflect them in the axes Skill Quests


## Skills

| Skill Quests | Skills |
| :--- | :--- |
| Sum2 Position \& direction | The first quadrant |
|  | Read \& plot points in four quadrants |
|  | Solve problems with coordinates |
|  | Translations |
|  | Reflections |
| Course Topic |  |
| Summer: Geometry <br> (position and direction) | Coordinate Graphs: 1st Quadrant |
|  | Coordinate Graphs |
|  | Transformations |
|  | Transformations: Coordinate Plane |
|  | Rotations: Coordinate Plane |
|  | Horizontal and Vertical Change |

Problem solving
Course Topic Activities Title
Problem solving
Money Problems: Four Operations with Pounds
Divisibility Tests (2, 5, 10)
More Fraction Problems
Partition Puzzles 2
Magic Symbols 2
Perimeter Detectives 2

## Mathletics

For more information about Mathletics, contact our friendly team.
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3P Learning

