Maths (White Rose) – Progression of Knowledge

The maths gems of fluency, reasoning and problem solving will be visited within each small step wherever possible.

The Key Knowledge for maths is situated approximately where it is expected to be taught. Teachers should use their professional experience to make any necessary changes in terms of when, where and how each small step of knowledge is taught.

	EYFS
Autumn	**Just Like Me** I know how to find and match objects that are the same. I know that collections can be sorted into sets based on attributes such as colour, size or shape. I know that the same collection of objects can be sorted in different ways. I know how to come up with my own criteria for sorting. I know that the sets I have created can be compared and ordered. I know that when making comparisons a set can have more items, fewer items or the same number of items as another set. I know that objects can be compared and ordered based on their size. I can use language such as big and little, tall and short to describe a range of objects in the classroom (some children may use the language tall, long and short). I can copy, continue and create my own simple repeating patterns. **It's Me 123** I can identify representations of 1,2 and 3. I can subitise and count how many and make my own collections of 1,2 and 3. I can match number names I say to numerals and quantities. I know how to count up to 3 objects in different arrangements by touching each object as I count and recognise that the final number I say names the quantity of the set. I know how to use my own mark-making to represent 1,2 and 3. I know that as I count, each number is one more than the number before. I know that as I count back, each number is one less than the previous number. I know that all numbers are made up of smaller numbers. I know the different compositions of 2 and 3 (eg. 3 can be composed of 1,1 and 1 or 1 and 2 or 2 and 1) I can share what I notice. I know that circles have one curved side. I know that triangles have 3 straight sides. I can recognise a circle and a triangle. I can build my own circles and triangles. **Light and Dark** I can count on and back from 4. I can count or subitise sets of 4 objects to find how many and can make my own collection of objects. I can match the number names to numerals and quantities and can say which sets have more or fewer items. I can continue to learn that the final number I say names the quantity of the set. I can use my own mark-making to represent numbers to 4. I can subitise up to 5 items. I can count forwards and backwards accurately using the counting principles. I can represent up to 5 objects on a fives frame and understand that if the frame is full then there are 5. I can continue to count, subitise and compare as I explore one more and one less. I can predict how many there will be if I add one more or take one away. I can see the link between counting forwards and the one more pattern and counting back and the one less pattern. I know that squares and rectangles have 4 straight sides and 4 corners. I can recognise these shapes on everyday items in the classroom and outside. I can build m own squares and rectangles. I can recognise squares and rectangles in a variety of different sizes and orientations. I can spot other shapes with 4 sides. I can talk about night and day and order key events in my daily life. I can use appropriate language to describe when events happen (eg. day, night, morning, afternoon, before, after, today, tomorrow). I know how to measure time in simple ways.
Spring	**Alive in 5** I know the number zero and that the numeral 0 can be used to represent this idea.

	I know that when comparing numbers, one quantity can be more than, the same as, or fewer than another quantity. I know how to use a range of representations to support my understanding. I know how to compare quantities using a variety of objects and representations. I can make comparisons in different contexts as I play. I know that all numbers are made up of smaller numbers. I know the different compositions of 4 and 5. I can subitise 4 and 5. I notice how numbers can be made up of 2 parts or more than 2 parts. I know how to make direct comparisons of weight-saying which one feels heaviest and checking using scales. I can use the language of heavy, heavier than, heaviest, light, lighter than, lightest to compare items. I know that larger items are not always heavy, and small items are not always light. I know how to show nearly full, half full and nearly empty. I know how to explore capacity using different materials such as water, sand, rice and beads. I know how to make direct comparisons by pouring from one container to another. I can use the language of tall, thin, narrow, wide and shallow. I know how to make indirect comparisons by counting how many pots it takes to fill one container. **Growing 6,7,8** I can apply the counting principles when counting to 6,7 and 8. I can represent 6,7 and 8 in different ways and can count out the required number of objects from a larger group. I can conceptually subitise and see how the numbers are made up of smaller numbers (eg. I know it is 8 because I see 4 and 4). I can order and compare my representations, noticing the one more/one less pattern as they count on and back to 8. I know how to match to find and make pairs. I know that a pair is 2. I know that some quantities will have an odd one left over with no partner. I know how to play games involving matching pairs (eg. snap or memory games). I can begin to combine 2 groups to find out how many altogether. I can use the correct language to describe length and height. I know how to use specific vocabulary relating to length (longer, shorter), height (taller, shorter) and breadth (wider, narrower). I can make direct and indirect comparisons. I can order and sequence important times in my day using language such as now, before, later, soon, after, then and next to describe when events happen. I can recognise that regular events happen on the same day each week and can use the vocabulary 'yesterday', 'today' and 'tomorrow' to describe when events happen. I can describe significant events in my life and talk about events they are looking forward to. I know that some processes, such as growing vegetables, take a longer time. **Building 9 and 10** I can continue to apply the counting principles when counting to 9 and 10 (forwards and backwards). I can represent 9 and 10 in different ways. I can conceptually subitise and see how the numbers are made up of smaller numbers (eg. I know it is 9 because I see 3 and 3 and 3). I know that a 10 frame is full when there are 10. I can use 10 frames, fingers and bead strings to subitise groups of 9 and 10. I can continue to make comparisons by lining items up with 1-1 correspondence to compare them directly or by counting each set carefully and comparing their position in the counting order. I am beginning to know where each number sits in relation to other numbers. I know that when making comparisons, a set can have more items, fewer items or the same number of items as another set. I can compare 2 quantities. I can order 3 or more quantities. I can explore number bonds to 10 using real objects in different contexts. I know how to use other manipulatives such as fingers, bead strings and number shapes to explore bonds to 10. I can explore and manipulate 3D shapes in my play. I know which shapes stack and which shapes roll and why. I know the names of some 3D shapes. I can talk about similarities and differences between the shapes. I can sort them according to what I notice. I can explore more complex patterns which use items more than once in each repeat (for example, ABB, AAB, AABB, AABBB).

	I can say patterns aloud. I can create patterns around the edge of shapes as well as in straight lines.
Summer	**To 20 and Beyond** I can build and identify numbers to 20 (and beyond) using a range of resources (such as 10 frames, number shapes, towers of cubes, rekenreks and bead strings). I know that larger numbers are made of full tens and parts of the next 10. I know that numbers 1-9 repeat after every full 10. I can count on and back beyond 10. I can count on and back from different starting points. I can say what comes before and after a given number. I can place sequences of numbers in order. I can find larger numbers on number tracks and 100 squares. I can complete jigsaws and shape puzzles. I can select and rotate shapes to fill a given space. I can explain why I chose a particular shape and why a different shape wouldn't fit. I can match arrangements of shapes and can use positional language to describe where the shapes are in relation to one another. I can select shapes to complete picture boards or tangram outlines. **First then Now** I can use real objects to see that the quantity of a group can be changed by adding more. I can engage in addition number stories using the first, then, now structure. I can represent the addition number stories on 10 frames, bead strings and their fingers. I can use real objects to see that the quantity of a group can be changed by taking items away. I can engage in subtraction number stories using the first, then, now structure. I can represent the subtraction number stories on 10 frames, bead strings and their fingers. I know that shapes can be combined and separated to make new shapes. I can investigate how many different ways a given shape can be built using smaller shapes. I can explore the different shapes I can make by combining a set of given shapes in different ways. **Find my pattern** I know that doubling means 'twice as many'. I can build doubles using real objects and mathematical equipment. I can say doubles as I build them. I can sort doubles and non-doubles. I can share fairly, noticing when someone doesn't have the same. I can recognise and make equal groups. I know that sometimes there are items left over when I share or group and make suggestions for how to resolve this. I know that some quantities will share equally into 2 groups and some will not. I notice that some quantities can be grouped into pairs and some will have one left over. I can use the words even and odd to describe numbers. I can notice the even and odd structure on number shapes and by building pair-wise patterns on the 10 frames. I can replicate simple constructions, models, real places and places in stories. I know that I can look at these replications from different positions. I can use positional language to describe where objects are in relation to other items. I can play barrier games. I can follow simple verbal instructions as I build. **On the Move** I can engage in extended problem solving. I can develop my critical thinking skills. I can discuss possible starting points. I can carry out my plans and make adaptations as I go along. I can review and discuss my strategies. I can explore and investigate relationships between numbers and shapes. I can use Cuisenaire rods, pattern blocks and the unit construction blocks to explore these relationships. I can copy, continue and create a widening range of repeating patterns and symmetrical constructions. I know that we can make maps and plans to represent places and can use these to see where things are in relation to other things. I can look at and discuss different maps. I can create my own maps to represent the models I build, familiar places and places in stories.
	Year 1

Autumn 1	Sort objects Count objects Represent objects Count, read and write forwards from any number 0 to 10 Count, read and write backwards from any number 0 to 10 Count one more Count one less One-to-one correspondence to start to compare groups Compare groups using language such as equal, more/greater, less/fewer Introduce <, > and = symbols Compare numbers Order groups of objects Order numbers Ordinal numbers (1st, 2nd, 3rd ...) The number line Part-whole model Addition symbol Fact families – addition facts Find number bonds for numbers within 10 Systematic methods for number bonds within 10 Number bonds to 10
Autumn 2	Compare number bonds Addition – adding together Addition – adding more Finding a part Subtraction – taking away, how many left? Crossing out Subtraction – taking away, how many left? Introducing the subtraction symbol Subtraction – finding a part, breaking apart Fact families – the 8 facts Subtraction – counting back Subtraction – finding the difference Comparing addition and subtraction statements a + b > c Comparing addition and subtraction statements a + b > c + d Recognise and name 3-D shapes Sort 3-D shapes Recognise and name 2-D shapes Sort 2-D shapes Patterns with 3-D and 2-D shapes Count forwards and backwards and write numbers to 20 in numerals and words Numbers from 11 to 20 Tens and ones Count one more and one less Compare groups of objects Compare numbers Order groups of objects Order numbers
Spring 1	Add by counting on Find & make number bonds Add by making 10 Subtraction – Not crossing 10 Subtraction – Crossing 10 (1) Subtraction – Crossing 10 (2) Related facts Compare number sentences

	Numbers to 50 Tens and ones Represent numbers to 50 One more one less Compare objects within 50 Compare numbers within 50 Order numbers within 50
Spring 2	Count in 2s Count in 5s Compare lengths and heights Measure length (1) Measure length (2) Introduce weight and mass Measure mass Compare mass Introduce capacity and volume Measure capacity Compare capacity
Summer 1	Count in 2s Count in 5s Count in 10s Make equal groups Add equal groups Make arrays Make doubles Make equal groups – grouping Make equal groups - sharing Find a half (1) Find a half (2) Find a quarter (1) Find a quarter (2)
Summer 2	Describe turns Describe position (1) Describe position (2) Recognising coins Recognising notes Counting in coins Before and after Dates Time to the hour Time to the half hour Writing time Comparing time Counting forwards and backwards within 100 Partitioning numbers Comparing numbers (1) Comparing numbers (2) Ordering numbers One more, one less
	Year 2

Autumn 1	Counting forwards and backwards within 20 Tens and ones within 20 Counting forwards and backwards within 50 Tens and ones within 50 Compare numbers within 50 Count objects to 100 and read and write numbers in numerals and words Represent numbers to 100 Tens and ones with a part-whole model Tens and ones using addition Use a place value chart Compare objects Compare numbers Order objects and numbers Count in 2s Count in 5s Count in 10s Count in 3s Fact families – addition and subtraction bonds to 20 Check calculations Compare number sentences Related facts Bonds to 100 (tens) Add and subtract 1s 10 more and 10 less Add and subtract 10s Add by making 10 Add a 2-digit and 1-digit number – crossing ten Subtraction - crossing 10 Subtract a 1-digit number from a 2-digit number – crossing ten Add two 2-digit numbers – not crossing ten – add ones and add tens Add two 2-digit numbers – crossing ten – add ones and add tens
Autumn 2	Subtract a 2-digit number from a 2-digit number – not crossing ten Subtract a 2-digit number from a 2-digit number – crossing ten – subtract ones and tens Find and make number bonds Bonds to 100 (tens and ones) Add three 1-digit numbers Recognising coins and notes Count money – pence Count money – pounds (notes and coins) Count money – notes and coins Select money Make the same amount Compare money Find the total Find the difference Find change Two-step problems Make equal groups Add equal groups Make arrays

Spring 1	Recognise equal groups Make equal groups Add equal groups Multiplication sentences using the × symbol Multiplication sentences from pictures Use arrays Make doubles 2 times-table 5 times-table 10 times-table Make equal groups – sharing Make equal groups – sharing Make equal groups – grouping Make equal groups – grouping Divide by 2 Odd & even numbers Divide by 5 Divide by 10 Make tally charts Draw pictograms (1-1) Interpret pictograms (1-1) Draw pictograms (2, 5 and 10) Interpret pictograms (2, 5 and 10) Block diagrams
Spring 2	Recognise 2-D and 3-D shapes Count sides on 2-D shapes Count vertices on 2-D shapes Draw 2-D shapes Lines of symmetry Sort 2-D shapes Make patterns with 2-D shapes Count faces on 3-D shapes Count edges on 3-D shapes Count vertices on 3-D shapes Sort 3-D shapes Make patterns with 3-D shapes Make equal parts Recognise a half Find a half Recognise a quarter Find a quarter Recognise a third Find a third Unit fractions Non-unit fractions Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ Find three quarters Count in fractions
Summer 1	Compare lengths and heights Measure lengths (1) Measure lengths (2) Measure length (cm) Measure length (m) Compare lengths Order lengths Four operations with lengths

	Describe position (1)
	Describe position (2)
	Describe movement
	Describe turns
	Describe movement and turns
	Making patterns with shapes
Summer 2	Telling time to the hour
	Telling time to the half hour
	O'clock and half past
	Quarter past and quarter to
	Telling time to 5 minutes
	Writing time
	Hours and days
	Find durations of time
	Compare durations of time
	Introduce weight and mass
	Measure mass
	Compare mass
	Measure mass in grams
	Measure mass in kilograms
	Introduce capacity and volume
	Measure capacity
	Compare volume
	Millilitres
	Litres
	Temperature
	Year 3
Autumn 1	Represent numbers to 100
	Tens and ones using addition
	Hundreds
	Represent numbers to 1,000
	100s, 10s and 1s (1)
	100s, 10s and 1s (2)
	Number line to 1,000
	Find 1, 10, 100 more or less than a given number
	Compare objects to 1,000
	Compare numbers to 1,000
	Order numbers
	Count in 50s
	Add and subtract multiples of 100
	Add and subtract 1s
	Add and subtract 3-digit and 1-digit numbers – not crossing 10
	Add a 2-digit and 1-digit number - crossing 10
	Add 3-digit and 1-digit numbers – crossing 10
	Subtract a 1-digit number from 2-digits - crossing 10
	Subtract a 1-digit number from a 3-digit number – crossing 10
	Add and subtract 3-digit and 2-digit numbers – not crossing 100
	Add 3-digit and 2-digit numbers – crossing 100
	Subtract a 2-digit number from a 3-digit number – crossing 100
	Add and subtract 100s
	Spot the pattern – making it explicit
	Add two 2-digit numbers - crossing 10 - add ones & add tens
	Subtract a 2-digit number from a 2-digit number - crossing 10

Autumn 2	Add and subtract a 2-digit and 3-digit numbers – not crossing 10 or 100 Add a 2-digit and 3-digit numbers – crossing 10 or 100 Subtract a 2-digit number from a 3-digit number – crossing 10 or 100 Add two 3-digit numbers – not crossing 10 or 100 Add two 3-digit numbers – crossing 10 or 100 Subtract a 3-digit number from a 3-digit number – no exchange Subtract a 3-digit number from a 3-digit number – exchange Estimate answers to calculations Check answers Multiplication – equal groups Multiplication using the symbol Using arrays 2 times-table 5 times-table Make equal groups - sharing Make equal groups - grouping Divide by 2 Divide by 5 Divide by 10 Multiply by 3 Divide by 3 The 3 times table Multiply by 4 Divide by 4 The 4 times table Multiply by 8 Divide by 8 The 8 times table
Spring 1	Consolidate 2, 4 and 8 times-tables Comparing statements Related calculations Multiply 2-digits by 1-digit (1) Multiply 2-digits by 1-digit (2) Divide 2-digits by 1-digit (1) Divide 2-digits by 1-digit (2) Divide 2-digits by 1-digit (3) Scaling How many ways? Count money (pence) Count money (pounds) Pounds and pence Convert pounds and pence Add money Subtract money Give change Make tally charts Draw pictograms (2, 5 and 10) Interpret pictograms (2, 5 and 10) Pictograms Bar Charts Tables

Spring 2	Measure length Measure length (m) Equivalent lengths – m & cm Equivalent lengths – mm & cm Compare lengths Compare lengths Add lengths Subtract lengths Measure perimeter Calculate perimeter Make equal parts Recognise a half Find a half Recognise a quarter Find a quarter Recognise a third Find a third Unit fractions Non-unit fractions Equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ Count in fractions
Summer 1	Making the whole Tenths Count in tenths Tenths as decimals Fractions on a number line Fractions of a set of objects (1) Fractions of a set of objects (2) Fractions of a set of objects (3) Equivalent fractions (1) Equivalent fractions (2) Equivalent fractions (3) Compare fractions Order fractions Add fractions Subtract fractions O'clock and half past Quarter past and quarter to Months and years Hours in a day Telling the time to 5 minutes Telling the time to the minute Using a.m. and p.m. 24-hour clock Finding the duration Comparing durations Start and end times Measuring time in seconds

Summer 2	Turns and angles Right angles in shapes Compare angles Draw accurately Horizontal and vertical Parallel and perpendicular Recognise and describe 2-D shapes Recognise and describe 3-D shapes Make 3-D shapes Compare mass Measure mass (1) Measure mass (2) Compare mass Add and subtract mass Compare volume Measure capacity (1) Measure capacity (2) Compare capacity Add and subtract capacity Temperature
	Year 4
Autumn 1	Represent numbers to 1,000 100s, 10s and 1s Number line to 1,000 Round to the nearest 10 Round to the nearest 100 Count in 1,000s 1,000s, 100s, 10s and 1s Partitioning Number line to 10,000 Find 1, 10, 100 more or less 1,000 more or less Compare numbers Order numbers Round to the nearest 1,000 Count in 25s Negative numbers Roman numerals to 100 Add and subtract 1s, 10s, 100s and 1,000s Add two 3-digit numbers - not crossing 10 or 100 Add two 4-digit numbers – no exchange Add two 3-digit numbers - crossing 10 or 100 Add two 4-digit numbers – one exchange Add two 4-digit numbers – more than one exchange Subtract a 3-digit number from a 3-digit number - no exchange Subtract two 4-digit numbers – no exchange Subtract a 3-digit number from a 3-digit number - exchange Subtract two 4-digit numbers – one exchange Subtract two 4-digit numbers – more than one exchange
Autumn 2	Efficient subtraction Estimate answers Checking strategies

	Equivalent lengths - m and cm Equivalent lengths - mm and cm Kilometres Add lengths Subtract lengths Measure perimeter Perimeter on a grid Perimeter of a rectangle Perimeter of rectilinear shapes Multiply by 10 Multiply by 100 Divide by 10 Divide by 100 Multiply by 1 and 0 Divide by 1 and itself Multiply and divide by 3 The 3 times-table Multiply and divide by 6 6 times table and division facts Multiply and divide by 9 9 times table and division facts Multiply and divide by 7 7 times table and division facts
Spring 1	11 and 12 times-table Multiply 3 numbers Factor pairs Efficient multiplication Written methods Multiply 2-digits by 1-digit (1) Multiply 2-digits by 1-digit Multiply 3-digits by 1-digit Divide 2-digits by 1-digit (1) Divide 2-digits by 1-digit (1) Unit and non-unit fractions What is a fraction? Tenths Count in tenths Equivalent fractions (1) Equivalent fractions (2) Equivalent fractions (1) Equivalent fractions (2) Fractions greater than 1 Count in fractions Add fractions Add 2 or more fractions
Spring 2	Subtract fractions Subtract 2 fractions Subtract from whole amounts Fractions of a set of objects (1) Fractions of a set of objects (2) Calculate fractions of a quantity Problem solving – calculate quantities

	Recognise tenths and hundredths Tenths as decimals Tenths on a place value grid Tenths on a number line Divide 1-digit by 10 Divide 2-digits by 10 Hundredths Hundredths as decimals Hundredths on a place value grid Divide 1 or 2-digits by 100
Summer 1	Bonds to 10 and 100 Make a whole Write decimals Compare decimals Order decimals Round decimals Halves and quarters Pounds and pence Ordering money Estimating money Convert pounds and pence Add money Subtract money Find change Four operations Telling the time to 5 minutes Telling the time to the minute Using a.m. and p.m. 24-hour clock Hours, minutes and seconds Years, months, weeks and days Analogue to digital – 12 hour Analogue to digital – 24 hour
Summer 2	Interpret charts Comparison, sum and difference Introducing line graphs Line graphs Turns and angles Right angles in shapes Compare angles Identify angles Compare and order angles Recognise and describe 2-D shapes Triangles Quadrilaterals Horizontal and vertical Lines of symmetry Complete a symmetric figure Describe position Draw on a grid Move on a grid Describe movement on a grid
	Year 5

Autumn 1	1000s, 100s, 10s and 1s Numbers to 10,000 Rounding to the nearest 10 Rounding to the nearest 100 Round to nearest 10, 100 and 1,000 Numbers to 100,000 Compare and order numbers to 100,000 Round numbers within 100,000 Numbers to a million Counting in 10s, 100s, 1,000s, 10,000s, and 100,000s Compare and order numbers to one million Round numbers to one million Negative numbers Roman Numerals to 1,000 Add two 4-digit numbers - one exchange Add two 4-digit numbers - more than one exchange Add whole numbers with more than 4 digits (column method) Subtract two 4-digit numbers - one exchange Subtract two 4-digit numbers - more than one exchange Subtract whole numbers with more than 4 digits (column method) Round to estimate and approximate Inverse operations (addition and subtraction) Multi-step addition and subtraction problems Interpret charts Comparison, sum and difference Introduce line graphs Read and interpret line graphs Draw line graphs Use line graphs to solve problems
Autumn 2	Read and interpret tables Two-way tables Timetables Multiples Factors Common factors Prime numbers Square numbers Cube numbers Multiply by 10 Multiply by 100 Multiply by 10, 100 and 1,000 Divide by 10 Divide by 100 Divide by 10, 100 and 1,000 Multiples of 10, 100 and 1,000 Measure perimeter Perimeter on a grid Perimeter of rectangles Perimeter of rectilinear shapes Calculate perimeter Counting squares Area of rectangles Area of compound shapes Area of irregular shapes

Spring 1	Multiply 2-digits by 1-digit Multiply 3-digits by 1-digit Multiply 4-digits by 1-digit Multiply 2-digits (area model) Multiply 2-digits by 2-digits Multiply 3-digits by 2-digits Multiply 4-digits by 2-digits Divide 2-digits by 1-digit (1) Divide 2-digits by 1-digit (2) Divide 3-digits by 1-digit Divide 4-digits by 1-digit Divide with remainders What is a fraction? Equivalent fractions (1) Equivalent fractions Fractions greater than 1 Improper fractions to mixed numbers Mixed numbers to improper fractions Number sequences Compare and order fractions less than 1 Compare and order fractions greater than 1 Add and subtract fractions Add fractions within 1 Add 3 or more fractions Add fractions
Spring 2	Add mixed numbers Subtract fractions Subtract mixed numbers Subtract – breaking the whole Subtract 2 mixed numbers Multiply unit fractions by an integer Multiply non-unit fractions by an integer Multiply mixed numbers by integers Calculate fractions of a quantity Fraction of an amount Using fractions as operators Decimals up to 2 d.p. Decimals as fractions (1) Decimals as fractions (2) Understand thousandths Thousandths as decimals Rounding decimals Order and compare decimals Understand percentages Percentages as fractions and decimals Equivalent F.D.P.

Summer 1	Adding decimals within 1 Subtracting decimals within 1 Complements to 1 Adding decimals – crossing the whole Adding decimals with the same number of decimal places Subtracting decimals with the same number of decimal places Adding decimals with a different number of decimal places Subtracting decimals with a different number of decimal places Adding and subtracting wholes and decimals Decimal sequences Multiplying decimals by 10, 100 and 1,000 Dividing decimals by 10, 100 and 1,000 Identify angles Compare and order angles Measure angles in degrees Measuring with a protractor (1) Measuring with a protractor (2) Drawing lines and angles accurately Calculating angles on a straight line Calculating angles around a point Triangles Quadrilaterals Calculating lengths and angles in shapes Regular and irregular polygons Reasoning about 3-D shapes
Summer 2	Describe position Draw on a grid Position in the first quadrant Translation Translation with coordinates Lines of symmetry Complete a symmetric figure Reflection Reflection with coordinates Kilometres Kilograms and kilometres Millimetres and millilitres Metric units Imperial units Converting units of time Timetables What is volume? Compare volume Estimate volume Estimate capacity
	Year 6
Autumn 1	Numbers to 10,000 Numbers to 100,000 Numbers to a million Numbers to ten million Compare and order any number Round numbers to 10, 100 and 1,000 Round any number Negative numbers

	Add whole numbers with more than 4 digits Subtract whole numbers with more than 4 digits Inverse operations (addition and subtraction) Multi-step addition and subtraction problems Add and subtract integers Multiply 4-digits by 1-digit Multiply 2-digits (area model) Multiply 2-digits by 2-digits Multiply 3-digits by 2-digits Multiply up to a 4-digit number by 2-digit number Divide 4-digits by 1-digit Divide with remainders Short division Division using factors Long division (1) Long division (2) Long division (3) Long division (4) Factors Common factors Common multiples Primes to 100 Squares and cubes Order of operations Mental calculations and estimation Reason from known facts
Autumn 2	Equivalent fractions Simplify fractions Improper fractions to mixed numbers Mixed numbers to improper fractions Fractions on a number line Compare and order (denominator) Compare and order (numerator) Add and subtract fractions (1) Add and subtract fractions (2) Add mixed numbers Add fractions Subtract mixed numbers Subtract fractions Mixed addition and subtraction Multiply fractions by integers Multiply fractions by fractions Divide fractions by integers (1) Divide fractions by integers (2) Four rules with fractions Fraction of an amount Fraction of an amount – find the whole The first quadrant Four quadrants Translations Reflections

Spring 1	Decimals up to 2 decimal places Understand thousandths Three decimal places Multiply by 10, 100 and 1,000 Divide by 10, 100 and 1,000 Multiply decimals by integers Divide decimals by integers Division to solve problems Decimals as fractions Fractions to decimals (1) Fractions to decimals (2) Understand percentages Fractions to percentages Equivalent FDP Order FDP Percentage of an amount (1) Percentage of an amount (2) Percentages – missing values Find a rule – one step Find a rule – two step Forming expressions Substitution Formulae Forming equations Solve simple one-step equations Solve two-step equations Find pairs of values Enumerate possibilities
Spring 2	Metric measures Convert metric measures Calculate with metric measures Miles and kilometres Imperial measures Shapes – same area Area and perimeter Area of a triangle (1) Area of a triangle (2) Area of a triangle (3) Area of parallelogram What is volume? Volume – counting cubes Volume of a cuboid Using ratio language Ratio and fractions Introducing the ratio symbol Calculating ratio Using scale factors Calculating scale factors Ratio and proportion problems
Summer 1	Read and interpret line graphs Draw line graphs Use line graphs to solve problems Circles Read and interpret pie charts Pie charts with percentages Draw pie charts The mean

	Measure with a protractor Draw lines and angles accurately Introduce angles Angles on a straight line Angles around a point Calculate angles Vertically opposite angles Angles in a triangle Angles in a triangle – special cases Angles in a triangle – missing angles Angles in special quadrilaterals Angles in regular polygons Draw shapes accurately Draw nets of 3-D shapes
Summer 2	Consolidation and themed projects