Maths Skills Progression

Due to the wide range of needs of our children we use Bsquared assessment tool to assess progress for our children. B Squared have designed Progressions Steps, an observation based, teacher assessment framework for use with pupils who are engaged in subject-specific learning. This framework has been designed to help teachers to identify and record the ongoing achievements of pupils who are working moderately or severely beneath age-related expectations, in some or all areas of their development. It can be used with pupils who are either studying elements from the formal curriculum or those who are still engaged in a semi-formal approach to learning. The Progression Steps assessment framework helps schools and teachers to monitor their provision for Cognition and Learning by enabling staff to record the academic knowledge and abilities achieved by their pupils. Using the Early Years Framework, the National Curriculum as well as Progression Steps, we have broken down the key skills for each subject into steps so that we can clearly monitor each child’s progress.

**Step 1**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Joins in new number rhymes with encouragement |
| Using Numerals  | Recognises numbers 1, 2 and 3  |
| Place Value  | Picks up and puts down single objectsUses the term 'one' appropriatelyUses the term 'lots' appropriately |
| Application & problem solving | Plays games which use diceUses counting in play situations |
| Comparing, ordering & rounding | Understands the difference between the concepts one, more, and all |
| **Addition And Subtraction** |
| Understanding +/- | Picks up more than one object when asked for two |
| Mental Methods | Joins in repetitive verse (sound pattern) |
| Application & problem solving | Communicates 'Gone' or 'All gone' appropriatelyDemonstrates an understanding of the concept of 1:1 correspondence, e.g. giving one cup to each pupil  |
| **Multiplication And Division** |
| Understanding x/÷ | Matches an object to another object |
| Mental methods | Alerts a member of staff when there are not enough items for one-to-one matchingDemonstrates sharing in play situations |
| Application & problem solving | Gives two things to each person in the groupMakes groups of twoFolds cardboard in two roughly equal parts, e.g. to make a cardCompletes one-to-one matching, e.g. gives an object to each person |
| **Tier 1: everyday vocabulary** | One, Two, Three, Count, Match, Not enough  |
| **Tier 2: High frequency subject** | Number bonds, Double, Half  |
| **Tier 3: Low frequency technical vocabulary** | Pattern  |
| **Measurement**  | **Measurement**  |
| Space & Measures | Compare in basic terms length weight and capacity Becomes familiar with measuring tools Uses the terms 'heavy' and 'light' in play activityUses the terms ‘big' and 'small' in play activityDescribes how the temperature of the water feels in simple terms, e.g. hot or cold |
| Time | Increasingly able to order and sequence events using everyday language related to timeCommunicates about something they do during the day and nightShows anticipation due to daily schedule, |
| **Tier 1: everyday vocabulary** | Finished, Now, Next, Money, Heavy, Light  |
| **Tier 2: High frequency subject** | Coin, Temperature  |
| **Tier 3: Low frequency technical vocabulary** | Measure, Size, Heavier than, Lighter than  |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Builds a tower of seven bricksHandles a range of 2D/3D shapesMatches 2D shapes |
| Properties of shape | Communicates about pliable material activity in terms of changing shapesMatches 2D shapesFinds objects that roll if they push them |
| **Position and Direction** |
| Position and Direction  | Assembles a four/ six-piece puzzleCommunicates and follows instructions using the terms ‘in’ and ‘out’Communicates using positional language, e.g. the ball is in the boxIdentifies movement as ‘up’ or ‘down’Matches objects regardless of size with some support, e.g. all the balls together |
| **Tier 1: everyday vocabulary** | Shape, In, Out, Up, Down  |
| **Tier 2: High frequency subject** | 2D, 3D |
| **Tier 3: Low frequency technical vocabulary** | Movement, Compare  |
| **Statistics** | **Statistics & Probability**  |
| Starts to be able to find an object with one specific characteristic, e.g. an object that is: green, hard, little, etc.Groups similar objects into simple sets with support, e.g. cars, animals, etc.Completes one-to-one matching, e.g. gives an object to each personLooks at collection of similar objects and may give a property to classify them, e.g. different coins are all money, etc.Recognises and sorts familiar object regardless of colourSorts objects using their own criteriaSorts objects by a given criteria when contrasts are obvious |
| **Tier 1: everyday vocabulary** | Match  |
| **Tier 2: High frequency subject** | Sorts |
| **Tier 3: Low frequency technical vocabulary** | Groups |

**Step 2**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Says the number names to 5 in the correct order (e.g. in a song or by joining in with the teacher) (PKSS)Points to objects as they countCounts up to five without objects |
| Using Numerals  | Identifies numerals up to fiveTraces numbers one to fiveSequences numerals to five |
| Place Value  | Demonstrates an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked  |
| Application & problem solving | Identifies whether there are one, two or three objects in a group of objects |
| Comparing, ordering & rounding | Compares two sets of (up to 5) counters pointing to the group that contains less/moreCompares two sets of (up to 5) counters pointing to the group that contains fewer/greater |
| **Addition And Subtraction** |
| Understanding +/- | Starts to count a set of objects when asked "How many?" |
| Mental Methods | Joins in rote count to 10  |
| Application & problem solving | Counts on 1 by 1 by adding an extra concrete resource at a time Takes away 1 concrete resource to subtract.  |
| **Multiplication And Division** |
| Understanding x/÷ | Makes groups of 3-5  |
| Mental methods | Shares objects equally between groups Recalls some halving facts within 10 Recalls some doubling facts within 10  |
| Application & problem solving | Shares concrete objects so that everyone has 3, 4 or 5 in a group  |
| **Tier 1: everyday vocabulary** | Number names to 5, More, Less  |
| **Tier 2: High frequency subject** | How many, Share out, Count out  |
| **Tier 3: Low frequency technical vocabulary** | Estimate, Predict  |
| **Measurement**  | **Measurement**  |
| Space & measures | Identifies the big or small object from a selection of two States when they have observed objects balanceFrom a choice of two finds the heavier/lighter packagePuts five rings on peg in order of sizeBuilds a tower and compares its size with an objectCompares the length of different object, correctly using terms, e.g. ‘longer’, ‘bigger’, ‘same as’Gives an example of an object which is longer/shorter or bigger/smaller |
| Time | Gives the day an appropriate name that may not be correctSequences three pictures of daily eventsTalks simply about their daily routineCommunicates what they saw earlier in the day/ yesterday  |
| **Tier 1: everyday vocabulary** | Big, Small, Week, Day, Old, New |
| **Tier 2: High frequency subject** | Balance, Short, Long, Fast, Slow  |
| **Tier 3: Low frequency technical vocabulary** | Same as  |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Selects a specific shape from a collection, e.g. circlesMatches geometric shapes with pictures of shapes |
| Properties of shape | Traces simple shapesTraces large shapesMatches objects according to shape disregarding size, e.g. all carsResponds appropriately to shape-based terminology, e.g. where’s the round shape, pass me the box, etc.Sorts objects according to a stated characteristic, e.g. group all the small balls together, sort the shapes into triangles and circles (PKSS) |
| **Position and Direction** |
| Position and Direction  | Copies a pattern using real life materials, e.g. apples, oranges and bananasDescribes the directional movement of an objectDiscusses patterns in terms of shapes/lines/coloursMoves an object forwards/backwards on commandTurns objects to align them |
| **Tier 1: everyday vocabulary** | Shape, Match, Line, Colour  |
| **Tier 2: High frequency subject** | Forwards, Backwards  |
| **Tier 3: Low frequency technical vocabulary** | Pattern |
| **Statistics** | **Statistics & Probability**  |
| Communicates what they can see in a pictogramFinds common attributes, e.g. both balls bounceIdentifies the differences between two similar objects, e.g. one ball is red and one is blue, etc.Makes a mark on a tally when promptedSorts a range of everyday objects correctly, e.g. knives, forks and spoons in the correct compartment in a drawer |
| **Tier 1: everyday vocabulary** | Sorts, Tally  |
| **Tier 2: High frequency subject** | Differences, Similarities |
| **Tier 3: Low frequency technical vocabulary** | Pictogram  |

**Step 3**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Counts to 10 independently Listens to and joins in with number rhymes and stories Counts up to 10 objects  |
| Using Numerals  | Identifies numbers to 10 Writes numbers to 5  |
| Place Value  | Recognises they have made an error in counting patterns to ten |
| Application & problem solving | Using concrete materials, finds the number before and after, one more and one lessEstimates objects with a degree of accuracy |
| Comparing, ordering & rounding | Compares 2 quantities using the terms fewer, more, smaller, largerIdentifies the largest and smallest of two sets of objects |
| **Addition And Subtraction** |
| Understanding +/- | Adds one more object and counts how many more are needed to make threeRemoves one object and counts how many now (up to five) |
| Mental Methods | Recalls number bonds to 10 with support |
| Application & problem solving | Demonstrates understanding when answering, "How many are gone?"Explains the meaning of the term "altogether" using simple languageExplains the meaning of the term "take away" using simple languageExplains the meaning of the term "make" using simple language |
| **Multiplication And Division** |
| Understanding x/÷ | Shares objects between two platesShares objects into groups |
| Mental methods | Attempts to double numbers to 10  |
| Application & problem solving | Combines two equal groupsTalks about half in conversations |
| **Tier 1: everyday vocabulary** | Number names to 10, One more, One less  |
| **Tier 2: High frequency subject** | Double, Half, Make,  |
| **Tier 3: Low frequency technical vocabulary** | Altogether, Take away, Odd, Even |
| **Measurement**  | **Measurement**  |
| Space & measures | Uses comparative language to describe an object as heavy or light, heavier or lighterOrders two items by weightFinds objects which are lighter/heavier than a specified itemOrders a range of (clearly different- sized) objects depending on length/sizeFinds objects which are shorter/longer than a specified itemFinds which box will hold a specific shaped or sized objectFills an empty container and uses appropriate language to describe what they have doneCompares the temperature of water using their hand, e.g. explaining that "this bowl is warmer" |
| Time | Sequences four pictures of daily eventsDiscusses key times of the day in simple termsIdentifies some of the days of the weekDiscusses key times of the day in simple termsExplains the uses of a clock |
| **Tier 1: everyday vocabulary** | Heavier, Lighter, Scales, Clock  |
| **Tier 2: High frequency subject** | Weight, Capacity, Days of the week  |
| **Tier 3: Low frequency technical vocabulary** | Order, Temperature  |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Draws round shape templatesFinds similar shapes on a group of objectsMakes matching shapes using pliable materialDraws some simple shapes |
| Properties of shape | Describes handled shapes by number of sides and corners they haveFinds shapes on the face of objectsCreates patterns from shapesDescribes shapes, listing some properties, e.g. sides, roundRefers to a box-like shape using the term 'square'Refers to a round shape using the term 'circle' |
| **Position and Direction** |
| Position and Direction  | Continues and creates a pattern using real life materialsRotates puzzle shapes to fit into placeAssembles a ten-piece puzzleFinds items from simple positional and directional cluesPlaces objects where asked, e.g. 'on top of'Physically follows 'forward', 'backward' and 'turn' instructionsGives another person forward, backward and turn instructions to move from one point to another |
| **Tier 1: everyday vocabulary** | Round, Sides, Square, Circle  |
| **Tier 2: High frequency subject** | Pattern, Forwards, Backwards  |
| **Tier 3: Low frequency technical vocabulary** | Positional, Directional |
|  | **Statistics & Probability**  |
| **Statistics** | Completes a simple chart to show their findings, e.g. puts pictures of trees in one pile and pictures of flowers in anotherCompletes a tally chart with minimal assistanceRecords data through pictures, e.g. weather information using pictures of the sun and rainIdentifies similarities and differences |
| **Tier 1: everyday vocabulary** | Chart  |
| **Tier 2: High frequency subject** | Tally  |
| **Tier 3: Low frequency technical vocabulary** | Data, Similarities, Differences  |

**Step 4**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Subitise up to 5Verbally counts beyond 20 Counts an irregular arrangement of up to 20 objectsCounts objects that cannot be touched to 20 |
| Using Numerals  | Reads and writes numbers in numerals from 0 to 9 Reads and writes numbers from 1 to 20 Identifies missing numbers on a number line to 20Orders numerals to 20 consistently |
| Place Value  | Recognises pattern of the number system Identifies the position of an object using ordinal numbers to 10thHave a deep understanding of numbers up 10  |
| Application & problem solving | Identifies and represents numbers using objects and pictorial representations including the number lineMatches ordinal numbers to cardinal numbers |
| Comparing, ordering & rounding | Compares quantities up to 10 in different contexts Compares two groups using countingPlaces three non-sequential numbers up to 20 in order |
| **Addition And Subtraction** |
| Understanding +/- | Counts to 20, demonstrating that the next number in the count is one more and the previous number is one less (PKSS)Solves one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9 |
| Mental Methods | Recognise when one quantity (up to 10) is greater than, less than or the same asAutomatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some to 10Understand the composition of each numberSubtraction facts within 20 |
| Application & problem solving | Checks estimates by countingDemonstrates an understanding that the number of objects remains the same when they are rearranged providing nothing has been added or taken awayDemonstrates an understanding of the commutative law (e.g. 3 + 2 = 5, therefore 2 + 3 = 5) (PKSS)Solve one-step problems that involve addition and subtraction (including missing number problems such as 7 = ? – 9, and find-the-difference problems such as 7 + ? = 9,) using concrete objects and pictorial representations |
| **Multiplication And Division** |
| Understanding x/÷ | Explore and represent patterns… to 10Understand evens and odds, double facts and how quantities can be distributed equallyDoubles any number to tenUnderstands and uses a range of simple vocabulary associated with division/multiplication |
| Mental methods | Automatically recall… double facts (to 10)Understand evens and odds [and] double facts |
| Application & problem solving | Creates groups of small quantities, e.g. sharing ten into a group of five, three and twoDivides groups of objects in halfShares objects into equal groupsSolve one-step problems… using concrete objects, pictorial representations and arrays with the support of the teacher |
| **Fractions, Decimals and Percentages** |
| Conceptual Understanding  | Recognise, find and name a half as one of two equal parts of an object or shapeRecognise, find and name a quarter as one of four equal parts of an object or shape |
| Calculating | Recognise a half as one of two equal parts of a quantity recognise a quarter as one of four equal parts of a quantity |
| **Tier 1: everyday vocabulary** | Numbers to 20, Add, Make, Take away, Share, Group, Half  |
| **Tier 2: High frequency subject** | Number bonds, Count forwards/backwards |
| **Tier 3: Low frequency technical vocabulary** | Plus, Total, Array  |
| **Measurement**  | **Measurement**  |
| Space & measures | Measure and begin to record the following: - lengths and heights - mass/weight - capacity and volumeCompare and order lengths, mass, volume/capacity and record the results using >, < and =Orders two or three items by massEstimates length using non-standard units, e.g. the number of strides across the hallDescribes different temperatures using a variety of simple appropriate terms |
| Time | Recognise and use language relating to dates, including days of the week, weeks, months and yearsMeasure and begin to record… time in digital format (hours, minutes, seconds)tell the time to the hour and half past the hour and draw the hands on a clock face to show these timesSequence events in chronological order using digital formatNames tomorrow/ yesterday States how often events occur, e.g. weekly, dailyReads hours and half hours on a digital clock/ analogue clock  |
| Money  | Recognise and know the value of different denominations of coins and notesSolves money problems involving addition and subtraction of single digit numbers up to 10pGives equivalent amounts to 5p and 10p  |
| **Tier 1: everyday vocabulary** | Compare, Order, Length, Mass, Volume, Capacity, Coins, Tomorrow, Yesterday  |
| **Tier 2: High frequency subject** | Days of the week, Months of the year, Hour, Half hour, Digital clock, Analogue clock  |
| **Tier 3: Low frequency technical vocabulary** | Chronological order, Denomination of coins |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Recognises some common 2D shapes Identifies a filled shapeNames common 2D shapes, e.g. circle, triangleNames common 3D shapes, e.g. cuboid, sphere |
| Properties of shape | Recognises 2D and 3D shapes in everyday objectsSorts shapes by sizeDescribes a shape in terms of sides, corners and straightness of sidesDescribes structures using terms related to shape and position |
| **Position and Direction** |
| Position and Direction  | Describes the position of objects using everyday languageDescribes directions using everyday languageDescribes position using the terms "right" and "left" correctlyDescribe position, direction and movement, including whole, half, quarter and three-quarter turns |
| **Tier 1: everyday vocabulary** | Circle, Triangle Square, Cuboid, Sphere, Cube, Point, Pointed, Turn  |
| **Tier 2: High frequency subject** | Corner, Side, Right, Left, Whole turn, Half turn, Quarter turn, Three-quarter turn, |
| **Tier 3: Low frequency technical vocabulary** | Clockwise, Anticlockwise, Position, Direction |
| **Statistics** | **Statistics & Position**  |
| Understanding and Drawing | Interpret and construct simple pictograms, tally charts, block diagrams and simple tablesRead scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are givenExtracts simple information from a pictogramExtracts simple information from a block diagramRecords their results using a simple pre-drawn chart |
| Problem Solving  | Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantityAsk and answer questions about totalling and comparing categorical dataSorts objects by given criterionCounts objects in each category to find the total |
| **Tier 1: everyday vocabulary** | Pictogram, Results, Total, Compare, Table  |
| **Tier 2: High frequency subject** | Block diagram, Category, Column, Row, Title  |
| **Tier 3: Low frequency technical vocabulary** | Criterion, Represent, Scale  |

**Step 5**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Count beyond 100, forwards and backwards, from any given numberCount in twos, fives and tensCount in tens from any number [eg 3,13,23], forward and backward |
| Using Numerals  | Read and write numbers to 100 in numeralsRead and write numbers from 1 to 20 in numerals and words |
| Place Value  | Identify and represent numbers using objects and pictorial representations including the number line |
| Application & problem solving | Use place value and number facts to solve problems |
| Comparing, ordering & rounding | Use the language of: equal to, more than, less than (fewer), most, leastCompare and order numbers from 0 up to 100; use <, >and = signs (also in Measure) |
| **Addition And Subtraction** |
| Understanding +/- | Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signsShow that addition can be done in any order (commutative) and subtraction of one number from another cannot |
| Mental Methods | Given a number, identify one more and one less represent and use number bonds and related Add and subtract one-digit and two-digit numbers to 20, including zeroFind 10 more or less than a given numberRecall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 |
| Application & problem solving | Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers (where no regrouping is required), and adding three one-digit numbers |
| Estimation and Checking Answers | Recognise and use the inverse relationship between addition and subtraction to check Calculations and solve missing number problems |
| **Multiplication And Division** |
| Understanding x/÷ | Show that multiplication can be done in any order (commutative) and division of one number by another cannot |
| Mental methods | Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers |
| Written Methods  | Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs |
| Application & problem solving | Solve problems… using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts |
| **Fractions, Decimals and Percentages**  |
| Conceptual Understanding  | Recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity |
| Calculating | Recognise 1/3, 1/4, 2/4 and 3/4 of a quantity (and 1/2, and recognise that all parts must be equal parts of the whole)Write simple fractions [eg 1/2 of 6 = 3] |
| Equivalence  | Recognise the equivalence of 2/4 and 1/2 |
| **Algebra (Formerly Starts in Year 6)**  |
| Early introduction of algebra  | Solve one-step missing number problems (such as 7 = ? – 9, and find-the-difference problems such as 7 + ? = 9) Using concrete objects and pictorial representations |
| **Tier 1: everyday vocabulary** | Group, Times table, Lots of, Pairs |
| **Tier 2: High frequency subject** | Repeated addition, Division,  |
| **Tier 3: Low frequency technical vocabulary** | Times Table, Array, Inverse  |
| **Measurement**  | **Measurement**  |
| Space & measures | Choose and use appropriate standard units to estimate and measure length/height/depth/width (m/cm), mass (kg/g), capacity (litres/ml) and temperature (°C), To the nearest appropriate unit, using rulersMeasures and begins to record mass and weight in standard units with supportHandles and discusses objects that weigh more or less than a kilogramCompares and orders mass and records the results using >, < and =Chooses and uses appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit, using rulersMeasures and begins to record capacity in standard unitsCompares, describes, and solves practical problems for capacity and volume, e.g. full/empty, more than, less than, half, half full, quarterObserves and discusses weather in terms of temperatureRecognises the abbreviations for metric units of temperature ºC |
| Time | Know the number of minutes in an hour and the number of hours in a dayread and use a digital clockTell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these timesCompare and sequence intervals of time using digital format |
| Money | Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular valueFind different combinations of coins that equal the same amounts of moneySolve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change |
| **Tier 1: everyday vocabulary** | Length, Height, Depth, Width, Mass, Capacity, Temperature, Full, Empty, Weather  |
| **Tier 2: High frequency subject** | Digital clock, Analogue clock, Compare and sequence events, Kilogram  |
| **Tier 3: Low frequency technical vocabulary** | Pounds, Pence, Coin names, Degree  |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Compare and sort common 2-D and 3-D shapes and everyday objectsIdentify 2-D shapes on the surface of 3-D shapes, [eg a circle on a cylinder and a triangle on a pyramid]Identifies the 2D shapes in a collection of 2D and 3D shapesRecognises and names triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres from a group of shapes or pictures of the shapes |
| Properties of shape | Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical lineIdentify and describe the properties of 3-D shapes, including the number of edges, vertices and facesRelates 3D shapes to objects of that shape |
| **Position and Direction** |
| Position and Direction  | Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)Order and arrange combinations of mathematical objects in patterns and sequencesDescribes movement using the language of direction, e.g. backwards, leftGives instructions to someone else to follow, to move themselves or an objectDescribes the position of a feature on a simple map |
| **Tier 1: everyday vocabulary** | Names: Triangles, Rectangles, Squares, Circles, Cuboids, cubes, Pyramids and Spheres, Property, Surface  |
| **Tier 2: High frequency subject** | Sides, Edges, Vertices, Faces, Route, Map  |
| **Tier 3: Low frequency technical vocabulary** | Line of symmetry, Vertical line, North, South, East, west  |
| **Statistics** | **Statistics & Probability**  |
| Understanding and Drawing  | Interpret and present data using pictograms, bar charts and tablesRecords data in a simple block diagramRecords data in simple pre-drawn tablesRecords data using simple measurements |
| Problem Solving  | Solve one-step and two-step questions [eg ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tablesAsks and answers simple questions about the data they have gatheredAsks and answers questions about totalling and comparing categorical dataSelects criterion and sorts objectsSuggests ways of improving data collection |
| **Tier 1: everyday vocabulary** | Chart, Grid, Bar Chart, Pictogram, Data, Row, Column |
| **Tier 2: High frequency subject** | Axis, Axes, Interval |
| **Tier 3: Low frequency technical vocabulary** | Frequency Table, Carroll diagram, Venn diagram |

**Step 6**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Count in steps of 2, 3, and 5 from 0, forward and backwardCount from 0 in multiples of 4, 8, 50 and 100Count up and down in tens Counts beyond 100 |
| Using Numerals  | Read and write numbers to at least 100 in numerals and in wordsRead and write numbers up to 1,000 in numerals and in words |
| Place Value  | Recognise the place value of each digit in a two-digit number (and note language: tens and ‘ones’, not ‘units’)Recognise the place value of each digit in a three-digit number (hundreds, tens, ones - not units)Identify, represent and estimate numbers using different representationsUses place value and number facts to solve problems |
| Application & problem solving | Solve number problems and practical problems |
| Comparing, ordering & rounding | Compare and order numbers up to 1,000Round to the nearest 10Compares, orders and records number using > < and = |
| **Addition And Subtraction** |
| Understanding +/- | Show that addition can be done in any order (commutative) and subtraction of one number from another cannotAdds and subtracts 2 and 3 digit numbers  |
| Mental Methods | Find 10 or 100 more or less than a given numberAdd and subtract numbers mentally, including: a threedigit number and ones, a three-digit number and tens, a three-digit number and hundreds |
| Written Methods  | Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction |
| Application & problem solving | Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction |
| Estimation and Checking Answers | Estimate the answer to a calculation and use inverse operations to check answers |
|  | **Multiplication And Division** |
|  | Understanding x/÷ | Recalls multiplication and division facts for the two, five and 10 times table |
| Mental methods | Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables through doubling, they connect the 2, 4 and 8 times tables (in Curric. Guidance) |
| Written Methods  | Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods |
| Application & problem solving | Solve problems, including missing number problems… including positive integer scaling problems and correspondence problems in which objects are connected to objectsSolves problems using arrays |
| **Fractions, Decimals and Percentages** |
| Application  | Recognises, finds, names, and writes the following fractions of a length, shape, set of objects or quantityIdentifies 1/3, 1/4, 1/2, 2/4, 3/4 and demonstrates that all parts must be equal parts of the whole Calculates halves, quarters, thirds of a quantity, e.g. ¾ of 12 |
| Conceptual Understanding  | Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10Understands and uses the terms "fraction", "part" and "whole" correctly |
| Calculating | Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominatorsAdd and subtract fractions with the same denominator within one whole [eg 5/7 + 1/7 = 6/7 |
| Equivalence  | Recognise and show, using diagrams, equivalent fractions with small denominators |
| Ordering and Comparison  | Compare and order unit fractions, and fractions with the same denominators |
| **Algebra (To be fully introduced in Year 6)**  |
| Early introduction of algebra | Use the inverse relationship between addition and subtraction… to solve missing number problems |
| **Ratio and Proportion (to be fully introduced in Year 6)**  |
| Early Ratio and Proportion  | Solve problems… involving multiplication and division, including positive integer scaling problems |
| **Tier 1: everyday vocabulary** | Part, Whole, Fraction, 2 digit number, 3 digit number, Increase, Decrease, Factor pair  |
| **Tier 2: High frequency subject** | Multiples, Denominator, Numerator, Factor pair, Remainder  |
| **Tier 3: Low frequency technical vocabulary** | Inverse operation, Place holder  |
| **Measurement**  | **Measurement**  |
| Space & measures | Estimate, compare and calculate different measures…Convert between different units of measure [eg kilometre to metre]Reads scales in divisions of ones, twos, fives, and tens Finds the weight of objects up to 100 gramsRecognises the abbreviations for metric units of mass: kg, gEstimates, orders and measures mass using suitable unitsChooses and uses appropriate standard units to estimate and measure capacity litres/ml) to the nearest appropriate unit, using measuring vessels |
| Time | Know the number of seconds in a minute and the number of days in each month, year and leap yearUse vocabulary such as o’clock, a.m./p.m., morning, afternoon, noon and midnightconvert between different units of measure [eg hour to minute]Estimate and read time with increasing accuracy to the nearest minuteRecord and compare time in… seconds, minutes and hours in digital formattell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocksCompare durations of events [for example to calculate the time taken by particular events or tasks] using digital formatDraws the digital display for times including quarter to and pastReads the time on the clock to the nearest 15 minutes  |
| Money  | Solves simple problems in a practical context involving addition and subtraction of money of the same unit, including giving changeCombines amounts to make a specific valueWorks out if they have enough money to buy an itemRecognises and uses symbols for pounds (£) and pence (p); combines amounts to make a particular valueUses different coins to make the same amount  |
| **Tier 1: everyday vocabulary** | Seconds, Minutes, Hours, Months of the year  |
| **Tier 2: High frequency subject** | Convert, Tells the time to the nearest 15 minutes  |
| **Tier 3: Low frequency technical vocabulary** | Grams, Metric units  |
| **G****eometry** | **Properties of Shape** |
| Recognising shapes | Recognise 3-D shapes in different orientations and describe themDraw 2-D shapes and make 3-D shapes using modelling materialsIdentify horizontal and vertical lines |
| Properties of shape | Identify… pairs of perpendicular and parallel linesNames and describes properties of 2D and 3D shapes, including number of sides, vertices, edges, faces and lines of symmetry Identifies and describes the properties of 2D shapes, including the number of sides, and line symmetry in a vertical line |
| Angles | Recognise angles as a property of shape or a description of a turnIdentify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turnIdentify whether angles are greater than or less than a right angle |
| Perimeter, area & volume | Measure the perimeter of simple 2-D shapes |
| **Position and Direction** |
| Position and Direction  | Describes movement in terms of acceleration, direction and speedRecognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turnExpresses a turn in relation to a right angleRecognises that a quarter turn is a right angleRepeats and rotates a shape to create a linear pattern Describes the relative location of a place using understanding of the four points of a compass |
| **Tier 1: everyday vocabulary** | Parallel, Semi-circle, Non-symmetrical, Regular, Irregular, Right angle, Acute angle, Obtuse angle |
| **Tier 2: High frequency subject** | Right-angled triangle, Pentagonal, Hexagonal, Octagonal, Polyhedron |
| **Tier 3: Low frequency technical vocabulary** | Hemisphere, Compass, Perpendicular  |
| **Statistics** | **Statistics & Probability** |
| Understanding and Drawing | Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphsAnswers questions about the results they have gatheredCompares categorical dataDefines the criteria they want to use to collect specific data |
| Problem Solving | Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphsChecks that the results help to answer the original questionSuggests ways of improving the presentation of their dataSuggests how they can represent information they have researched |
| **Tier 1: everyday vocabulary** | Survey, Questionnaire, Bar Chart, Tally Chart, Comparison, Sum, Difference |
| **Tier 2: High frequency subject** | Time Graph, Criteria |
| **Tier 3: Low frequency technical vocabulary** | Interpret, Discrete Data, Continuous Data  |

**Step 7**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Count in multiples of 6, 7, 9, 25 and 1,000 Counts from 0 in multiples of 4, 8, 50 and 100Count up and down in hundredthsCount backwards through zero to include negative numbers |
| Using Numerals  | 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 valueReads and writes numbers up to 1,000 in numerals and in words |
| Place Value  | Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones - not units)Finds 1,000 more or less than a given number |
| Application & problem solving | Solve number and practical problems that involve: * counting in multiples of 6, 7, 9, 25 and 1,000
* finding 1,000 more or less than a given number
* counting backwards through 0 to include negative numbers
* recognising the place value of each digit in a four-digit number
* ordering and comparing numbers beyond 1,000
* identifying, representing, and estimating numbers using different representations
* rounding any number
 |
| Comparing, ordering & rounding | Order and compare numbers beyond 1,000 Compare numbers with the same number of decimal places up to two decimal placesround any number to the nearest 10, 100 or 1,000 and to the nearest whole |
| **Addition And Subtraction** |
| Understanding +/- | Solves addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why |
| Mental Methods | Find 1,000 more or less than a given number |
| Written Methods  | Add and subtract numbers with up to 4 digits using the formal written (column) methods where appropriate |
| Application & problem solving | Solve addition and subtraction two-step problems in contexts, deciding which methods to use and whySolves problems, including missing number problems, using number facts, place value, and more complex addition and subtraction |
| Estimation & checking answers | Estimate and use inverse operations to check answers to a calculation |
| **Multiplication And Division** |
| Understanding x/÷ | Writes and calculates mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods |
| Mental methods | Recall multiplication and division facts for multiplication tables up to 12 × 12 Recognise and use factor pairs and commutativity in mental calculations |
| Written Methods  | Multiply two-digit and three-digit numbers by a one digit number using a formal written layout |
| Application & problem solving | Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects |
| **Fractions, Decimals and Percentages** |
| Application  | Solve simple measure and money problems involving fractions and decimals to two decimal places |
| Conceptual Understanding  | Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten |
| Calculating  | Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole numberAdd and subtract fractions with the same denominatorFind the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths |
| Equivalence  | Recognise and show, using diagrams, families of common equivalent fractionsRecognise and write decimal equivalents to 1/4, 1/2, 3/4 |
| Ordering and Comparison  | Compare numbers with the same number of decimal places up to two decimal placesround decimals with one decimal place to the nearest whole number |
| **Algebra (to be introduced fully in Year 6)**  |
| Early introduction to Algebra  | Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction |
| **Ratio and Proportion (to be introduced fully in Year 6)**  |
| Early introduction to ratio and proportion  | Solve problems… involving multiplying and adding, including integer scaling problems |
| **Tier 1: everyday vocabulary** | Ten thousand, Hundred thousand, Integer positive integer, Positive number, Prime number, Composite number one squared, Two squared etc, Million, Term-to-term rule, Roman numerals to 1,000 (M) |
| **Tier 2: High frequency subject** | Common fraction, Simple fraction, Vulgar fraction, Proper fraction, Improper fraction, Mixed number, Mixed fraction, Reduced to, Cancel, Ninth, Twelfth, Thousandth, Percentage per cent % |
| **Tier 3: Low frequency technical vocabulary** | Units/ones boundary, Tenths boundary, Divisibility, Common factor, Prime factor, Divisor, Factorise |
| **Measurement**  | **Measurement**  |
| Space & measures | Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metresFind the area of rectilinear shapes by counting squaresUse all four operations to solve problems involving measure [eg length, mass, volume, money] using decimal notation, including scalingMeasures, compares, adds, and subtracts mass (kg/g)Converts between different units of mass/weight [for example, kilogram to gram]Estimates, compares, and calculates different length in meters and centimetresMeasures, compares, adds, and subtracts volume/capacity (l/ml) |
| Time | Solve problems involving converting between units of timeRead, write and convert time between analogue and digital 12- and 24-hour clocksSolve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to daysUses vocabulary such as o’clock, am/pm, morning, afternoon, noon, and midnight |
| Money  | Estimate, compare and calculate different measures, including money in pounds and penceAdds amounts of money to give change, using both £ and p in practical contextsSubtracts amounts of money to give change, using both £ and p in practical contexts |
| **Tier 1: everyday vocabulary** | Days, Weeks, Months, Hours, Minutes, Money  |
| **Tier 2: High frequency subject** | £, p, k/kg, m/ml, cm/m  |
| **Tier 3: Low frequency technical vocabulary** | Units of time, Volume, Perimeter,  |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizesRecognises 3D shapes in different orientations and describes them |
| Properties of shape | Identify lines of symmetry in 2-D shapes presented in different orientationsComplete a simple symmetric figure with respect to a specific line of symmetry |
| Angles | Order angles up to two right angles by size identify acute and obtuse angles and compareRecognises angles as a property of shape or a description of a turnIdentifies whether angles are greater than or less than a right angleRecognises that 3 right angles make three-quarters of a turnRecognises two right angles make a half-turnRecognises that 4 right angles make a complete turnIdentifies obtuse and acute angles |
| Perimeter, area & volume | Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metresFind the area of rectilinear shapes by counting squares |
| **Position and Direction** |
| Position and Direction  | Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squaresDraws, labels and plots coordinates in the first quadrantDescribes direction, position and movement using mathematical vocabularyDescribes movements between positions using the terms "up" and "down", "left" and "right"Describes a movement of position as a translationDraws a pair of axes with equal scalesLabels the axes on graphsDescribes a location using the eight points of a compass with support |
| **Tier 1: everyday vocabulary** | Sketch, Base, Square-based, Open, Closed, Spherical, Cylindrical, Heptagon, Polygon, Parallelogram, Rhombus, Trapezium, Line Symmetry, Reflect, Origin, Coordinates North-East, North-West, South-East, South-West (NE, NW, SE, SW), Rotate, Degree, Set Square, Angle Measurer, Compasses, Plot |
| **Tier 2: High frequency subject** | Construct, Concave, Convex, Scalene Triangle, Tetrahedron, Polyhedron, Equilateral Triangle, Isosceles Triangle, Axes  |
| **Tier 3: Low frequency technical vocabulary** | Translation, First Quadrant, |
| **Statistics** | **Statistics & Probability**  |
| Understanding and Drawing | Interprets and presents data using: bar charts, pictograms, tablesInterprets and presents discrete and continuous data using appropriate graphical methods, including bar charts and time graphsCollects and records data in a databaseDecides how to represent the data they have gatheredUnderstands and uses simple scales in pictograms and bar charts |
| Problem Solving  | Solves comparison, sum and difference problems using information presented in a range of graphs, charts and tablesIdentifies the data that needs collecting to answer the questionIdentifies ways to collect the data requiredReads and collects required information from timetablesSolves one- and two-step questions using information presented in pictograms, scaled bar charts and tables |
| **Tier 1: everyday vocabulary** | Bar Charts, Pictograms, Tables, Data  |
| **Tier 2: High frequency subject** | Discrete Data, Continuous data,  |
| **Tier 3: Low frequency technical vocabulary** | Database, Graphical Methods  |

**Step 8**

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|  | **Skills domains** |  |
| **Number** | **Counting and Place Value** |
| Counting  | Count forwards or backwards in steps of powers of 10 from any number up to 1minterpret negative numbers in contextCount forwards and backwards with positive and negative whole numbers, including through zeroUse negative numbers in context, and calculate intervals across zero |
| Using Numerals  | Read and write numbers to at least 1mRead and write numbers with up to three decimal placesReads Roman numerals to 1,000 and recognise years written in Roman numeralsKnow and use the vocabulary of prime numbers, prime factors and composite numbers |
| Place Value  | Determine the value of each digit up to 10mIdentify the value of each digit in numbers given to three decimal placesRounds any whole number to a required degree of accuracy |
| Application & problem solving | Solve number problems and practical problems |
| Comparing, ordering & rounding | Order and compare numbers to at least 1mOrder and compare numbers with up to three decimal placesCompare and order fractions whose denominators are all multiples of the same numberround any number up to 1m to the nearest 10, 100, 1,000, 10,000 and 100,000Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **Addition And Subtraction** |
| Understanding +/- | Use their knowledge of the order of operations to carry out calculations involving the four operations |
| Mental Methods | Add and subtract numbers mentally with increasingly large numbersPerform mental calculations, including with mixed operations and large numbers |
| Written Methods  | Add and subtract whole numbers with more than 4 digits, including using formal written (column) methods |
| Application & problem solving | Solve addition and subtraction multi-step problems in contexts, deciding which methods to use and why |
| Estimation & checking answers | Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracyUses rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **Multiplication And Division** |
| Understanding x/÷ | Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbersKnow and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbersEstablish whether a number up to 100 is prime and recall prime numbers up to 19Use their knowledge of the order of operations to carry out calculations involving the four operationsIdentify common factors, common multiples and prime numbers |
| Mental methods | Multiply and divide numbers mentally drawing upon known factsRecognise and use square numbers and cube numbers, and the notation for squared and cubedMultiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 |
| Written Methods  | Multiply numbers up to 4 digits by a one- or two-digit number using a formal written methodDivide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context |
| Application & problem solving | Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubesSolve problems involving each operation - or a combination of them - including understanding the meaning of the = signSolve problems involving multiplication and division, including scaling by simple fractions and simple ratio problems |
| **Fractions, Decimals and Percentages** |
| Application  | Solve problems involving number up to three decimal placesSolve problems which require answers to be rounded to specified degrees of accuracySolve problems involving the calculation of percentages [eg of measures, and such as 15% of 360] and the use of percentages for comparison |
| Conceptual Understanding  | Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalentsRecognise mixed numbers and improper fractionsRecognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’Identify the value of each digit in numbers given to three decimal places |
| Calculating  | Add and subtract fractions with the same denominator and denominators that are multiples of the same numberMultiply proper fractions and mixed numbers by whole numbers, supported by materials and diagramsCalculate using fractions, decimals or percentagesAdd and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractionsMultiply simple pairs of proper fractions, writing the answer in its simplest form [eg 1/4 x 1/2 = 1/8]Divide proper fractions by whole numbers [eg 1/3 ÷ 2 = 6]Use written division methods in cases where the answer has up to two decimal placesmultiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal placesMultiply numbers (<10) with up to two decimal places by whole numbers |
| Equivalence  | Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredthsConvert between mixed numbers and improper fractions and write mathematical statements > 1 as a mixed number [eg 2/5 + 4/5 = 6/5 = 1 1/5]Read and write decimal numbers as fractions [eg 0.71 = 71/100]Write percentages as a fraction with denominator 100, and as a decimal 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 [i.e. simpler ones like 1/10, 1/20, 1/25, 1/50, 1/100 but not 1/30, 1/70, 1/75, 1/125 etc]Use common factors to simplify fractions; use common multiples to express fractions in the same denominationRecall and use equivalences between simple fractions, decimals and percentages, including in different contextsCalculate decimal fraction equivalents [eg 0.375] for a simple fraction [eg 3/8] |
| Ordering and Comparison  | Compare and order fractions whose denominators are all multiples of the same numberread, write, order and compare numbers with up to three decimal placesRound decimals with two decimal places to the nearest whole number and to one decimal placeCompare and order fractions, including fractions > 1Solve problems involving… the use of percentages for comparison |
| **Algebra**  |
| Early introduction to Algebra  | Solve problems involving similar shapes where the scale factor is known or can be foundSolve problems involving unequal sharing and grouping using knowledge of fractions and multiplesExpress missing number problems algebraicallyUse simple formulae to solve problems generate and describe linear number sequencesfind pairs of numbers that satisfy an equation with two unknownsEnumerate possibilities of combinations of two variablesRecognise when it is possible to use formulae for area and volume of shapes |
| **Ratio and Proportion**  |
| Early introduction to ratio and proportion  | Solve problems involving multiplication and division, including scaling by simple fractionsSolve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division factsSolve problems involving the calculation of percentages [eg of measures, and such as 15% of 360] and the use of percentages for comparison |
| **Tier 1: everyday vocabulary** | Common multiple, Long division, Long multiplication, Common Denominator |
| **Tier 2: High frequency subject** | Brackets order of operations - BODMAS / BIDMAS,  |
| **Tier 3: Low frequency technical vocabulary** | Rational number, Proportion, Ratio, Quotient |
| **Measurement**  | **Measurement**  |
| Space & measures | Convert between different units of metric measure (eg kilometer and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)Understand and use approximate equivalences between metric… and imperial units [eg inches, pounds, pints]Uses all four operations to solve problems involving measure [e.g. length, mass, volume, money] using decimal notation, including scaling |
| Time | Complete, read and interpret information in… timetablesSolves problems involving converting between units of timeReads time to the nearest minuteSolves problems involving calculation and conversion of units of time |
| Money  | Expresses fractions, decimals and percentages of money as equivalent quantitiesUses all four operations to solve problems involving measure [e.g. length, mass, volume, money] using decimal notation, including scaling |
| **Tier 1: everyday vocabulary** | Units of measurement, Equivalent quantities  |
| **Tier 2: High frequency subject** | Metric measurement  |
| **Tier 3: Low frequency technical vocabulary** | Miles per hour |
| **Geometry** | **Properties of Shape** |
| Recognising shapes | Identify 3-D shapes, including cubes and other cuboids, from 2-D representationsCompare and classify geometric shapes based on their properties and sizesdraw 2-D shapes using given dimensions and anglesRecognise, describe and build simple 3-D shapes, including making netsDistinguishes between regular and irregular polygons based on reasoning about equal sides and anglesCompares and classifies geometric shapes based on their properties and sizesRecognises, describes, and builds simple 2D/3D shapes, including making nets |
| Properties of shape | Distinguish between regular and irregular polygons based on reasoning about equal sides and anglesUse the properties of rectangles to deduce related facts and find missing lengthsillustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
| Angles | Know angles are measured in degreesEstimate and compare acute, obtuse and reflex anglesDraw given angles, and measure them in degrees (o)Identify angles at a point: one whole turn (total 360o)Identify angles at a point on a straight line: half a turn (total 180o)Identify other multiples of 90oUse the properties of rectangles to… find missing anglesRecognise angles where they meet at a point, where they are on a straight line, or where they are vertically opposite, and find missing anglesFind unknown angles in any triangles, quadrilaterals, and regular polygonsFinds missing angles |
| Perimeter, area & volume | Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metresCalculate and compare the area of rectangles (including squares), including using standard units, square centimetres and square metres, and estimate the area of irregular shapesEstimate volume [eg using measured blocks to build cuboids (including cubes)] and capacity [eg using water]Recognise that shapes with the same areas can have different perimeters and vice versaCalculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres and cubic metres, and extending to other units [eg cubic mm or cubic km] |
| **Position and Direction** |
| Position and Direction  | 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 changeddescribe positions on the full coordinate grid (all four quadrants)Draw and translate simple shapes on the coordinate planeReflect simple shapes in the axes of a coordinate plane |
| **Tier 1: everyday vocabulary** | Congruent, Axis of symmetry, Reflective symmetry, Degrees, Angle/s on a straight line, Angle/s at a pointReflex angle, Diagonal, Rotation, Symmetry, Protractor |
| **Tier 2: High frequency subject** | Circumference, Radius, Diameter, Arc, Intersecting, Intersection, Plane, Kite, Net, Cross-section, Vertically opposite angles |
| **Tier 3: Low frequency technical vocabulary** | Concentric, Tangram, Dodecahedron, Icosahedron, Octahedron |
| **Statistics** | **Statistics & Probability**  |
| Understanding and Drawing | Complete, read and interpret information in tables, including timetablesInterpret and construct pie charts and line graphsDecides which representations of data are most appropriate and whyEncounters and draws graphs relating two variablesConnects, coordinates and scales to interpretation of time graphs |
| Problem Solving  | Solve comparison, sum and difference problems using information presented in a line graphUse pie charts and line graphs to solve problemsCalculate and interpret the mean as an averageAsks questions of the data they have generatedIdentifies questionable data giving reasons |
| **Tier 1: everyday vocabulary** | Database, Line Graph, Bar Line Chart, Timetable, Maximum, Minimum, Value, Pie Chart, Average, Statistics |
| **Tier 2: High frequency subject** | Mode, Range, Outcome, X-axis, Y-axis, Mean, Median |
| **Tier 3: Low frequency technical vocabulary** | Distribution, Rate, Sample |