Year 6 Small Steps

Year 6			
Number and Place Value			
Vocabulary: Numbers to ten million, digit, integer (negative numbers, count back through zero).			
Autumn 2-week block			
Step		**NC links**	**Notes:**
1	Numbers to 1,000,000	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit	
2	Numbers to 10,000,000		
3	Compare and order any integers		
4	Rounding any integer	Round any whole number to a required degree of accuracy	This step may need more than one lesson.
5	Negative numbers	Use negative numbers in context, and calculate intervals across zero	This step may need more than one lesson.
6	Application	Solve number and practical problems that involve the above	
Year 6			
Addition, subtraction, multiplication and division			
Vocabulary: Order of operations, BODMAS; common multiple, lowest common multiple (factor, common factor, prime)			
Autumn 5-week block			
Step		**NC links**	**Notes:**
1	Application of addition and subtraction	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	This step may need more than one lesson.
2	Factors, multiples and prime	identify common factors, common multiples and prime numbers	This step can be broken down as needed.
3	Multiply up to a 4-digit number by a 2-digit number	Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written Divide numbers up to four digits by a 2-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	
4	*Short division		
5	*Long division		
6	Division with remainders		
7	Order of operations	Use their knowledge of the order of operations to carry out calculations involving the four operations	
8	Application	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy Solve problems involving addition, subtraction, multiplication and division	Including estimation.
Year 6			
Fractions, Decimals and Percentages			
Vocabulary: Cancel, highest common factor, common denominator (equivalent, unit and non-unit fractions, percent)			
Autumn 7-week block			
Step		**NC links**	**Notes:**
1	Equivalent fractions and simplifying	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	
2	Compare and order fractions	Compare and order fractions, including fractions > 1	This is two steps on WRM.

3	Add and subtract fractions	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	Opportunities for consolidation during arithmetic.
4	Add and subtract mixed numbers		
5	Solve multi-step problems with fractions	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	
6	Multiply fractions by integers	Multiply proper fractions and mixed numbers by whole numbers Multiply simple pairs of proper fractions, writing the answer in its simplest form	
7	Multiply fractions by fractions		
8	Divide fractions by an integer	Divide proper fractions by whole numbers	
9	Fractions of an amount	Associate a fraction with division and calculate decimal fraction equivalents	
10	Fractions of an amount – find the whole		
11	Solve problems with fractions using all operations	Solve problems involving addition, subtraction, multiplication and division Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	
12	Place value – integers and decimals	Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places	
13	Round decimals	Solve problems which require answers to be rounded to specified degrees of accuracy	
14	Multiply decimals by integers	Multiply 1-digit numbers with up to 2 decimal places by whole numbers	
15	Divide decimals by integers	Use written division methods in cases where the answer has up to 2 decimal places	
16	Solve problems in context – multiplying and dividing decimals	Use written division methods in cases where the answer has up to 2 decimal places Multiply 1-digit numbers with up to 2 decimal places by whole numbers	
17	Fractions as division	Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction	
18	Decimal and fraction equivalents	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	
19	Understanding percentages	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	
20	Equivalent fractions, decimals and percentages		
21	Percentages of amounts	Solve problems involving the calculation of percentages and the use of percentages for comparison	
22	Percentage problems – including missing values		
Year 6			
Ratio and Algebra			
Vocabulary: Function, input, output; algebra, algebraic, rule; expression; substitute; formula, formulae; equation; value, possible values, enumerate proportion; for every ___there are_,			
Spring 4-week block			
Step		**NC link**	**Notes:**
1	Introducing ratio	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	
2	Ratio and fractions		

3	Ratio problems	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	
4	Proportion problems –inc. recipes		
5	Scale drawing	Solve problems involving similar shapes where the scale factor is known or can be found	
6	Scale factors and similar shapes		
7	1 and 2 step function machines	Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically	
8	Form expressions		
9	Substitution		
10	Formulae and form equations		
11	Solve 1 and 2 step equations		
12	Find pairs of values	Enumerate possibilities of combinations of two variables Find pairs of numbers that satisfy an equation with two unknowns	
13	Solve problems with two unknowns		
Year 6			
Statistics			
Vocabulary: Mean, pie chart (Continuous data, discrete data; line graph, x-axis, y-axis)			
Spring 2-week block			
Step		**NC link**	**Notes:**
1	Line graphs	Interpret and construct pie charts and line graphs and use these to solve problems Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4)	
2	Dual bar charts		
3	Read and interpret pie charts (including percentages)		
4	Draw pie charts		
5	The mean	Calculate and interpret the mean as an average	
Year 6			
Converting units			
Vocabulary: Tonnes, ounces, stone, miles (imperial units, metric units, inches, lbs, pints)			
Spring 1 week block			
Step		**NC link**	**Notes:**
1	Metric measures	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places	
2	Converting metric measures		
3	Solve problems using measures	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate	

4	Miles and Kilometres	convert between miles and kilometres	
5	Imperial measures		
Year 6			
Area, perimeter and volume			
Vocabulary: (Area, perimeter, polygons, compound shape, cm², volume, capacity, cm cubed/cubic cm)			
Spring 2-week block			
Step		**NC links**	**Notes:**
1	Shapes – same area	Recognise that shapes with the same areas can have different perimeters and vice versa	
2	Area and perimeter	Recognise when it is possible to use formulae for area and volume of shapes	
3	Area of triangles	Calculate the area of parallelograms and triangles Recognise when it is possible to use formulae for area and volume of shapes	
4	Area of parallelogram		
5	Volume – counting cubes	Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units	
6	Calculating volume of cuboids		
7	Application	All of the above.	
Year 6			
Shape			
Vocabulary: Vertically opposite (angles), internal angles; circumference, radius, diameter, centre			
Spring 2-week block			
Step		**NC link**	**Notes:**
1	Measure and classify angles	Draw given angles, and measure them in degrees (°) (Y5) Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5) Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
2	Calculate angles		
3	Vertically opposite angles	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
4	Angles in a triangle	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	
5	Angles in a quadrilateral		
6	Angles in polygons		
7	Circles	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	
8	Draw shapes accurately	Draw 2-D shapes using given dimensions and angles	
9	Nets of 3-D shapes	Recognise, describe and build simple 3-D shapes, including making nets	

Year 6 Small Steps

Year 6			
Position and direction			
Vocabulary: Four quadrants (Reflection, reflect, translation, first quadrant, x-axis, y-axis)			
Spring 1 week block			
Step		**NC link**	**Notes:**
1	Read and plot points in four quadrants	Describe positions on the full coordinate grid (all four quadrants)	
2	Solve problems with coordinates		
3	Translations	Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	
4	Reflections		

Year 6 Small Steps

Basic Knowledge DELTA progression to MTC and beyond:
Consolidate all X / ÷ to 12X12 Extend into basic skills: eg If 7X6=42 then what is 70X60? Further extend: eg If 7X6=42, then what is 0.07X6? If 42÷6=7, then what is 4.2÷6?

DELTA SSA end points:

Place Value	Addition	Subtraction	Multiplication	Division	Fractions
8,000,000 + ☐ + 40,000 6,000 + 500 = 8,346,500	52.92 + 8.093 =	/,	3324 X 26	17 ⟌ 8154	$2\frac{1}{3} + \frac{5}{6} =$

Basic Knowledge and Basic Skills from NC

Strand		NC links	Notes
PV	Powers of 10	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit	Ensure pupils have opportunities to apply their knowledge during times table stick sessions
M&D	Common factors and multiples	Identify common factors, common multiples and prime numbers	
M&D	Rules of divisibility	Solve problems involving addition, subtraction, multiplication and division	
M&D	Primes to 100	Identify common factors, common multiples and prime numbers	As above
M&D	Square and cube numbers		
M&D	Division using factors		
M&D	Mental calculations and estimation	Perform mental calculations, including with mixed operations and large numbers Solve problems involving addition, subtraction, multiplication and division	Model metal methods and strategies during arithmetic sessions.
M&D	Reason with known facts		
Dec	Add and subtract decimals	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	This comes into many addition and subtraction lessons, e.g. when using money etc – use this as an opportunity to consolidate place value when adding and subtracting numbers which have different numbers of decimal places.
Dec	Multiply and divide by 10, 100 and 1,000	Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places	