Consett Infant School Maths Skills Progression Map

This document has been created using both White Rose Maths documentation and NCETM suggestions for progression to ensure the best fit for Consett infant school. Sections in *italics* link to non-statutory guidance. National Curriculum objectives are in black, White Rose objectives (where different) are in red. Where statutory National Curriculum objectives are met by White Rose, this is indicated with *. Reception's objectives are taken from Development matters in green, the EYFS Framework in blue, and White Rose in red. Where objectives have not been able to match exactly, a best fit method has been used.

Consett Infant School Skills Progression map – Number and place value

Counting		
Reception	Year 1	Year 2
The one-one principle – one number name to each number that is being counted ensuring they count each object only once.	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number *	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward *
The stable-order principle. Children understand that numbers must be said in a certain order.	Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens *	*Count, read and write numbers to at least 100*
Understand the cardinal counting principle (the last number said represents the total number in the group)	Given a number, identify one more and one less *	*Pupils may be introduce to larger numbers to develop further recognition of patterns within the number system*
Count objects, actions and sounds. Known as the Abstraction principle – anything can be counted.	*Pupils practise counting (1, 2, 3...)*	
The order-relevance principle. The order that a group of objects of counted is irrelevant.	*Pupils practise ordering (first, second, third)*	
Subitise	*Pupils use number to indicate quantity (e.g. 3 apples, 2 centimetres)*	
Count verbally beyond ten.	*Begin to recognise value in numbers beyond 20 by reading, writing and comparing numbers up to 100 (also in comparing numbers)*	
	Count in 2s, 5s and 10s from different multiples	
	Recognise patters in the number system (e.g. odd and even numbers)	

	Recognise and create patterns with objects and shapes (also in geometry)	

Comparing numbers		
Reception	Year 1	Year 2
Compare numbers. Adult model vocabulary: 'more than', 'less than', 'fewer', 'the same as', 'equal to'.	Use the language of: equal to, more than, less than (fewer), most, least *	Compare and order numbers from 0 up to 100; use and <, > and = signs *
Understand the 'one more than/one less than' relationship between consecutive numbers.	*Begin to recognise value in numbers beyond 20 by reading, writing and comparing numbers up to 100 (also in comparing numbers)*	*Compare numbers to at least 100*

Identifying, representing and estimating numbers		
Reception	Year 1	Year 2
Link the number symbol (numeral) with its cardinal number value (using cards)	Identify and represent numbers using objects and pictorial representations including the number line *	Identify, represent and estimate numbers using different representations, including the number line *

Reading and writing numbers		
Reception	Year 1	Year 2
Link the number symbol (numeral) with its cardinal number value (using cards).	Read and write numbers from 1 to 20 in numerals and words. *	Read and write numbers to at least 100 in numerals and in words *

Understanding place value		
Reception	Year 1	Year 2
		Recognise the place value of each digit in a two-digit number (tens, ones) *
		Partition numbers in different ways (for example, 23=20+3 and 23=10+13) to support later subtraction (also in addition and subtraction)
		Begin to understand 0 as a place holder

Problem solving		
		Use place value and number facts to solve problems *

Consett Infant School Skills Progression map – Addition and subtraction

Number bonds		
Reception	Year 1	Year 2
Explore the composition of numbers to 10. Begin with numbers 2, 3, 4 and 5 before moving on to larger numbers.	Represent and use number bonds and related subtraction facts within 20 *	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 *
Automatically recall number bonds for numbers 0–5 and some to 10.	*Memorise and reason with number bonds to 10 and 20 in several forms, for example 9+7=16; 16-7=9; 7=16-9 (also in inverse operations)*	*Practise addition and subtraction to 20 to become increasingly fluent facts such as 3+7=10; 10-7=3 and 7=10-3 to calculate 30+70=100; 100-70=30 and 70=100-30*

Mental calculation		
Reception	Year 1	Year 2
Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	Add and subtract one-digit and two-digit numbers to 20, including zero *	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 * • adding three one-digit numbers *
Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) *	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot *
	Pupils should realise the effect of adding zero	
	Count forwards and backwards to add and subtract	

Written methods		
Reception	Year 1	Year 2
	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation) *	*Partition numbers in different ways (for example, 23=20+3 and 23=10+13) to support later subtraction (also in place value)*

		Record addition and subtraction in columns

Inverse operations, estimating, checking answers		
Reception	Year 1	Year 2
	Pupils memorise and reason with number bonds to 10 and 20 in several forms, for example 9+7=16; 16-7=9; 7=16-9 (also in inverse number bonds)	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. *
		Check calculations, including by adding to check subtraction and adding numbers in a different order to check addition.

Problem solving		
Reception	Year 1	Year 2
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = __- 9 *	Solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, quantities and measures * • applying their increasing knowledge of mental and written methods *
	Problems should include the terms: put together, add, altogether, total, take away, distance between, difference between, more than and less than so that pupils understand addition and subtraction and are enabled to use these operations flexibly.	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement) *

Consett Infant School Skills Progression map – Multiplication and division

Multiplication and division facts		
Reception	Year 1	Year 2
	Count in multiples of twos, fives and tens (copied from Number and Place Value) *	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value) *
	Through grouping and sharing small quantities, pupils begin to understand: multiplication and division, doubling numbers and quantities and finding simple fractions of objects, numbers and quantities.	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers *
	Make connections between arrays, number patterns, and counting in twos, fives and tens.	*Connect the 10 multiplication table to place value and the 5 multiplication table to the divisions on a clock face*
		Understand that multiplication and division relates to grouping and sharing discrete and continuous quantities, to arrays and repeated addition

Mental calculation		
Reception	Year 1	Year 2
		Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot *

Written calculation		
Reception	Year 1	Year 2
		Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs *

Problem solving		
Reception	Year 1	Year 2
	Solve one-step problems involving multiplication and division, by calculating the	Solve problems involving multiplication and division, using materials, arrays,

	answer using concrete objects, pictorial representations and arrays with the support of the teacher *	repeated addition, mental methods, and multiplication and division facts, including problems in contexts *

Consett Infant School Skills Progression map – Fractions

Counting in fractional steps		
Reception	Year 1	Year 2
		Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)

Recognising fractions		
Reception	Year 1	Year 2
	Recognise, find and name a half as one of two equal parts of an object, shape or quantity *	Recognise, find, name and write fractions 1 / 3 , 1 / 4 , 2 / 4 and 3 / 4 of a length, shape, set of objects or quantity *
	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity *	*Solve problems using shapes, objects and quantities*
	Connect halves and quarters to the equal sharing and grouping of sets of objects and to measures	*Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated and to measures, finding fractions of lengths, quantities, sets of objects or shapes.*
	Recognise and combine halves and quarters as parts of a whole	*Meet ¾ as the first example of a non-unit fraction*

Equivalence		
Reception	Year 1	Year 2
		Write simple fractions e.g. 1 / 2 of 6 = 3 and recognise the equivalence of 2 / 4 and 1 / 2 *

Consett Infant School Skills Progression map – Measure

Comparing and estimating		
Reception	Year 1	Year 2
Compare length, weight and capacity.	Compare, describe and solve practical problems for: • lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * • mass/weight [e.g. heavy/light, heavier than, lighter than] * • capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * • time [e.g. quicker, slower, earlier, later] *	Compare and order lengths, mass, volume/capacity and record the results using >, < and = *
	Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] *	Compare and sequence intervals of time *
	Use non-standard units to compare discrete and continuous measurement	*Compare measures including simple multiples such as 'half as high' and 'twice as wide'*
	Use standard units to compare discrete and continuous measurement	

Measuring and calculating		
Reception	Year 1	Year 2
	Measure and begin to record the following: • lengths and heights * • mass/weight * • capacity and volume * • time (hours, minutes, seconds) *	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels *
	Recognise and know the value of different denominations of coins and notes *	Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value *

	Use non-standard units to measure discrete and continuous amounts	Find different combinations of coins that equal the same amounts of money *
	Use standard units to measure discrete and continuous amounts	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change *
	Begin to use measuring tools such as a ruler, weighing scales and containers	*Use appropriate language and record using standard abbreviations*

Telling the time		
Reception	Year 1	Year 2
	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. *	Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. *
	Recognise and use language relating to dates, including days of the week, weeks, months and years *	Know the number of minutes in an hour and the number of hours in a day. (appears also in Converting) *
		Become fluent in reading the time on analogue clocks and recording it

Converting		
Reception	Year 1	Year 2
		Know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time) *

Consett Infant School Skills Progression map – Geometry – properties of shape

Identifying shapes and their properties		
Reception	Year 1	Year 2
Select, rotate and manipulate shapes to develop spatial reasoning skills.	Recognise and name common 2-D and 3-D shapes, including: • 2-D shapes [e.g. rectangles (including squares), circles and triangles] * • 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. *	Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line *
Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can	*Recognise and create patterns with objects and shapes (also in Number: Place Value: counting)*	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces *
Continue, copy and create repeating patterns.	*Name 2D and 3D shapes in everyday objects*	Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] *
	Recognise 2D and 3D shapes in different orientations and sizes	Recognise and name common 3D shapes. *Handle and name a wide variety of common 2D and 3D shapes including: quadrilaterals and polygons, and cuboids, prisms, cones.*
		Read and write the names of shapes (appropriate to word reading and spelling level)
		Draw lines and shapes using a straight edge
		Work with patterns of shapes, including those in different orientations (also in position and direction)

Comparing and classifying		
Reception	Year 1	Year 2
		Compare and sort common 2-D and 3-D shapes and everyday objects * *on the basis of their properties and use vocabulary precisely, such as sides, edges, vertices and faces*

Consett Infant School Skills Progression map – Geometry – position and direction

Position, direction and movement		
Reception	Year 1	Year 2
	Describe position, direction and movement, including half, quarter and three-quarter turns * *including clockwise and anticlockwise and link clockwise to the movement of the hands on a clock face.*	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 anti-clockwise) * **cross curricular link to Computing - Beebots*
	Use language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.	*Work with patterns of shapes, including those in different orientations (also in properties of shapes)*

Pattern		
Reception	Year 1	Year 2
		Order and arrange combinations of mathematical objects in patterns and sequences *

Consett Infant School Skills Progression map – statistics

Interpreting, constructing and representing data		
Reception	Year 1	Year 2
		Interpret and construct simple pictograms, tally charts, block diagrams and simple tables *
		Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity *
		Ask and answer questions about totalling and comparing categorical data *
		Record, interpret, collate, organise and compare information (for example, using many one-to-one correspondence in pictograms with simple ratios 2, 5 and 10)

Consett Infant School Skills Progression map – Algebra

Whilst algebra does not appear as a separate statutory requirement in the National Curriculum in its own right, it is woven throughout other units.

Equations		
Reception	Year 1	Year 2
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = __ - 9 (copied from Addition and Subtraction) *	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. (copied from Addition and Subtraction) *
		Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction) *
	Represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction) *	

Sequences		
Reception	Year 1	Year 2
	Sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement) *	Compare and sequence intervals of time (copied from Measurement) *
		Order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction) *

Note: This is a working document and as such may be subject to change. Where National Curriculum objectives have been stated, these will remain fixed whilst working in line with the National Curriculum 2014.