Whole School Maths Curriculum Overview: Year 1

#TheSmawthorneExperience

Year 1	Spring Term				
Topic	Place Value (within 20)	Addition and Subtraction (within 20)	Place Value (within 50)	Length and Height	Mass and Volume
The Big Ideas	The position a digit is placed in a number determines its value. The language used to name numbers does not always expose the place value, for example the word 'twelve' does not make it transparent that the value of this number is ten and two. It is important that children develop secure understanding of the value of each digit. Place value is based on unitising: treating a group of things as one 'unit'. In mathematics, units can be any size, for example units of 1, 2, 5 and 10 are used in money. In place value units of 1, 10 and 100 are used.	Relating numbers to 5 and 10 helps develop knowledge of the number bonds within 20. For example, given 8 + 7, thinking of 7 as 2 + 5 and adding the 2 to 8 to make 10 and then the 5 to total 15. Thinking of part whole relationships is helpful in linking addition and subtraction. For example, where the whole is 6, and 4 and 2 are parts. This means that 4 and 2 together form the whole, which is 6 and 6 subtract 4 leaves the 2 and 6 subtract 2 leaves the 4.	The position a digit is placed in a number determines its value. The language used to name numbers does not always expose the place value, for example the word 'twelve' does not make it transparent that the value of this number is ten and two. It is important that children develop secure understanding of the value of each digit. Place value is based on unitising: treating a group of things as one 'unit'. In mathematics, units can be any size, for example units of 1, 2, 5 and 10 are used in money. In place value units of 1, 10 and 100 are used.	Measurement is about comparison, for example measuring to find out which rope is the longest. Measurement is about equivalence, for example how many cubes are equivalent to the length of the table or the mass of the teddy? Standard units can initially be introduced through using a unit that is greater than the things being compared, for example comparing the capacity of a cup and a carton by filling each and pouring into matching bottles to compare the two. Measuring is a practical activity and the activities below should be conducted in practical contexts, using real materials.	
Key Knowledge and Skills	• Count within 20 • Understand 10 • Understand 11,12,13 • Understand 14,15,16 • Understand 17,18,19 • Understand 20 • 1 more and 1 less • The number line to 20 • Use a number line to 20 • Estimate on a number line to 20 • Compare number to 20	• Add by counting on within 20 • Add ones using number bonds • Find and make number bonds to 20 • Doubles • Near doubles • Subtract ones using number bonds • Subtraction – counting back	• Count from 20 to 50 • 20, 30, 40 and 50 • Count by making groups of tens • Groups of tens and ones • Partition into tens and ones • The number line to 50	• Comapre lengths and heights • Measure length using objects • Measure length in centimetres	• Heavier and lighter • Measure mass • Compare mass • Full and empty • Compare volume • Meaure capacity • Compare capacity

	• Order numbers to 20	• Subtraction – finding the difference • Related facts • Missing number problems	• Estimate on a number line to 50 • 1 more, 1 less		
National Curriculum Statements	• Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number. • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • Read and write numbers from 1 to 20 in numerals and words • Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s • Given a number, identify 1 more and 1 less	• Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. • Represent and use number bonds and related subtraction facts within 20. • Add and subtract one-digit and two-digit numbers to 20, including zero. • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.	• Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s •Read and write numbers from 1 to 20 in numerals and words •Given a number, identify 1 more and 1 less	• Compare, describe and solve practical problems for: lengths and heights; mass/weight; capacity and volume; time • Measure and begin to record the following: lengths and heights; mass/weights; capacity and volume; time	• Compare, describe and solve practical problems for: lengths and heights; mass/weight; capacity and volume; time • Measure and begin to record the following: lengths and heights; mass/weights; capacity and volume; time
Misconceptions	• Children may find the numbers 11, 12, 13 and 15 confusing, as they cannot hear the 1, 2, 3 and 5 within them. • Children may find writing teen numbers tricky, in particular reversing the digits. For	Children may count all the items, starting from 1, rather than counting on from one of the numbers in the addition. Children may always start from the first number in the addition, rather than starting from the greatest number.	• As children have become familiar with teen numbers, they may use these interchangeably with multiples of 10, for example saying "thirteen" instead of "thirty". • When counting backwards from a multiple	• Children may confuse the words "longer" and "taller". • If children do not line up the objects they are comparing, they may decide incorrectly which is longer/taller. • Children may think that two different objects cannot be	• Children may think that larger objects are always heavier. • Children may think that if an object can hold something inside, it must be heavy. For example, they may think a box must be heavy

	example, when saying 16, they hear the 6 first, so may write 61 • Children may struggle to understand that 1 ten is made up of 10 ones. Ensure that they explore this in a variety of ways. • Where 10 is represented using a single piece of equipment, for example a single base 10 piece, children may struggle to recognise the 10 ones as they cannot physically break the representation apart. Children may find the numbers 11, 12 and 13 confusing, as they cannot hear the 1, 2 or 3 within the number word Children may reverse the digits, for example writing 41 instead of 14, because they say the 4 before "teen".	If children are not secure with number bonds within 10, they may make errors when trying to find the related facts within 20 Children may not see that they can use a single number bond within 10 to find two different addition facts within 20, for example using 3 + 2 to work out both 13 + 2 and 12 + 3 Children may add a 10 to both numbers, for example 14 + 16 = 20 • Children may miscalculate if they are using counting on as a strategy for working out the number bond. Using equipment such as ten frames can help with this • Children may make mistakes when adding. • Some children may think that double 2 is 22 or double 3 is 33, because they can see the number twice	of 10, children may start going forwards again, for example 42, 41, 40, 41 • Children may reverse the digits of 2-digit numbers, for example writing "41" as "14". • Children may count groups of 10 as discrete objects rather than groups of objects, for example counting 4 packs of 10 pencils as "4 pencils". • Children may not recognise that 40 is greater than 39, because they are looking at the digit in the ones place value position instead of th • Children may not correctly group objects into tens. • Children may reverse the digits in a 2-digit number. • Children may not generalise that the group of 10 objects is equal to 1 ten, which can lead to them counting, for example, 3 bundles of 10 straws and 4 extra straws as 7 • Children may write 2-digit numbers incorrectly. For example, if there are 3 tens and 4 ones, they may write this as 304 rather than 34	equal in length/height. • Children may think that they can use a combination of different objects to measure a length. • When comparing lengths, children may think that they can use a different unit of measure for each item. • Children may measure from the start of the ruler rather than from zero. • Children may just look at the final number without beginning of the object. ensuring that the ruler is lined up so that zero is at the • For measures that are not an exact number of centimetres, children may be unsure what to do	because it can hold things inside it. • Children may find it difficult to balance objects exactly using non-standard units. For example, an object may be heavier than 3 bricks, but lighter than 4 bricks. • When using objects as non-standard units for measuring, children may think that a certain type of object has a certain mass, for example that all cubes have the same mass, or all bricks have the same mass.

Stem sentences	• The number that comes after _______ is • The number that comes before ________ is • There are ________- cubes. • The ten frame is full, so I know that I have made __________• There are ________ There are ___ ones in 10 ones in ten. • 11 has _________- ones • 12 has_______ ones 14 has _______ tens and ______ ones There are ____ empty spaces on the tens frame.	First, I had ______ Then I counted on _____ Now I have ______ To work out ____ + ________ , I will count on from _______ _____and _____are a number bond to So _____ and ______ are a number bond to ______ • There are ______ ones altogether and _____ ten, so the total is ______ _____ + ______ = _____ so double _____ = +_________ ______ is 1 more than ______ and then add 1 • Double _____ , so I can work out double ______ plus 1 is equal to ______ ______ is 1 less than ____ , so I can work out double ______and then subtract 1	• The number that comes after _____ is _____ • The number that comes before _____ is ______ I will/will not say the number _____, because … ______ ten frames are full, so I know that I have made _____ There are ______ ones in ______ tens in ______	In Year 1, children learn to compare lengths and heights using descriptive vocabulary like "long," "short," "tall," and "small". They begin to understand that height is a type of length and use terms like "longer," "shorter," "taller," and "smaller" when comparing objects. Children will also be introduced to using sentence stems to describe and compare lengths and heights, such as "The [object] is [longer/shorter/taller/smaller] than the [object]".	Mass (Weight): • "The book is heavier than the feather." • "The toy car is lighter than the doll." • "The apple weighs more than the grape." • "This box is heavier than that one." Volume: "The glass is full of juice., "The bucket is nearly empty., "This bottle has more water than the small cup., "The container is full., and "The jug is half full..
Progression	EYFS: • Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10. • Play games that involve moving along a numbered track, and understand that larger numbers are further along the track. • Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly. Year 2: • Count through the number system. Place value within 100. Compare and order numbers. Add and	EYFS: • Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers.• Devise and record number stories, using pictures, numbers and symbols (such as arrows). Year 2: • Add and subtract within 10. • Represent composition and decomposition of numbers using equations.	EYFS: • Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10. • Play games that involve moving along a numbered track, and understand that larger numbers are further along the track. • Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly. Year 2: • Count through the number	Year 2: • choose and use appropriate standard units to estimate andmeasure length/height in any direction (m/cm);mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit,using rulers,scales, thermometersand measuring vessels • compare and order lengths,mass, volume/capacity andrecord the results using >, < and =	Year 2: (mass, capacity and temp) • 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, thermometersand measuring vessels • compare and order lengths,mass,

	subtract within 100 • Reason about the location of larger numbers within the linear number system. Compare and order numbers. Read scales. Begin to experience partitioning and combining numbers within 10. 1NF–1 Develop fluency in addition and subtraction facts within 10. • Add and subtract across 10. All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging). • Recall the 2, 5 and 10 multiplication tables. Carry out repeated addition and multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and even numbers.		system. Place value within 100. Compare and order numbers. Add and subtract within 100 • Reason about the location of larger numbers within the linear number system. Compare and order numbers. Read scales. Begin to experience partitioning and combining numbers within 10. 1NF–1 Develop fluency in addition and subtraction facts within 10. • Add and subtract across 10. All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging). • Recall the 2, 5 and 10 multiplication tables. Carry out repeated addition and multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and even numbers.		volume/capacityandrecord the results using >, < and =
Key Vocabulary	units, ones, tens, exchange, digit 'teens' number, the same number as, as many as, equal to, Of two objects/amounts:, greater, more, larger, bigger, less, fewer, smaller Of three or more objects/amounts: greatest, most, biggest, largest least, fewest, smallest, one more, ten more, one less, ten less, compare	add, more, plus, make, sum, total, altogether, score, double, near double, one more, two more… ten more, how many more to make…?, how many more is… than…?, how much more is…?, -, subtract, take (away), minus, Leave, how many are left/left over?, how many have gone? one less, two less, ten less…, how many fewer is… than…? how	units, ones, tens, exchange, digit 'teens' number, the same number as, as many as, equal to, Of two objects/amounts:, greater, more, larger, bigger, less, fewer, smaller Of three or more objects/amounts:	length, width, height, depth long, short, tall high, low wide, narrow deep, shallow thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, near, close	weigh, weighs, balances heavy/light, heavier/lighter, heaviest/lightest balance, scales, weight full, half full, empty, holds, container

	order, size, first, second, third… tenth, eleventh… twentieth, last, last but one, before, after next, between, half-way between above, below	much less is…?, difference between, half, halve, =, equals, sign, is the same as	greatest, most, biggest, largest least, fewest, smallest, one more, ten more, one less, ten less, compare order, size, first, second, third… tenth, eleventh… twentieth, last, last but one, before, after next, between, half-way between above, below	metre ruler, metre stick	

*Red words are the newly taught vocabulary.