Whole School Maths Curriculum Overview: Year 1

#TheSmawthorneExperience

Year 1	Autumn Term		
Topic	Place Value (within 10)	Addition and Subtraction (within 10)	Geometry - shape
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.	It is important for children to be familiar with a range of 2-D and 3-D shapes and not just recognise them in specific orientations, e.g. thinking that this  is a triangle but this  or this  are not. It is preferable to introduce 3-D shapes before 2-D shapes, since 2-D shapes only exist in the real world as faces of 3-D shapes. An emphasis should be placed upon identifying and describing the properties of shapes. It is important that pupils develop the correct mathematical language to do so.
Key Knowledge and Skills	• Sort objects • Count objects • Count objects from a larger group • Represent objects • Recognise numbers as words • Count on from any number 1 more • Count backwards within 10 • 1 less • Compare groups by matching • Fewer, more, same • Less than, greater than, equal to • Compare numbers • Order objects and numbers • The number line	• Introduce parts and wholes • Part-whole model • Write number sentences • Fact families – addition facts • Number bonds within 10 • Systematic number bonds within 10 • Number bonds to 10 • Addition – add together • Addition – add more • Addition problems • Find a part • Subtraction – find a part • Fact families – the eight facts • Subtraction – take away/cross out (How many left?) Take away (How many left?)	• Recognise and name 3-D shapes • Sort 3-D shapes • Recognise and name 2-D shapes • Sort 2-D shapes • Patterns with 2-D and 3-D shapes

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 Compare numbers using <, > and = signs Read and write numbers from 1 to 20 in numerals and words	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.	Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].
Misconceptions	Children may think that a group of objects can only be sorted in one way. •Children may not focus on a single similarity, but instead on different attributes, leading to incorrect placement of objects in some sets. Children may count objects more than once or miss an object out. Encourage them to line up objects and touch each one as they count, saying one number per object. Children may count objects more than once or miss an object out that needs to be counted. Encourage children to line up objects and touch each one as they count, saying one number per object. • The objects that have been counted may get mixed up with the rest of the objects. Encourage children to place the objects that they have counted onto a mat or into a container to help them.Some children may miscount when representing objects. have 1 more.	• Children may make mistakes counting. Encourage children to subitise (to recognise instantly how many objects there are without counting). • Children may mix up what the parts are and what the whole is. Physical activities can help with this, such as children standing in two hoops to make the parts, then physically coming together to make the whole. Children may assume that the whole is always at the top of the diagram, so expose them to the part-whole model in different orientations. • When using interlocking cubes, ensure that children join the cubes together to make the whole rather than create an additional row of cubes, which could cause confusion about what the total is. • Encourage children to use the phrase "is equal to" rather than "equals".	• Children may think that a 3-D shape can only be placed or viewed in a certain way. Ensure that children are exposed to shapes in different orientations. • Children may be familiar with the names of 2-D shapes from earlier learning or real-life experience, and may confuse these names with the names of 3-D shapes. • If children are not used to seeing 3-D shapes presented in different orientations, they may try to sort by shapes that are "upside down". • Children may think that cubes and cuboids can never be sorted into the same group, because they do not realise that a cube is a special type of cuboid. • Children may not recognise that a square is a special type of rectangle. • Children may think that each shape can only be placed or viewed in a certain way. Ensure that children are exposed to these shapes in different orientations. •

Stem sentences	This set of objects has been sorted by • I could also sort the objects by • does belong in the set because ... • does not belong in the set because ... The last number I said was _____, so there are _____objects in total. The last number I said was ___ so there are ___ objects in total. There are _____ objects left in the group. • I can use a _____to represent each carrots. I am using 1 counter to represent each carrot. I need ____ carrots. • The numeral for five is _____ • The numeral for _____ is _____ I need to start counting from_____ • The number that comes after _____ is • I will say the number _____ because ... • I will not say the number _____ because … • 1 more than _____ is • _____ is 1 more than_____- • First there were ... Then ... Now there are ... • The number that comes before _____ is • When counting backwards from say are ... • 1 less than____ is _____ • _____ is 1 less than _____ • There are children and presents. Each child can/can not have a present because ... • I know that there are/are not enough objects/pictures to match them all up because … • Sam has •_____ cubes than Mo.	• _____is a part. The whole is _____ • There is/are _____in each part. _____ is the whole ____ plus ___ is equal to _____ ____is equal to ____ plus _____ _____ + _____ = _____ - _____ = _____ = ____ + _____ There are ____ red counters and ___ yellow counter There are ____ counters altogether. This means that ____ and _____ are a bond to _____ _____ + _____ = 10 One part is _____ and the other part is _____ First there were _____ Then ____ more were added Now there are _____ The bond to ___ for ____ is ____ plus _____ is equal to _____ If the whole is ____ and _____ is a part, then the other part is _____ ____ plus _____ is _____ The bond to ___ for ____ is_____ _____ is a part, _____ is a part and _____ is the whole ____ minus _____ is I know I have found all the facts, because Fires there were ____ Then ____ were taken away.	• The mathematical name of a football is a_____ • The mathematical name of a book is a _____• The mathematical name of a tin of beans is a _____ • This is a because … • A •_____ has flat faces. A _____ has a curved surface A _____has both flat faces and curved surfaces. • On the face of a cylinder, I can see a_____ • On the face of a pyramid, I can see a_____ • I know this shape is a _____because ... • I have sorted the shapes by _____ • These shapes are grouped together because … • The next shape in the pattern is a _____ • There are _____ shapes before the pattern starts again. • The pattern is made up of _____ shapes.

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 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.	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: • See, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base). • Select, rotate and manipulate shapes for a particular purpose, for example: • rotating a cylinder so it can be used to build a tower • rotating a puzzle piece to fit in its place. Year 2: • Describe properties of shape. Categorise shapes. Identify similar shapes. • Find the area or volume of a compound shape by decomposing into constituent shapes. Rotate, translate and reflect 2D shapes. Identify congruent shapes.
Key Vocabulary	units, ones, tens, exchange, digit, 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, order, size first, second, third… tenth, eleventh… twentieth, last, last but one, before, after, next, between, half-way between, above, below	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 much less is…? difference between, half, halve =, equals, sign, is the same as	SHAPE AND SPACE shape, pattern flat, curved, straight, round, hollow, solid, corner, point, pointed, face, side, edge, end sort, make, build, draw 3D SHAPES Cube, cuboid, pyramid, sphere, cone, cylinder 2D SHAPES Circle, triangle, square, rectangle star

*Red words are the newly taught vocabulary.