Whole School Maths Curriculum Overview: Year 2

#TheSmawthorneExperience

Year 2	Summer Term			
Topic	Fractions	Time	Statistics	Position and Direction
The Big Ideas	Fractions involve a relationship between a whole and parts of a whole. Ensure children express this relationship when talking about fractions. For example, 'If the bag of 12 sweets is the whole, then 4 sweets are one third of the whole.' Partitioning or 'fair share' problems when each share is less than one gives rise to fractions. Measuring where the unit is longer than the item being measured gives rise to fractions.	We need standard units of measure in order to compare things more accurately and consistently.	Data need to be collected with a question or purpose in mind. Tally charts are used to collect data over time (cars passing the school, birds on the bird table).	Recognising pattern and generalising structures and relationships are key elements for laying the foundations for later work in algebra.
Key Knowledge and Skills	• **Step 1** Introduction to parts and whole • **Step 2** Equal and unequal parts • **Step 3** Recognise a half • **Step 4** Find a half • **Step 5** Recognise a quarter • **Step 6** Find a quarter • **Step 7** Recognise a third • **Step 8** Find a third • **Step 9** Find the whole • **Step 10** Unit fractions	• **Step 1** O'clock and half past • **Step 2** Quarter past and quarter to • **Step 3** Tell time past the hour • **Step 4** Tell time to the hour • **Step 5** Tell the time to 5 minutes • **Step 6** Minutes in an hour • **Step 7** Hours in a day	• **Step 1** Make tally charts • **Step 2** Tables • **Step 3** Block diagrams • **Step 4** Draw pictograms (1-1) • **Step 5** Interpret pictograms (1-1) • **Step 6** Draw pictograms (2, 5 and 10) • **Step 7** Interpret pictograms (2, 5 and 10)	• **Step** 1 Language of position • **Step** 2 Describe movement • **Step** 3 Describe turns • **Step** 4 Describe movement and turns • **Step** 5 Shape patterns with turns •

	• **Step 11** Non-unit fractions • **Step 12** Recognise the equivalence of a half and two quarters • **Step 13** Recognise three-quarters • **Step 14** Find three-quarters • **Step 15** Count in fractions up to a whole			
National Curriculum Statements	• recognise, find, name and write fractions 1/3 , 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity • write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 .	• compare and sequence intervals of time • 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 • know the number of minutes in an hour and the number of hours in a day.	Pupils should be taught to: • 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	• order and arrange combinations of mathematical objects in patterns and sequences • 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).

Misconceptions	• Children may mix up a part and the whole. • Children may not know what equal groups/parts mean. • Children may know how to split a shape into equal parts, but may find it difficult to draw accurately. • Children may think that all equal parts must be identical. • Children may not recognise that the halves must be equal. • Children may think that it is impossible to represent 1 2 when there are more than two parts. • Children may need support splitting objects into two equal groups if they cannot physically share them. • Children may not make the link between finding 1 2 and dividing by 2	• Children may keep the hour hand pointing directly at a number for half past an hour, instead of halfway between two numbers. • Children may confuse the minute and hour hands. • Children may not use analogue clocks outside school, so this representation may be unfamiliar to them. • Children may confuse "quarter past" and "quarter to". • Children may keep the hour hand pointing directly at a number for quarter past/to an hour, instead of placing it partway between two numbers. • Children may say the number that the minute hand is pointing to, for example "1 minute past" instead of "5 minutes past". • The break in the pattern going from "5 minutes past" and "10 minutes past" to "quarter past" rather than "15 minutes past" may cause confusion.	• Children may draw five individual lines rather than using a "gate". • Children may count the groups of 5s as 10s or 1s. • If looking at pictures, children may need efficient strategies to avoid counting an object more than once. Children may think that they need to draw something to represent zero. Children may use tallies when they are not needed. • Children may need support to identify key information when answering comparative questions. • Children may not use/draw blocks of equal size. • Children may not use the size of the bars to compare totals. • Children may need support to label their block diagrams. • Children may draw different symbols to represent the different categories and may draw symbols inconsistently, for example using different sizes. • Children may pick symbols that are difficult to replicate consistently.	• Children may confuse left and right. • Children may think that there is only one way to describe position. • Children may not use mathematical language to describe position. • Children may find it more difficult to describe position using images than they do in practical contexts. • Children may confuse left and right. • Children need to think about which way an object is facing to work out both forwards/backwards and left/right, which can be challenging. • Children may count the starting square, so miscount the number of squares an object has moved. • Children may need a reminder about the fractions used in this step. • Children may confuse clockwise and anticlockwise. • Children may find it more difficult to describe a turn than to make it. • Children may think that an object must change if it completes a full turn.

Stem sentences	"This is one half because the shape has been split into two equal parts." "This is one third because the shape has been split into three equal parts." "This is one quarter because the shape has been split into four equal parts." "The whole has been split into ____ equal parts." "Each part is worth one _____." "This is / of the whole." For finding fractions of amounts: "To find a half of a number, I need to divide the number by ____." "To find a quarter of a number, I need to divide the number by ____." "To find a third of a number, I need to divide the number by ____." "Half of ____ is equal to ____." "A quarter of ____ is equal to ____." "A third of ____ is equal to ____."	Telling Time: "The time is __ o'clock." "The time is half past __." "The minute hand is pointing to the __." "The hour hand is pointing to the __." "The clock shows __ minutes past __." "__ minutes past __ is the same time as __ __." Days of the Week: "Today is __, yesterday was __." "Yesterday was __, tomorrow is __." "The day before Tuesday is __." "The day after Friday is __." Months of the Year: "My birthday is in the month of __." "There are __ days in __ (month)." "The month after __ is __."	Tally Charts: "To show 5 as a tally, I need to draw one group of 5." "The tally chart shows __ groups of 5 and __ single lines." "The total is __." Tables: "The table shows the number of __." "The most popular item is __." "The least popular item is __." Pictograms: "The key shows that 1 symbol represents __." "There are __ symbols shaded, which means that __ people chose __." "The most popular item is __ because __." General Questions: "How many __ are there?" "Which has the most/least?" "How do you know?" "What does the key tell you?" "How are tally charts and tables similar?" "How are they different?"	Describing Position: "The [object] is above the [object]." "The [object] is below the [object]." "The [object] is next to the [object]." "The [object] is in front of the [object]." "The [object] is behind the [object]." "The [object] is between the [object] and the [object]." Describing Direction and Turns: "A half turn clockwise is the same as a half turn anticlockwise." "The shape has made a quarter turn clockwise." "The shape has made a three-quarter turn anticlockwise." "The shape has turned clockwise." "The shape has turned anticlockwise."

Progression	Year 1: • recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise • find and name a quarter as one of four equal parts of an object, shape or quantity. Year 3: • Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts • Find unit fractions of quantities using known division facts (multiplication tables fluency) • Reason about the location of any fraction within 1 in the linear number system. • Add and subtract fractions with the same denominator, within 1.	Year 1: • compare, describe and solve practical problems for: time (for example, quicker, slower, earlier, later) • measure and begin to record the following: time (hours, minutes, seconds) • sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times Year 3: • tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks• estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example to calculate the time taken by particular events or tasks].	Year 1: Topic starts in Year 2.Year 3: • interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	Year 1: • Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. • Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. Year 3: • Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations. • Draw polygons by joining marked points, and identify parallel and perpendicular sides.

Key Vocabulary	equal' or 'equivalent'. grouping' and 'sharing' division unit fractions' and 'non-unit fractions'unit fractions' and 'non-unit fractions'wholes', 'parts' equal parts'	24 hours', 'daytime', 'night time', 'quarter to', 'quarter past', 'a quarter of an hour', 'to (e.g. twenty to three)', 'a.m.', 'p.m.', 'duration', 'longer', 'shorter' minute hour second hand analogue intervals o'clock half past	'tally', 'tally charts', 'pictograms', 'block diagrams' and 'tables'.	clockwise' and 'anti-clockwise' right and left