



# Sherdley Primary School

## Maths Curriculum Map

2020 – 2021

Year Group	Autumn Term	Spring Term	Summer Term
1	<p><b>Place Value – within 10 (4 weeks)</b></p> <ul style="list-style-type: none"> <li>Count to 10 forwards/backwards beginning with 0 or 1 or from any given number</li> <li>Count, read &amp; write numbers to 10 in numerals &amp; words</li> <li>Given a number, identify one more or one less</li> <li>Identify &amp; represent numbers using objects &amp; pictorial representations including the number line, and use the language of equal to, more than, less than (fewer), most, least</li> </ul> <p><b>Addition/Subtraction (4 weeks)</b></p> <ul style="list-style-type: none"> <li>Represent and use number bonds to 10</li> <li>Read, write and interpret mathematical statements involving addition (+) and subtraction (-) and equals (=) signs</li> <li>Add and subtract one-digit numbers to 10, including zero</li> <li>Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems</li> </ul> <p><b>Geometry: Shape (1 week)</b></p> <ul style="list-style-type: none"> <li>Recognise and name common 2-D shapes, including (for example, rectangles (including squares), circles &amp; triangles)</li> <li>Recognise and name 3-D shapes, including (for example, cuboids (including cubes), pyramids &amp; spheres)</li> </ul> <p><b>Place Value – within 20 (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Count to 20 forwards/backwards beginning with 0 or 1 or from any given number</li> <li>Count, read &amp; write numbers to 20 in numerals &amp; words</li> </ul>	<p><b>Addition/Subtraction – within 20 (4 weeks)</b></p> <ul style="list-style-type: none"> <li>Represent and use number bonds to 20</li> <li>Read, write and interpret mathematical statements involving addition (+) and subtraction (-) and equals (=) signs</li> <li>Add and subtract one-digit and two-digit numbers to 20 including zero</li> <li>Solve one step problems that involve addition &amp; subtraction, using concrete objects and pictorial representations and missing number problems e.g. <math>7 = \square - 9</math></li> </ul> <p><b>Place Value - within 50 (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Count to 50 forwards/backwards beginning with 0 or 1 or from any given number</li> <li>Count, read &amp; write numbers to 50 in numerals &amp; words</li> <li>Given a number, identify one more or one less</li> <li>Identify &amp; represent numbers using objects &amp; pictorial representations including the number line, and use the language of equal to, more than, less than (fewer), most, least</li> <li>Count in multiples of 2s, 5s and 10s</li> </ul> <p><b>Measurement: Length &amp; Height (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Measure &amp; begin to record lengths &amp; heights</li> <li>Compare, describe &amp; solve practical problems for lengths &amp; heights e.g. long/short, longer/shorter, tall/short, double/half</li> </ul> <p><b>Measurement: Weight &amp; Volume (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Measure &amp; begin to record mass/weight, capacity &amp; volume</li> <li>Compare, describe &amp; solve practical problems for mass/weight e.g. heavy/light, heavier</li> </ul>	<p><b>Multiplication &amp; division (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Count in multiples of 2s, 5s and 10s</li> <li>Solve one step problems that involve multiplication &amp; division, by calculating the answer using concrete objects, pictorial representations &amp; arrays with the support of the teacher</li> </ul> <p><b>Fractions (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Recognise, find and name a half as one of two equal parts of an object, shape or quantity</li> <li>Recognise, find &amp; name a quarter as one of four equal parts of an object, shape or quantity</li> </ul> <p><b>Geometry: Position &amp; Direction (1 week)</b></p> <ul style="list-style-type: none"> <li>Describe position, direction &amp; movement, including whole, half, quarter &amp; three-quarter turns,</li> </ul> <p><b>Place Value - within 100 (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Count to 100 forwards/backwards beginning with 0 or 1 or from any given number</li> <li>Count, read &amp; write numbers to 100 in numerals &amp; words</li> <li>Given a number, identify one more or one less</li> <li>Identify &amp; represent numbers using objects &amp; pictorial representations including the number line, and use the language of equal to, more than, less than (fewer), most, least</li> </ul> <p><b>Measurement: Money (1 week)</b></p> <ul style="list-style-type: none"> <li>Recognise &amp; know the value of different denominations of coins and notes</li> </ul> <p><b>Measurement: Time (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Sequence events in chronological order using language e.g. before &amp; after, next, first, today,</li> </ul>



# Sherdley Primary School

## Maths Curriculum Map

**2020 – 2021**

	<ul style="list-style-type: none"> <li>Given a number, identify one more or one less</li> <li>Identify &amp; represent numbers using objects &amp; pictorial representations including the number line, and use the language of equal to, more than, less than (fewer), most, least</li> </ul>	<p>than/lighter than, capacity &amp; volume e.g. full/empty, more than/less than, half, half full, quarter</p>	<p>yesterday, tomorrow, morning, afternoon &amp; evening</p> <ul style="list-style-type: none"> <li>Recognise &amp; use language relating to dates, including days of the week &amp; months of the year</li> <li>Tell the time to the hour and half past the hour &amp; draw hands on a clock to show these times. Compare, describe &amp; solve practical problems for time e.g. quicker, earlier, slower, later</li> <li>Measure &amp; begin to record time (hours, minutes &amp; seconds)</li> </ul>
	<p><b>Key Vocabulary:</b> represent, representation, forwards, backwards, equal to, more than, less than (fewer), most, least, ordinal numbers e.g. first, second, third etc, addition, subtraction, part-whole, compare, find the difference, 2-D shape names, 3-D shape names,</p>	<p><b>Key Vocabulary:</b> represent, representation, forwards, backwards, equal to, more than, less than (fewer), most, least, partition, number bond, systematic approach, multiples, taller, shorter, longer, length, height, cm, mass/weight, heavy/light, heavier than/lighter than, capacity &amp; volume, full/empty, more than/less than, half, half full, quarter</p>	<p><b>Key Vocabulary:</b> equal groups, arrays, grouping, sharing, doubles, half, quarter, whole turn, half turn, quarter turn, three quarter turn, position, order, partition, compare, tens, ones, greater than, less than, equal to, pounds, pence, equal values, before, after, next, first, today, yesterday, tomorrow, morning, afternoon &amp; evening, days of the week &amp; months of the year, quicker, earlier, slower, later, hours, minutes, seconds</p>
<b>2</b>	<p><b>Place Value (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Read &amp; write numbers to at least 100 in numerals &amp; words</li> <li>Recognise the place value of a digit in a two-digit number (tens &amp; ones)</li> <li>Identify, represent &amp; estimate numbers using different representations including the number line</li> <li>Compare &amp; order numbers from 0 up to 100; use &lt;, &gt; and = signs</li> <li>Use place value &amp; number facts to solve problems</li> <li>Count in steps of 2, 3 and 5 from 0, and in tens from any number forwards &amp; backwards</li> </ul>	<p><b>Multiplication &amp; division (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Recall &amp; use multiplication &amp; division facts for the 2, 5 and 10 times tables, including recognising odd &amp; even numbers</li> <li>Calculate mathematical statements for multiplication &amp; division within the multiplication tables &amp; write them using the multiplication (X), division (÷) and equals (=) sign</li> <li>Solve problems involving multiplication &amp; division, using materials, arrays, repeated addition, mental methods &amp; multiplication &amp; division facts, including problems in contexts</li> </ul>	<p><b>Geometry: Position &amp; direction (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Use mathematical vocabulary to describe position, direction &amp; movement including movement in a straight line &amp; distinguishing between rotation as a turn &amp; in terms of right angles for quarter, half &amp; three-quarter turns (clockwise &amp; anti-clockwise)</li> <li>Order &amp; arrange combinations of mathematical objects in patterns &amp; sequences</li> </ul> <p><b>Problem solving &amp; Efficient Methods (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Linked in to White Rose Daily Maths Problems</li> </ul> <p><b>Time (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Tell &amp; write the time to five minutes, including quarter to/past the hour &amp; draw the hands on a clock face to show these times</li> </ul>



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2020 – 2021

### Addition/subtraction (5 weeks)

- Recall & use addition & subtraction facts to 20 fluently, & derive & use related facts up to 100
- Add & subtract numbers using concrete objects, pictorial representations, & mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers
- Show that the addition of two numbers can be done in any order (commutative) & subtraction of one number from another cannot
- Solve problems with addition & subtraction using concrete objects & pictorial representations, including those involving numbers, quantities & measures; applying their increasing knowledge of mental & written methods
- Recognise & use the inverse relationship between addition & subtraction & use this to check calculations & solve missing number problems

### Measurement: Money (2 weeks)

- Recognise & use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- Find different combinations of coins that equal the same amounts of money
- Solve simple problems in a practical context involving addition & subtraction of money of the same unit, including giving change

### Multiplication & division (2 weeks)

- Recall & use multiplication & division facts for the 2, 5 and 10 times tables, including recognising odd & even numbers

- Show that the multiplication of two numbers can be done in any order (commutative) & division of one number by another cannot

### Statistics (2 weeks)

- Interpret & construct simple pictograms, tally charts, block diagrams & simple tables
- Ask & answer simple questions by counting the number of objects in each category by quantity
- Ask & answer questions about totalling & comparing categorical data

### Geometry: Properties of shape (3 weeks)

- Identify & describe the properties of 2-D shapes, including the number of sides & the line of symmetry in a vertical line
- Identify & describe the properties of 3-D shapes, including the number of edges, vertices & faces
- Identify 2-D shapes on the surface of 3-D shapes e.g. a circle on a cylinder & a triangle on a pyramid
- Compare & sort common 2-D & 3-D shapes & everyday objects

### Fractions (3 weeks)

- Recognise, find, name & write fractions  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$  of a length, shape or quantity
- Write simple fractions e.g.  $\frac{1}{2}$  of 6 = 3 & recognise the equivalence of  $\frac{2}{4}$  &  $\frac{1}{2}$

### Measurement: Length & Height (1 week)

- Choose & use appropriate standard units to estimate & 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 & measuring vessels

- Know the number of minutes in an hour & the number of hours in a day
- Compare & sequence intervals of time

### Measurement: Mass, capacity & temperature (3 weeks)

- Choose & use appropriate standard units to estimate & 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 & measuring vessels
- Compare & order lengths, mass, volume/capacity & record the results using <, > and =

### Investigations (2 weeks)

- Linked in to White Rose Problems of The Day



# Sherdley Primary School

## Maths Curriculum Map

2020 – 2021

	<ul style="list-style-type: none"> <li>Calculate mathematical statements for multiplication &amp; division within the multiplication tables &amp; write them using the multiplication (X), division (<math>\div</math>) and equals (=) sign</li> <li>Solve problems involving multiplication &amp; division, using materials, arrays, repeated addition, mental methods &amp; multiplication &amp; division facts, including problems in contexts</li> <li>Show that the multiplication of two numbers can be done in any order (commutative) &amp; division of one number by another cannot</li> </ul>	<ul style="list-style-type: none"> <li>Compare &amp; order lengths, mass, volume/capacity &amp; record the results using &lt;, &gt; and =</li> </ul>	
	<p><b>Key Vocabulary:</b> place value chart, tens, ones, part-whole, partition, fact families, inverse, bar model, pounds, pence, combination, change, equal groups, commutative, symbol, arrays, repeated addition, odd, even</p>	<p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>equal groups, commutative, division, sharing, grouping, odd, even, pictograms, tally charts, block diagrams, simple tables, interpret, sides, faces, vertices, edges, vertical line, symmetry, third, equivalent, fraction, non-unit fraction, measure, compare, order, four operations, length/height, (m/cm), mass (kg/g), temperature (<math>^{\circ}</math>C), capacity (litres/ml), thermometers, measuring vessels</li> </ul>	<p><b>Key Vocabulary:</b> movement, turns, o'clock, half past, quarter to, quarter past, hours, days, duration, length/height, (m/cm), mass (kg/g), temperature (<math>^{\circ}</math>C), capacity (litres/ml), thermometers, measuring vessels, compare, measure, volume</p>
<b>3</b>	<p><b>Place Value (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Identify, represent &amp; estimate numbers using different representations</li> <li>Find 10 or 100 more or less than a given number</li> <li>Recognise the place value of each digit in a three-digit number (hundreds, tens &amp; units)</li> <li>Compare &amp; order numbers up to 1,000</li> <li>Read &amp; write numbers up to 1,000 in numerals &amp; words</li> <li>Solve number problems &amp; practical problems involving these ideas</li> </ul>	<p><b>Multiplication &amp; division (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Recall &amp; use multiplication &amp; division facts for the 3, 4 &amp; 8 multiplication tables</li> <li>Write &amp; calculate mathematical statements for multiplication &amp; division using the multiplication tables they know, including for two-digit numbers time one-digit numbers, using mental &amp; progressing to formal written methods</li> <li>Solve problems, including missing number problems, involving multiplication &amp; division, including positive integer scaling problems &amp;</li> </ul>	<p><b>Fractions (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Recognise &amp; show, using diagrams, equivalent fractions with small denominators</li> <li>Compare &amp; order unit fractions, &amp; fractions with the same denominators</li> <li>Add &amp; subtract fractions with the same denominator within one whole e.g. <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math></li> <li>Solve problems that involve all of the above</li> </ul>



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2020 – 2021

- Count from 0 in multiples of 4, 8, 50 & 100
- Addition & subtraction (5 weeks)**
- Add & subtract numbers mentally, including, a three-digit number and ones, a three-digit number and tens; a three-digit number and hundreds
  - Add & subtract numbers with up to three digits, using formal columnar addition & subtraction
  - Estimate the answer to a calculation & use inverse operations to check answers
  - Solve problems, including missing number problems, using number facts, place value, & more complex addition & subtraction
- Multiplication & division (3 weeks)**
- Count from 0 in multiples of 4, 8, 50 & 100
  - Recall & use multiplication & division facts for the 3, 4 & 8 multiplication tables
  - Write & calculate mathematical statements for multiplication & division using the multiplication tables they know, including for two-digit numbers time one-digit numbers, using mental & progressing to formal written methods
  - Solve problems, including missing number problems, involving multiplication & division, including positive integer scaling problems & correspondence problems in which  $n$  objects are connected to  $m$  objects

correspondence problems in which  $n$  objects are connected to  $m$  objects

**Measures: Money (1 week)**

- Add & subtract amounts of money to give change, using both £ and p in practical contexts

**Statistics (2 weeks)**

- Interpret & present data using bar charts, pictograms & tables
- Solve one-step & two-step questions e.g. How many more? & How many fewer? using information presented in scaled bar charts & pictograms & tables

**Measurement: Length & Perimeter (3 weeks)**

- Measure, compare, add & subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- Measure the perimeter of simple 2-D shapes

**Fractions (2 weeks)**

- Count up & down in tenths; recognise that tenths arise from dividing an object into 10 equal parts & in dividing one-digit numbers or quantities by 10
- Recognise & use fractions as numbers: unit fractions & non-unit fractions with small denominators
- Recognise, find & write fractions of a discrete set of objects: unit fractions & non-unit fractions with small denominators
- Solve problems that involve all of the above

**Measures: Time (3 weeks)**

- Tell & write the time from an analogue clock, including using Roman numerals from I to XII & 12-hour/24-hour clocks
- Estimate & read time with increasing accuracy to the nearest minute
- Record & compare time in terms of seconds, minutes & hours
- Use vocabulary e.g. o'clock, a.m./p.m., morning, afternoon, noon & midnight
- Know the number of seconds in a minute & the number of days in each month, year and leap year
- Compare durations of events e.g. calculate the time taken by particular events or tasks

**Geometry: Properties of shape (2 weeks)**

- Recognise angles as a property of shape or a description of a turn
- Identify right angles, recognise that two right angles make a half-turn, three make three quarter of a turn & four make a complete turn; identify whether angles are greater than or less than a right angle
- Identify horizontal & vertical lines & pairs of perpendicular & parallel lines
- Draw 2-D shapes & make 3-D shapes using modelling materials
- Recognise 3-D shapes in different orientations & describe them

**Measurement: Mass & capacity (3 weeks)**

- Measure, compare, add & subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)



# Sherdley Primary School

## Maths Curriculum Map

**2020 – 2021**

	<p><b>Key Vocabulary:</b> Hundreds, place value chart, partition, interval, multiple, exchange, estimate, equal groups, multiply, divide, scaling, integers</p>	<p><b>Key Vocabulary:</b> multiply, divide, scaling, integers, compare, arrays, convert, add, subtract, pictograms, bar charts, tables, symbol, measure, equivalent, compare, perimeter, units of measure – m/cm/mm, l/ml, kg/g, partition, ascending, descending, unit &amp; non-unit fractions, tenths, numerator, denominator, decimals, whole</p>	<p><b>Key Vocabulary:</b> equivalent fractions, compare, order, numerator, denominator, unit fractions, whole, a.m./p.m., duration, months, days, morning, afternoon, noon, midnight, analogue, turns, angles, right angle, horizontal, perpendicular, parallel, orientation, m/cm/mm, l/ml, kg/g</p>
<b>4</b>	<p><b>Place Value (4 weeks)</b></p> <ul style="list-style-type: none"> <li>Count in multiples of 6, 7, 9, 25 and 1,000</li> <li>Find 1,000 more or less than any given number</li> <li>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens &amp; ones)</li> <li>Order &amp; compare numbers beyond 1,000</li> <li>Identify, represent &amp; estimate numbers using different representations</li> <li>Round any number to the nearest 10, 100 &amp; 1,000</li> <li>Solve number &amp; practical problems that involve all of the above &amp; with increasingly large positive numbers</li> <li>Count backwards through zero to include negative numbers</li> </ul> <p><b>Addition &amp; subtraction (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Add &amp; subtract numbers with up to 4-digits using the formal written columnar addition &amp; subtraction where appropriate</li> <li>Estimate &amp; use inverse operations to check answers to a calculation</li> <li>Solve addition &amp; subtraction two-step problems in context, deciding which operations &amp; methods to use and why</li> </ul>	<p><b>Multiplication &amp; division (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Recall &amp; use multiplication &amp; division facts for multiplication tables up to 12 X 12</li> <li>Use place value, known &amp; derived facts to multiply &amp; divide mentally, including: multiplying by 0 &amp; 1; dividing by 1; multiplying together three numbers</li> <li>Recognise &amp; use factor pairs &amp; commutativity in mental calculations</li> <li>Multiply two-digit &amp; three-digit numbers by a one-digit number using formal written layout</li> <li>Solve problems involving multiplying &amp; adding, including using the distributive law to multiply two-digit numbers by one-digit, integer scaling problems &amp; harder correspondence problems such as <math>n</math> objects are connected to <math>m</math> objects</li> </ul> <p><b>Measurement: Area (1 week)</b></p> <ul style="list-style-type: none"> <li>Find the area of rectilinear shapes by counting squares</li> </ul> <p><b>Fractions (4 weeks)</b></p> <ul style="list-style-type: none"> <li>Recognise &amp; show, using diagrams, families of common equivalent fractions</li> <li>Count up &amp; down in hundredths; recognise that hundredths arise when dividing an object by one hundred &amp; dividing tenths by ten</li> <li>Solve problems involving increasingly harder fractions to calculate quantities, &amp; fractions to</li> </ul>	<p><b>Decimals (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Compare numbers with the same number of decimal places up to two decimal places</li> <li>Round decimals with one decimal place to the nearest whole number</li> <li>Recognise &amp; write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math> &amp; <math>\frac{3}{4}</math></li> <li>Understand the effect of dividing a one or two-digit number by 10 or 100. Identify the value of the digits in the answers as ones, tenths &amp; hundredths</li> </ul> <p><b>Measurement: Money (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Estimate, compare &amp; calculate different measures including money in pounds &amp; pence</li> <li>Solve simple measure &amp; money problems involving fractions &amp; decimals to two decimal places</li> </ul> <p><b>Measurement: Time (1 week)</b></p> <ul style="list-style-type: none"> <li>Read, write &amp; convert time between analogue &amp; digital 12- &amp; 24-hour clocks</li> <li>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</li> </ul> <p><b>Statistics (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Interpret &amp; present discrete &amp; continuous data using appropriate graphical methods, including bar charts &amp; time graphs</li> </ul>



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2020 – 2021

	<p><b>Measurement: Length &amp; perimeter (1 week)</b></p> <ul style="list-style-type: none"> <li>• Measure &amp; calculate the perimeter of a rectilinear figure (including squares) in centimetres &amp; metres</li> <li>• Convert between different units of measure e.g. kilometres to metres</li> </ul> <p><b>Multiplication &amp; division (3 weeks)</b></p> <ul style="list-style-type: none"> <li>• Recall &amp; use multiplication &amp; division facts for multiplication tables up to 12 X 12</li> <li>• Count in multiples of 6, 7, 9, 25 and 1,000</li> <li>• Use place value, known &amp; derived facts to multiply &amp; divide mentally, including: multiplying by 0 &amp; 1; dividing by 1; multiplying together three numbers</li> <li>• Solve problems involving multiplying &amp; adding, including using the distributive law to multiply two-digit numbers by one-digit, integer scaling problems &amp; harder correspondence problems such as <math>n</math> objects are connected to <math>m</math> objects</li> </ul>	<p>divide quantities, including non-unit fractions where the answer is a whole number</p> <ul style="list-style-type: none"> <li>• Add &amp; subtract fractions with the same denominator</li> </ul> <p><b>Decimals (3 weeks)</b></p> <ul style="list-style-type: none"> <li>• Recognise &amp; write decimal equivalents of any number of tenths or hundredths</li> <li>• Find the effect of dividing a one or two-digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths &amp; hundredths</li> <li>• Solve simple measure &amp; money problems involving fractions &amp; decimals to two decimal places</li> <li>• Convert between different units of measure e.g. kilometre to metre</li> </ul>	<ul style="list-style-type: none"> <li>• Solve comparison, sum &amp; difference problems using information presented in bar charts, pictograms, tables &amp; other graphs</li> </ul> <p><b>Geometry: Properties of shape (3 weeks)</b></p> <ul style="list-style-type: none"> <li>• Identify acute &amp; obtuse angles &amp; compare &amp; order angles up to two right angles by size</li> <li>• Compare &amp; classify geometric shapes, including quadrilaterals &amp; triangles, based on their properties &amp; sizes</li> <li>• Identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>• Complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul> <p><b>Geometry: Position &amp; direction (1 week)</b></p> <ul style="list-style-type: none"> <li>• Describe positions on a 2-D grid as coordinates in the first quadrant. Plot specified points &amp; draw sides to complete a given polygon</li> <li>• Describe movements between positions as translations of a given unit to the left/right &amp; up/down</li> </ul>
	<p><b>Key Vocabulary:</b>          Roman numerals, compare, order, partition, round, positive, negative, place value grid, exchange, estimate, efficient method, operation, strategy, convert, perimeter, rectilinear, kilometres, integer, scaling, commutative law, distributive law, commutativity, partitioning, equivalent,</p>	<p><b>Key Vocabulary:</b>          integer, scaling, factor, factor pair, product, commutativity, associative law, efficient multiplication, exchange, rectilinear, area, compare, surface, perpendicular, equivalent fraction, denominator, numerator, hundredths, tenths, non-unit &amp; unit fractions, improper fraction, mixed numbers, abstract method, partition, decimal(s), relative scale, place holder, Gattegno chart, place value chart, the whole,</p>	<p><b>Key Vocabulary:</b>          decimal, fraction, half, quarter, three quarters, round, order, compare, partition, two decimal places, ascending, descending, integer, conversion, convert, place value grid, estimate, approximately, recombine, four operations, number bonds, analogue, digital, hours, minutes, seconds, years, months, days, interpret, comparison, sum, difference, line graph, scale, axes, data, continuous data, angles, acute, obtuse, right angle, degree(s), triangles, quadrilaterals, line of symmetry, symmetric, symmetric figure, horizontal, vertical, polygon, isosceles, scalene, equilateral, perimeter, rhombus, parallelogram, trapezium, parallel, equal, Frayer model, coordinates, x-axis, y-axis, notation, brackets, grid lines, left, right,</p>



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## Maths Curriculum Map

2020 – 2021

<b>5</b>	<p><b>Place Value (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Read, write, order &amp; compare numbers to at least 1,000,000 &amp; determine the value of each digit</li> <li>Count forwards or backwards in steps of powers of 10 for any number up to 1,000,000</li> <li>Interpret negative numbers in context, count forwards &amp; backwards with positive &amp; negative whole numbers including through zero</li> <li>Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000, &amp; 100,000</li> <li>Solve number problems &amp; practical problems that involve all of the above</li> <li>Read Roman numerals up to 1,000 (M) &amp; recognise years written in Roman numerals</li> </ul> <p><b>Addition &amp; subtraction (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Add &amp; subtract numbers mentally with increasingly large numbers</li> <li>Add &amp; subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition &amp; subtraction). Use rounding to check answers to calculations &amp; determine, in the context of a problem, levels of accuracy</li> <li>Solve addition &amp; subtraction multi-step problems in contexts, deciding which operations &amp; methods to use &amp; why</li> </ul> <p><b>Statistics (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Solve comparison, sum &amp; difference problems using information presented in a line graph</li> <li>Complete, read &amp; interpret information in tables including timetables</li> </ul>	<p><b>Multiplication &amp; division (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Multiply &amp; divide numbers mentally drawing upon known facts</li> <li>Multiply numbers up to 4 digits by a one or two-digit number using a written formal method, including long multiplication for 2-digit numbers</li> <li>Divide numbers up to 4 digits by a 1 digit number using the formal written method of short division &amp; interpret remainders appropriately for the context</li> <li>Solve problems involving addition &amp; subtraction, multiplication &amp; division &amp; a combination of these, including understanding the use of the equals sign</li> </ul> <p><b>Fractions (6 weeks)</b></p> <ul style="list-style-type: none"> <li>Compare &amp; order fractions whose denominators are multiples of the same number</li> <li>Identify, name &amp; write equivalent fractions of a given fraction, represented visually including tenths &amp; hundredths</li> <li>Recognise mixed numbers &amp; improper fractions &amp; convert from one form to the other &amp; write mathematical statements <math>&gt;1</math> as a mixed number e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math></li> <li>Add &amp; subtract fractions with the same denominator &amp; denominators that are multiples of the same number</li> </ul> <p><b>Decimals &amp; percentages (2 weeks)</b></p> <ul style="list-style-type: none"> <li>Read, write, order &amp; compare numbers with up to three decimal places</li> </ul>	<p>up, down, translate, translation, original point, corresponding vertices, vertex, object, image</p> <p><b>Decimals (4 weeks)</b></p> <ul style="list-style-type: none"> <li>Recognise &amp; write decimal equivalents of any number of tenths or hundredths</li> <li>Find the effect of dividing a one or two-digit number by 10 or 100 identifying the value of the digits in the answer as ones, tenths &amp; hundredths</li> <li>Solve simple measures &amp; money problems involving fractions &amp; decimals to two decimal places</li> <li>Convert between different units of measure e.g. kilometre to metre</li> </ul> <p><b>Geometry: Properties of shape (3 weeks)</b></p> <ul style="list-style-type: none"> <li>Identify 3-D shapes, including cubes &amp; other cuboids, from 2-D representations</li> <li>Use the properties of rectangles to deduce related facts &amp; find missing lengths &amp; angles</li> <li>Distinguish between regular &amp; irregular polygons based on reasoning about equal sides &amp; angles</li> <li>Know angles are measured in degrees, estimate &amp; compare acute, obtuse &amp; reflex angles</li> <li>Draw given angles, &amp; measure them in degrees</li> <li>Identify: angles at a point &amp; one whole turn (total <math>360^\circ</math>), angles at a point on a straight line &amp; <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>) other multiples of <math>90^\circ</math></li> </ul> <p><b>Geometry: Position &amp; direction (1 week)</b></p> <ul style="list-style-type: none"> <li>Identify, describe &amp; represent the position of a shape following a reflection or translation, using the appropriate language, &amp; know that the shape cannot be changed</li> </ul>
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# Sherdley Primary School

## Maths Curriculum Map

2020 – 2021

	<p><b>Multiplication &amp; division (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Multiply &amp; divide numbers mentally drawing upon known facts</li> <li>• Multiply &amp; divide whole numbers by 10, 100 &amp; 1,000</li> <li>• Identify multiples &amp; factors, including finding all factor pairs of a number, &amp; common factors of two numbers</li> <li>• Recognise &amp; use square numbers &amp; cube numbers &amp; the notation for squared (<math>^2</math>) &amp; cubed (<math>^3</math>)</li> <li>• Solve problems involving multiplication &amp; division including using knowledge of factors &amp; multiples, squares &amp; cubes</li> <li>• Know &amp; use the vocabulary of prime numbers, prime factors &amp; composite (non-prime) numbers</li> <li>• Establish whether a number up to 100 is prime &amp; recall prime numbers up to 19</li> </ul> <p><b>Measurement: Perimeter &amp; area (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Measure &amp; calculate the perimeter of composite rectilinear shapes in cm &amp; m</li> <li>• Calculate &amp; compare the area of rectangles (including squares), &amp; including using standard units, <math>\text{cm}^2</math>, <math>\text{m}^2</math> estimate the area of irregular shapes</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise &amp; use thousandths &amp; relate them to tenths, hundredths &amp; decimal equivalents</li> <li>• Round decimals with two decimal places to the nearest whole number &amp; to one decimal place</li> <li>• Solve problems involving numbers up to three decimal places</li> <li>• Recognise the percent symbol (%) &amp; understand that per cent relates to 'number of parts per hundred' &amp; write percentages as a fraction with denominator 100, &amp; as a decimal</li> <li>• Solve problems which require knowing percentage &amp; decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> &amp; those fractions with a denominator of a multiple of 10 or 25</li> </ul>	<p><b>Measurement: Converting units (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Convert between different units of metric measure e.g. km &amp; m, m &amp; cm, cm &amp; mm, g &amp; kg, l &amp; ml</li> <li>• Understand &amp; use approximate equivalences between metric units &amp; common imperial units e.g. inches, pounds &amp; pints</li> <li>• Solve problems involving converting between units of time</li> </ul> <p><b>Measurement: Volume (1 week)</b></p> <ul style="list-style-type: none"> <li>• Estimate volume e.g. <math>1\text{cm}^3</math> blocks to build cuboids (including cubes) &amp; capacity e.g. using water</li> <li>• Use all four operations to solve problems involving measure</li> </ul>
	<p><b>Key Vocabulary:</b></p> <p>round, negative, positive, interpret, number systems, Roman number system, estimate, smallest, greatest, halfway, partition, temperature, degree(s), increase, decrease, approximate, inverse operations, multi-step, Gattegno chart, exchange, place holder, line graph, table, two-way tables, comparison, sum, difference, vertical, horizontal, axes, intervals, scales, multiple, conversion, timetables, a.m., p.m., factors, common factors, prime numbers, composite numbers, square</p>	<p><b>Key Vocabulary:</b></p> <p>place holder, exchange, product, partition, area model, short division, remainders, equivalent fraction, proper fraction, improper fraction, mixed numbers, numerator, denominator, multiples, multiply, add, increase, decrease, sequence, common denominator, flexible partitioning, non-unit fraction, unit fraction, integer, commutativity, convert, repeated addition, per cent, percentage, tenths, hundredths, thousandths, rounding,</p>	<p><b>Key Vocabulary:</b></p> <p>complements, exchange, bridging, estimation, place holder, integers, acute, obtuse, reflex, angles, right angle, degrees, regular, irregular, polygons, full turn, half turn, quarter turn, protractor, parallel, perpendicular, isosceles, equilateral, surface, plan, elevation, projection, vertices, coordinates, x-coordinate, y-coordinate, axes, x-axis, y-axis, 1<sup>st</sup> quadrant, reflect, reflections, parallel, vertical, horizontal, dimensions, orientation, translated,</p>



# Sherdley Primary School

## Maths Curriculum Map

**2020 – 2021**

	<p>numbers, cube numbers, factor pairs, product, notation, perimeter, area, irregular, regular, compound shape, rectilinear shape</p>		<p>translation, metric units, imperial units, converting, conversions, approximating, approximate equivalences, approximations, volume, capacity, <math>\text{cm}^3</math>, <math>\text{m}^3</math>,</p>
<b>6</b>	<p><b>Place Value (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Read, write order &amp; compare numbers up to 10,000,000 &amp; determine the value of each digit</li> <li>• Round any whole number to a required degree of accuracy</li> <li>• Use negative numbers in context, &amp; calculate intervals across zero</li> <li>• Solve number &amp; practical problems that involve all of the above</li> </ul> <p><b>Four Operations (4 weeks)</b></p> <ul style="list-style-type: none"> <li>• Solve addition &amp; subtraction multi-step problems in contexts, deciding which operations &amp; methods to use &amp; why</li> <li>• Multiply multi-digit numbers up to 4-digit numbers by a 2-digit number using the formal written method of long multiplication</li> <li>• Divide numbers up to 4-digit numbers by a 2-digit whole number using the formal written method of long division, &amp; interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context</li> <li>• Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context</li> <li>• Perform mental calculations, including mixed operations &amp; large numbers</li> <li>• Identify common factors, common multiples &amp; prime numbers</li> </ul>	<p><b>Decimals (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Identify the value of each digit in numbers given to three decimal places &amp; multiply numbers by 10, 100 &amp; 1,000 giving answers up to 3 decimal places</li> <li>• Multiply 1-digit numbers with up to 2 decimal places by whole numbers</li> <li>• Use written division methods in cases where the answer has up to 2 decimal places</li> <li>• Solve problems which require answers to be rounded to specified degrees of accuracy</li> </ul> <p><b>Percentages (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Solve problems involving the calculation of percentages e.g. of measures &amp; such as 15% of 360 &amp; the use of percentages for comparison</li> <li>• Recall &amp; use equivalences between simple fractions, decimals &amp; percentages including in different contexts</li> </ul> <p><b>Algebra (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Use simple formulae</li> <li>• Generate &amp; describe linear number sequences</li> <li>• Express missing number problems algebraically</li> <li>• Find pairs of numbers that satisfy an equation with two unknowns</li> <li>• Enumerate possibilities of combinations of two variables</li> </ul> <p><b>Converting units (1 week)</b></p> <ul style="list-style-type: none"> <li>• Solve problems involving the calculation &amp; conversion of units of measure, using decimal</li> </ul>	<p><b>Geometry: Properties of shape (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Draw 2-D shapes using given dimensions &amp; angles</li> <li>• Compare &amp; classify geometric shapes based on their properties &amp; sizes &amp; find unknown angles in any triangles, quadrilaterals &amp; regular polygons</li> <li>• Recognise angles where they meet at a point, are on a straight line, or vertically opposite, &amp; find missing angles</li> </ul> <p><b>Problem solving (3 weeks)</b></p> <ul style="list-style-type: none"> <li>• Linked in to White Rose Daily Maths Problems</li> </ul> <p><b>Statistics (2 weeks)</b></p> <ul style="list-style-type: none"> <li>• Illustrate &amp; name parts of circles, including radius, diameter &amp; circumference &amp; know that the diameter is twice the radius</li> <li>• Interpret &amp; construct pie charts &amp; line graphs &amp; use these to solve problems</li> <li>• Calculate the mean as an average</li> </ul> <p><b>Investigations (4 weeks)</b></p> <ul style="list-style-type: none"> <li>• Linked in to White Rose Daily Maths Problems</li> </ul>



# Sherdley Primary School

## Maths Curriculum Map

2020 – 2021

- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve problems involving addition, subtraction, multiplication & division
- Use estimation to check answers to calculations & determine in the context of a problem, an appropriate degree of accuracy

### Fractions (4 weeks)

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Compare & order fractions, including  $>1$
- Generate & describe linear number sequences (with fractions)
- Add & subtract fractions with different denominations & mixed numbers, using the concept of equivalent fractions.
- Multiply simple pairs of proper fractions, writing the answer in its simplest form  
e.g.  $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
- Divide proper fractions by whole numbers e.g.  $\frac{1}{3} \div 2 = \frac{1}{6}$
- Associate a fraction with division & calculate decimal fraction equivalents e.g. 0.375 for a simple fraction e.g.  $\frac{3}{8}$
- Recall & use equivalences between simple fractions, decimals & percentages, including in different contexts

### Geometry: Position & direction (1 week)

- Describe positions on the full coordinate grid (all four quadrants)
- Draw & translate simple shapes on the coordinate plane, & reflect them in the axes

- notation up to three decimal points where appropriate
- Use, read, write & convert between standard units, converting measurements of length, mass, volume & time from a smaller unit of measure to a larger unit & vice versa, using decimal notation up to 3 dp
  - Convert between miles & kilometres

### Measurement: Perimeter, Area & volume (2 weeks)

- Recognise that shapes with the same areas can have different perimeters & vice versa
- Recognise when it is possible to use formulae for area & volume of shapes
- Calculate the area of parallelograms & triangles
- Calculate, estimate & compare volume of cubes & cuboids using standard units, including  $\text{cm}^3$ ,  $\text{m}^3$  & extending to other units e.g.  $\text{mm}^3$ ,  $\text{km}^3$

### Ratio (2 weeks)

- Solve problems involving the relative sizes of two quantities where the missing values can be found by using integer multiplication & division facts
- Solve problems involving similar shapes where the scale factor is known or can be found
- Solve problems involving unequal sharing & grouping using knowledge of fractions & multiples



# Sherdley Primary School

## Maths Curriculum Map

2020 – 2021

**Key Vocabulary:**

million, partition, greater than, less than, compare, order, ascending, descending, rounding, negative, positive, interval, horizontal, vertical, exchange, inverse, multi-step, multiples, divisor, dividend, factor pair, remainder, common factor, product, common multiples, prime numbers, prime factors, composite (non-prime) numbers, square numbers, cube numbers, commutativity, equivalent fraction, numerator, denominator, lowest common multiple (LCM), improper fractions, proper fractions, integers, convert, unit fraction, mixed numbers, quadrant, first quadrant, coordinates, vertex, vertices, polygon, endpoints, x-axis, y-axis, translate, translation, reflect, reflections, coordinate grid

**Key Vocabulary:**

exchange, tenths, hundredths, thousandths, place value holder, converting, equivalent, integers, common fractions, numerator, denominator, percent, percentage, percentage equivalent, common equivalent fractions, equivalent percentages, order, compare, ascending, descending, algebra, one-step function, input, output, two-step function, expressions, numerical input, algebraic input, algebraic expressions, function machine, substitution, substitute, formulae, formula, algebraic notation, equation, inverse operation, integer values, variables, values, solution, corresponding value, metric measures, imperial measures, rectilinear shapes, quadrilateral, Carroll diagram, length, factor, area, perimeter, right-angled triangle, perpendicular, perpendicular height, base, parallelogram, volume, ratio, comparison, colon notation, scale factor, enlargement, similar

**Key Vocabulary:**

protractor, right angle, acute angle, obtuse angle, reflex angle, degrees, half turn, quarter turn, three quarter turn, full turn, clockwise, anti-clockwise, North, South, East, West, vertically opposite angles, interior angles, equilateral/ isosceles/scalene & right-angled triangle, identical, hatch mark, trapezium, rhombus, square, parallelogram, polygon, hexagon, heptagon, pentagon, regular, irregular, single vertex, interpret, scale, data, intervals, , x-axis, y-axis, frequency, vertical axis, horizontal axis, line graph, radius, diameter, circumference, centre, pie chart, percentages, percentages bar, sector, the mean, average