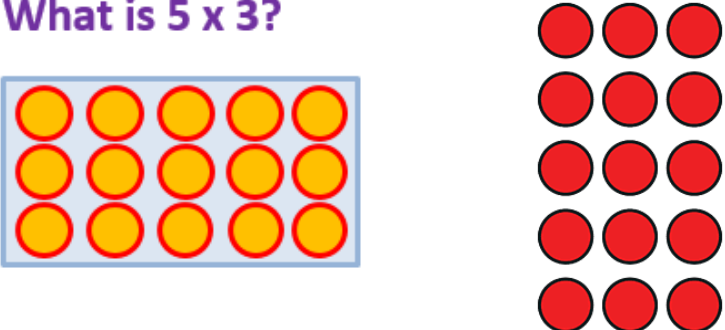
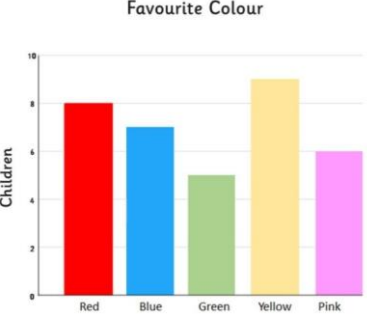
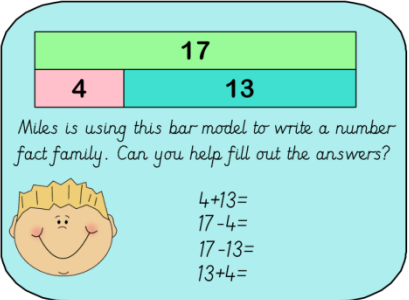
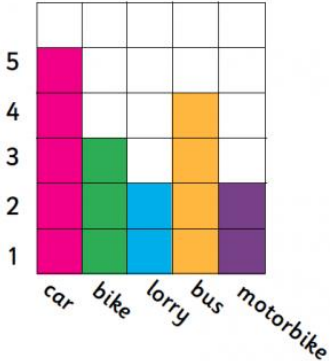
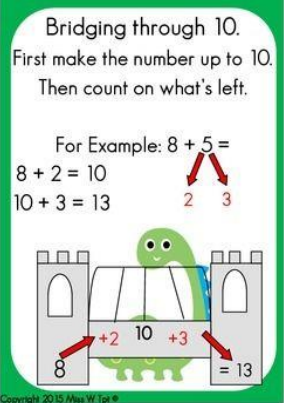
















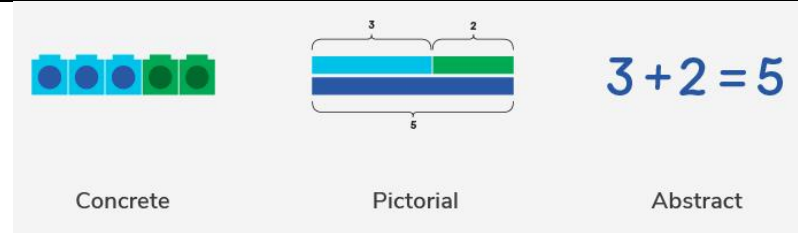
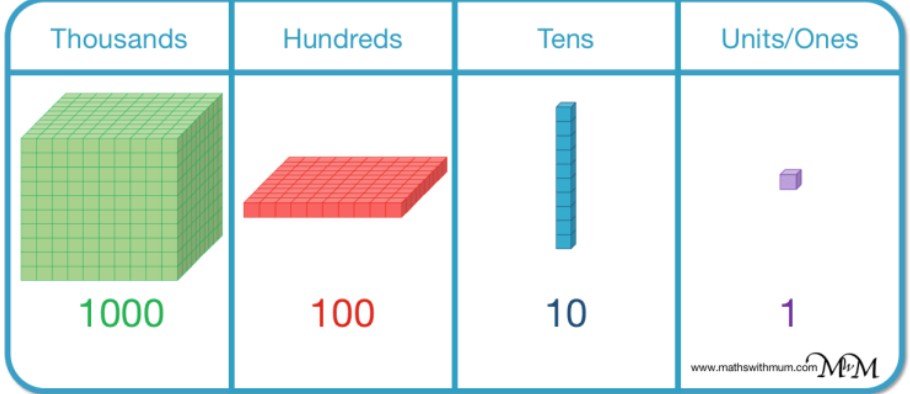


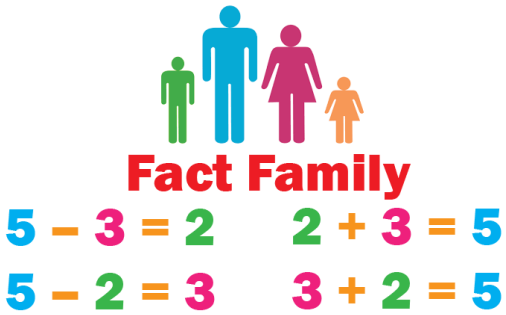
<p>Addition</p>	<p>Finding the total value of two or more numbers. Denoted by the symbol '+'. </p>													
<p>Analogue Clock</p>	<p>A clock which tells the time using an hour hand to indicate the hour and a minute hand to indicate minutes past the hour.</p>													
<p>Array</p>	<p>A pictorial representation to help children understand multiplication and division. Typically shown as rows of dots. These dots can be arranged in two ways e.g. 5 lots of 3 or 3 lots of 5.</p>	<p>What is 5 x 3?</p> 												
<p>Bar chart</p>	<p>A chart that displays information using blocks of different heights displayed on axes.</p>	<p>Favourite Colour</p>  <table border="1"> <caption>Favourite Colour Data</caption> <thead> <tr> <th>Colour</th> <th>Number of Children</th> </tr> </thead> <tbody> <tr> <td>Red</td> <td>8</td> </tr> <tr> <td>Blue</td> <td>7</td> </tr> <tr> <td>Green</td> <td>5</td> </tr> <tr> <td>Yellow</td> <td>9</td> </tr> <tr> <td>Pink</td> <td>6</td> </tr> </tbody> </table>	Colour	Number of Children	Red	8	Blue	7	Green	5	Yellow	9	Pink	6
Colour	Number of Children													
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<p>Bar Model</p>	<p>A visual strategy to help solve number problems using different sized rectangles to represent numbers.</p>	 <p>Miles is using this bar model to write a number fact family. Can you help fill out the answers?</p> <p> $4+13=$ $17-4=$ $17-13=$ $13+4=$ </p>												

<p>Block graph</p>	<p>A simple chart which displays information using blocks, displayed on a horizontal axis labelled with categories and a vertical axis labelled with numbers. Each block represents one unit (see glossary).</p>	
<p>Bridging through 10</p>	<p>A mental method of adding two numbers whose total is greater than 10 (see glossary).</p>	
<p>Calculation</p>	<p>Working out the amount or number of something, usually by using one of the four operations (+, -, x, ÷).</p>	
<p>Capacity</p>	<p>The term used when measuring how much fluid fits inside a container. Measured in millilitres and litres or described using 'full, nearly full, empty, nearly empty, half full, half empty'.</p>	
<p>Cardinal numbers</p>	<p>Numbers used to count a set of objects and give information about quantity. An</p>	

	awareness that the end amount is the total amount counted.										
Carroll diagram	A way of sorting and presenting information using columns and rows (see glossary).	<table border="1"> <thead> <tr> <th></th> <th>Shapes with curved lines</th> <th>Shapes with straight lines</th> </tr> </thead> <tbody> <tr> <th>Pink Shapes</th> <td></td> <td></td> </tr> <tr> <th>Blue Shapes</th> <td></td> <td></td> </tr> </tbody> </table>		Shapes with curved lines	Shapes with straight lines	Pink Shapes			Blue Shapes		
	Shapes with curved lines	Shapes with straight lines									
Pink Shapes											
Blue Shapes											
Chart	Another term for a graph or other way of presenting information.										
Circle	A 2D shape with one curved face and no vertices.										
Clockwise and anticlockwise	A way of indicating the direction of a turn. Clockwise involves a turn to the right as if following the hands of a clock, anticlockwise involves a turn to the left against the direction of a clock's hands.										
Commutativity	Addition and multiplication have the property of commutativity – when two numbers are added or multiplied, this can be done in any order and the same answer will be obtained (see glossary).	<p>The Commutative Law</p> <p>The Commutative Law says that when you add or multiply numbers, you get the same answer if you swap the numbers round.</p> <p>  +  $6 + 3 = 9 = 3 + 6$ </p> <p>  ×  $4 \times 2 = 8 = 2 \times 4$ </p>									

Concrete materials	Anything which children may use to help them carry out practical maths activities e.g. counters to help with addition, cubes and rods for place value or playdough to make 3D shapes.	
Cone	A 3D shape with two faces, one circular, one edge and one vertex.	
Corner	Also known as a vertex. The place on a 3D shape where three faces meet. Also used to describe the angles of a 2D shape. Multiple vertex are known as vertices.	
CPA Approach	The CPA approach builds on children’s existing knowledge by introducing concepts in a concrete and tangible way. It involves moving from concrete materials, to pictorial representations, to abstract symbols and problems.	
Cube	A 3D shape with six faces, twelve edges and eight vertices.	
Cuboid	A 3D shape with six faces, some or all of which are rectangular, twelve edges and eight vertices.	
Cylinder	A 3D shape with two circular faces, one rectangular face, two edges and no vertices.	
Data handling	Now known as statistics. The area of maths which looks at representation and analysis of information through charts and graphs.	
Degree	The unit of measurement for angles and also for temperature.	
Denominator	In a fraction, the number below the line.	

Diagonal	A straight line that joins two vertices of a shape that are not next to each other.	
Dienes	Wooden or plastic cubes, rods and flats used to support children in learning place value.	
Digital clock	A clock which tells the time using numbers only.	
Division	The process of dividing a number into equal parts and finding how many equal parts can be made and whether there is a remainder. It is represented by the symbol \div or $/$.	
Division fact	A division number sentence related to the times tables e.g. the division fact $16 \div 4 = 4$ is related to the 4x table.	
Edge	The place on a 3D shape where two faces meet.	
Equivalent fractions	Fractions which represent the same amount but are expressed using different numbers e.g. $1/3$ is the same as $2/6$ and $4/12$.	
Even numbers	All numbers that are exactly divisible by 2. Even numbers always end with 0, 2, 4, 6, or 8.	


Expanded notation	Writing number sentences where the numbers have been partitioned e.g. $43 + 26$ could be written as $40 + 3 + 20 + 6$.	
Face	Any flat surface of a 3D shape. Faces can be flat or curved and of many different shapes.	
Fact Families	A collection of related addition and subtraction facts, or multiplication and division facts, made from the same numbers.	 <p style="text-align: center;">Fact Family</p> <p style="text-align: center;">5 - 3 = 2 2 + 3 = 5</p> <p style="text-align: center;">5 - 2 = 3 3 + 2 = 5</p>
Finding the difference	A way of carrying out subtraction calculations by finding the numerical difference between two numbers. Most often taught by using a number line to count on from the smaller to the bigger number.	
Fraction	A fraction is a number which represents part of a whole. It can be represented using a numerator and a denominator e.g. $\frac{1}{2}$	
Geometry	The study of shape, position and movement. Includes such aspects as 2D and 3D shapes, angles, symmetry, pattern, tessellation, turns and position.	
Greater than > and less than <	Symbols used to show the relative size of numbers. The wide end of the symbol always faces the larger number e.g. $25 > 10$.	
Hexagon	A 2D shape with six sides and six vertices.	

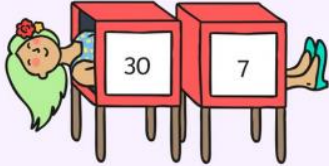
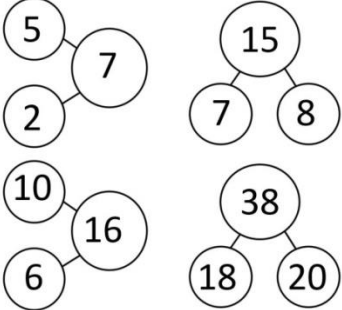
Maths vocabulary used at Manby Lodge – reviewed: Summer 2022
















Horizontal	A horizontal line runs from left to right joining equivalent points on two opposite sides of a shape.	
Inverse operation	The calculation which is opposite to a given calculation and effectively reverses it. Addition is the inverse of subtraction, multiplication is the inverse of division. So for the calculation $4+3=7$ the following calculations also apply: $3+4=7$ (commutativity), $7-4=3$, $7-3=4$. For the calculation $3\times 2=6$, we can also say $2\times 3=6$ (commutativity), $6\div 2=3$, $6\div 3=2$.	
Investigation	Maths investigations require pupils to apply skills and knowledge to solve problems. Investigations differ from word problems because there isn't always just one way of working them out, and the solution might have to be found through trial and error. Sometimes there may be several answers.	
Irregular shapes	2D shapes whose sides and angles are not all the same.	
Mass	This refers to the weight of an object. It is measured in grams (g) and kilograms (kg). Compared using heavier and lighter.	
Measurement	In Maths children learn about different forms of measurement, including length, weight (mass), capacity, time and temperature.	



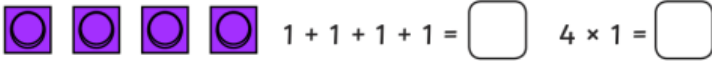
Maths vocabulary used at Manby Lodge – reviewed: Summer 2022




Mental method	Calculations and problem solving carried out mentally, without the need to write down any working out.	
Mirror line	A line which can be drawn onto a shape to show that both sides have exact reflective symmetry.	
Multiple	A multiple is a number that is a number that can be divided by another number a certain number of times without a remainder e.g. $4 \times 5 = 20$, 20 is a multiple of 4 and a multiple of 5.	
Multiplication fact	The answer to a multiplication calculation e.g. $3 \times 3 = 9$, the multiplication fact is 9.	
Multiplication tables	The multiplication calculations for all numbers from 1×2 to 12×10 . Usually grouped by the number being multiplied.	
Number bonds	Pairs of numbers that add up to a specific number e.g. number bonds to 10 are $10+0$, $9+1$, $8+2$...	
Number facts	Basic addition, subtraction, multiplication and division facts that children should learn to recall instantly to support more complex calculations. Examples include number bonds and multiplication tables.	
Number ladder	A vertical version of a number line.	
Number line	A visual representation of numbers along a horizontal line. Can start at 0 or represent a set of numbers from elsewhere in the number system Used to support counting, place value and calculation skills.	

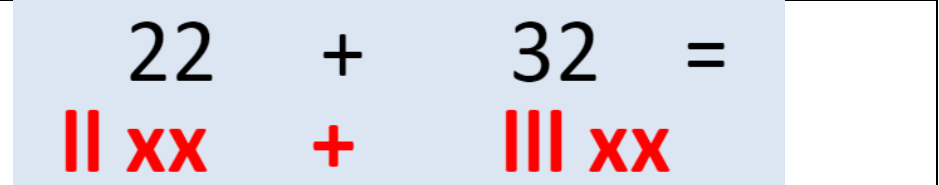

<p>Number sentence</p>	<p>An arrangement of numbers and symbols. $3+4=7$ is an addition number sentence, $7-3=4$ is a subtraction number sentence, $3\times 5=15$ is a multiplication number sentence, $15\div 3=5$ is a division number sentence.</p>																																																																																																					
<p>Number square</p>	<p>A set of numbers written in a square format. Often used with numbers from 1 to 100.</p>	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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<p>Numicon</p>	<p>A teaching aid consisting of plastic tiles with holes which represent the numbers 1 to 10.</p>																																																																																																					
<p>Oblong</p>	<p>A quadrilateral with two pairs of parallel sides and adjacent sides of different lengths (also referred to as a rectangle).</p>																																																																																																					
<p>Odd numbers</p>	<p>All whole numbers which are not exactly divisible by 2. Odd numbers always end in 1, 3, 5, 7 or 9.</p>																																																																																																					

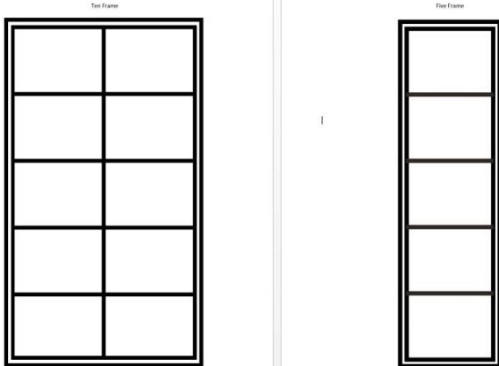
Octagon	A 2D shape with eight sides and eight vertices.	
Operation	The four mathematical operations are addition, subtraction, multiplication and addition.	
Ordering	Putting numbers in the correct order according to size. Ascending order goes smallest to largest, descending order from largest to smallest. Ordering also involves using the greater than, less than and equals symbols (<, >, =).	
Ordinal numbers	Numbers which indicate order – 1 st , 2 nd , 3 rd and so on.	
Partitioning	See also recombining. Partitioning is dividing a number into the individual values of its digits, and helps children understand the values of these digits e.g. 782 can be partitioned into 700 + 80 + 2.	<div data-bbox="1167 719 1592 1050" style="border: 1px solid purple; padding: 10px; text-align: center;"> <p>For example: 37 =</p>  </div>
Part Whole Model	A pictorial representation that helps children see the relationship between the whole number and its component parts.	

Pentagon	A 2D shape with 5 sides and 5 vertices.													
Pictogram	A chart or graph which uses pictures to represent data. They are set out the same way as bar charts but use pictures instead of bars. Each picture can represent one item or more than one.	<table border="1"> <thead> <tr> <th>FRUIT</th> <th>NUMBER OF CHILDREN WHO CHOSE IT</th> </tr> </thead> <tbody> <tr> <td>PEAR</td> <td></td> </tr> <tr> <td>WATERMELON</td> <td></td> </tr> <tr> <td>ORANGE</td> <td></td> </tr> <tr> <td>APPLE</td> <td></td> </tr> <tr> <td>BANANA</td> <td></td> </tr> </tbody> </table>	FRUIT	NUMBER OF CHILDREN WHO CHOSE IT	PEAR		WATERMELON		ORANGE		APPLE		BANANA	
FRUIT	NUMBER OF CHILDREN WHO CHOSE IT													
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Pie Chart	A circular chart divided into sections to represent the different values in a set of data.													
Place Value	The value of all the digits in a number e.g. in the number 627, the 2 digit is worth 20, the 6 digit is worth 600.													
Polygon	A 2D shape with straight fully closed sides. A polygon can have any number of sides.													
Prism	A 3D shape with flat sides and identically shaped end faces. The cross section of a prism is the same all the way through (when sliced).													
Product	The product of two numbers is the result achieved when they are multiplied together.													
Pyramid (Square-based)	A 3D shape with four triangular faces, one square face and 5 vertices.													
Pyramid (Triangular - based)	A 3D shape with four triangular faces and four vertices.													

<p>Quadrilateral</p>	<p>Any shape with four sides.</p>	
<p>Recombining</p>	<p>See also partitioning. Recombining is putting the individual digit place values of a number back together to make the original number. E.g. 200+50+3 is recombined to make 253.</p>	
<p>Rectangle</p>	<p>A 2D shape with four straight sides and four right angles. Opposite sides are the same length.</p>	
<p>Reflective symmetry</p>	<p>When a shape or pattern is reflected in a mirror line or a line of symmetry. The reflected shape will be an exact mirror image of the original, the same size and the same distance from the mirror line.</p>	
<p>Regular shapes</p>	<p>2D shapes with closed sides, where all sides are the same length and all angles are the same.</p>	
<p>Repeated addition</p>	<p>A way of teaching about multiplication as the repeated grouping of the same number. E.g. 4x2 is the same as 4 groups of 2 or 2+2+2+2.</p>	 

<p>Repeated subtraction</p>	<p>A way of teaching about division as the repeated subtraction of the same number down to zero. E.g. $15 \div 3$ is the same as 15 shared into 3 groups of 5 or $15 - 5 - 5 - 5 = 0$.</p>	<p>18 </p> <p>$18 - 6 = 12$ </p> <p>$12 - 6 = 6$ </p> <p>$6 - 6 = 0$ $18 \div 6 = 3$ <small>©math-only-math.com</small></p>
<p>Rotation of shapes</p>	<p>The movement of shapes around a fixed point.</p>	
<p>Rounding numbers</p>	<p>Adjusting digits up or down to the nearest tens, hundreds, thousands etc in order to make calculations easier.</p>	
<p>Sharing</p>	<p>Children learn early on how to share a number of objects into equal groups. This develops an early understanding of division.</p>	
<p>Side</p>	<p>One of the lines, straight or curved which encloses a 2D shape.</p>	
<p>Sphere</p>	<p>A 3D shape with one curved face, no edges and no vertices.</p>	
<p>Square</p>	<p>A 2D shape with 4 equal sides, 4 vertices and 4 right angles.</p>	
<p>Standard and non-standard units.</p>	<p>Standard units are the common units used in measurement e.g. cm, litres, grams. Non-standard units are used for measurements with younger children to introduce them to the concept of measuring e.g. measuring with their hands or cubes to say how tall/ long something is.</p>	

<p>Sticks and Crosses</p>	<p>Sticks are used to represent 10s in a 2 digit number and crosses represent the 1s.</p>	
<p>Subitising</p>	<p>Subitising is the ability to look at a group of objects and know how many there are without counting.</p>	
<p>Subtraction</p>	<p>Taking one number away from another, finding the difference between the two. Denoted by the symbol -</p>	
<p>Subtraction on a number line</p>	<p>See also finding the difference. Children are taught to use a number line to carry out subtraction calculations, either by counting back from the starting number or by finding the difference between the smaller and greater number in the calculation.</p>	
<p>Sum</p>	<p>The result of adding two numbers together.</p>	
<p>Tally chart</p>	<p>A chart used for the initial collection of data. Usually presented as a table with different categories along the top or down the side, and tallies (groups of five lines) used to show</p>	

	how many in each category. One vertical mark represents one item, and when five are counted, the fifth mark is crossed through the first 4.	
Ten/Five Frame	<p>Ten frame – two five by five rectangular frames into which objects can be placed to show numbers.</p> <p>Five frame – one row into which objects can be placed to show numbers.</p>	 <p>The diagram shows two types of number frames. On the left is a 'Ten Frame', which is a large rectangle divided into two columns of five cells each. On the right is a 'Five Frame', which is a vertical rectangle divided into five equal cells. Both frames are empty.</p>
Time interval	The length of time between two given times.	
Times tables	See multiplication tables	
Triangle	A 2D shape with 3 straight sides and 3 vertices. There are different types of triangle.	
Turns	A movement in a space either anti-clockwise or clockwise. Children use the terms half turn, quarter turn, full turn and three-quarter turn.	
Unit fractions	A fraction where the numerator is 1 and the denominator is a whole number.	
Vertex/vertices	Also known as corners. The place on a 3D shape where three faces meet. Also commonly used to describe the corners of a 2D or 3D shape.	

Maths vocabulary used at Manby Lodge – reviewed: Summer 2022

Vertical	A line which runs up and down a page or shape from top to bottom. It will intersect a horizontal line at right angles.	
Volume	The amount of space taken up by an object.	
Whole number	A number which contains no fractions or parts of a whole such as decimal numbers.	
Word problem	A mathematical calculation presented in words. Pupils are taught to find the key information, work out the type of calculation needed and then work out the answer.	
Written method	A way of carrying out a calculation which is done on paper rather than entirely mentally.	
24 hour clock	The 12 hour clock runs from 1 o'clock to 12 o'clock twice per day. The 24 hour clock runs from 00:00 hours (midnight or 12am) until 23:59 (11:59 pm).	
2D Shapes	Shapes which are flat, having only 2 dimensions, height/length and width.	
3D Shapes	Shapes which have a solid form, having three dimensions, height/length, width and depth.	