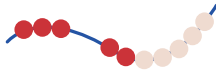
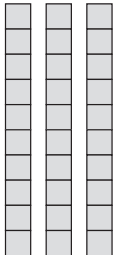


YEAR 1


NUMBERS AND THE NUMBER SYSTEM

NUMBER AND PLACE VALUE

Reference	Objective	Notes and guidance																																																																																																				
N1.1A	Count forwards and backwards to and from 100, starting at any given number.	<p>Practise by chanting forwards and backwards between 1 and 100, beginning with 1 or any given number. Start by using a number track 1–10. For example:</p> <table><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></table> <p>Extend the number track to 20. Build up rows of 1–10, 11–20 and so on using number tracks until eventually a 100-square is created. Use concrete objects, number stories or pictorial representations. For example: count objects or people.</p>	1	2	3	4	5	6	7	8	9	10																																																																																										
1	2	3	4	5	6	7	8	9	10																																																																																													
N1.1B	Read, write and say aloud numbers written in figures from 1–100.	Start with reading and writing numbers from 1 to 10 in figures, and then 1 to 20 and so on.																																																																																																				
N1.1C	Match counting numbers (and also 0) to objects, images or actions.	<p>For example: match counting numbers to objects in bowls, including bowls that are empty (to match to 0). Use the terms ‘how many’ and ‘equal to’. Move on to estimating the number of objects and then check by counting.</p>																																																																																																				
N1.1D	Recognise patterns when counting to 100.	<p>Start with rows of number tracks 1–10, 11–20 and 21–30. Move on to recognising patterns in a 100-square. Look for patterns in digits, in rows and in columns.</p>																																																																																																				
N1.1E	Understand 2-digit numbers as some 10s and some 1s.	<p>Use mathematics apparatus and pictorial representations. For example: a bead string, base-10 cubes and/or a 100-square</p> <table><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>   <p>Use the term ‘ones’ (not ‘units’, because 1s relate to 10s, 100s and so on, whereas ‘units’ has many meanings).</p>	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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N1.1F	Identify missing numbers up to and including 100.	Start with a missing number on a number track 1–10, and then on a number track 1–20. Move on to more missing numbers between 1 and 20. Build up to missing numbers on a 100-square.
N1.1G	Compare and order numbers to 100.	Start with comparing and ordering numbers on bead strings and/or a number track up to and including 10, and then up to and including 20 and so on. Build up to comparing and ordering numbers on a 100-square. Put numbered items in order. Use the terms 'more than', 'greater than', 'less than', 'fewer', 'largest', 'smallest' and so on. Use number stories. For example: There are 3 cats. There are 8 dogs. Are there more cats or more dogs?

ADDITION AND SUBTRACTION

Reference	Objective	Notes and guidance
N1.2A	Say aloud the number that is 1 more than any number from 0–99 and 1 less than any number from 1–100.	Use concrete objects, bead strings, number tracks and a 100-square.
N1.2B	Partition a collection of up to 10 objects, and then up to and including 20 objects, in two.	Start by working with concrete objects such as blocks, and then mathematical apparatus such as bead strings, and then pictorial representations such as bar models. Partition 5 objects, 10 objects, the teen objects (into 10 and some more, and then into other partitions), and then 20 objects. For example: Partition 5 blocks into 1 block and 4 blocks, 2 blocks and 3 blocks and so on. Say aloud, 'Five blocks equals four blocks add one block; four blocks add one block equals five blocks; five blocks subtract one block equals four blocks; five blocks subtract four blocks equals one block'. Similarly, partition 10 beads on a bead string and 10 squares on a bar in two different colours. Each time, say aloud the mathematical statements. For example:  4 red squares add 6 white squares equals 10 squares. 4 add 6 equals 10.
N1.2C	Solve addition problems involving number bonds up to and including 20.	Use concrete objects, mathematical apparatus like a number track and pictorial representations to represent problems. Tell number stories. For example: 8 children play a game. 6 more children come to play. How many children play the game now? Encourage students to tell their own number stories, using pictures to assist them with language. Use the terms 'count on', 'add', 'how many altogether?', 'total' and 'equal to'.
N1.2D	Recognise and use the commutative nature of addition.	Recognise that it is easier to start at the larger number to count on and add. For example: To work out $5 + 14$, put 14 first and then count on 5.

N1.2E	Solve subtraction problems involving number bonds up to and including 20.	Use concrete objects, mathematical apparatus like a number track and pictorial representations to represent problems. Tell number stories. For example: <ul style="list-style-type: none">• 7 children sit on a bench, but 2 run off to play. How many children are left on the bench?• A waiter needs 15 plates. He has only 3 plates. How many more plates does he need? Encourage students to tell their own number stories, using pictures to assist them with language. Use the terms ‘how many left?’, ‘how many more do you need?’, ‘what is the difference?’, ‘count on to find...?’, ‘subtract’ and ‘equal to’.				
N1.2F	Understand the effect of adding or subtracting 0.					
N1.2G	Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) for number bonds up to and including 20.	Use pictorial representations to relate addition and subtraction. For example: <div><table><tr><td colspan="2">10</td></tr><tr><td>4</td><td>6</td></tr></table><div><div>$10 = 4 + 6$</div><div>$4 + 6 = 10$</div><div>$10 - 4 = 6$</div><div>$10 - 6 = 4$</div></div></div>	10		4	6
10						
4	6					
N1.2H	Solve missing number problems for addition and subtraction problems up to and including 20.	Use pictorial representations. For example: <div><table><tr><td colspan="2">12</td></tr><tr><td>?</td><td>3</td></tr></table></div> <div>Move on to missing-number calculations. For example:<ul style="list-style-type: none">• $6 = \square - 8$• $10 = \square + 4$</div>	12		?	3
12						
?	3					

FRACTIONS

Reference	Objective	Notes and guidance
N1.3A	Recognise, work out and name a half as one of two equal parts of an object or shape and recognise that two-halves make one-whole.	<p>Use pictorial representations of a variety of shapes, with halves cut in different orientations. For example:</p> <div style="display: flex; align-items: center;">     </div> <p>Emphasise the importance of equal parts. Frequently write 'one half' as well as '$\frac{1}{2}$'. Always represent fractions with a horizontal line between numerator and denominator.</p>

GEOMETRY AND MEASURE

MEASURE

Reference	Objective	Notes and guidance
G1.1A	Use words only (no numbers) to compare, order and describe different measures.	<p>Compare different quantities, using objects and the language of:</p> <ul style="list-style-type: none"> • length, for example: long/short, longer/shorter, tall/short, taller/shorter • mass/weight, for example: heavy/light, heavier than, lighter than • capacity and volume, for example: full/empty, more than, less than • time, for example: quicker, slower, earlier, later. <p>Use the terms mass and weight, and volume and capacity, interchangeably at this stage.</p>
G1.1B	Measure lengths/heights, mass/weight, capacity/volume with non-standard units.	<p>Use uniform non-standard measures. For example:</p> <ul style="list-style-type: none"> • the number of hands for a length • the number of cubes stacked for a height • the number of marbles for a weight • the number of cups full for a capacity. <p>Use the terms 'how long?', 'how heavy?' and so on.</p>
G1.1C	Recognise and know different denominations of local coins and notes (up to and including denominations of 100).	
G1.1D	Sequence events in chronological order.	Use the terms 'before', 'after', 'today', 'yesterday', 'tomorrow', 'morning', 'afternoon' and 'evening'.
G1.1E	Know the meaning of 'hour', 'day' and 'week' and say aloud days of the week in order.	
G1.1F	Recognise time in seconds, minutes and hours.	<p>Identify activities that take seconds, minutes or hours. For example:</p> <ul style="list-style-type: none"> • Count the number of seconds that it takes to walk across the classroom. • In 5 minutes, it is storytime. • You are at school for 6 hours.
G1.1G	Tell the time on an analogue clock to the hour and half past the hour.	<p>Relate half past the hour to halfway around a circle.</p> <p>Move the hands on a clock to show times half past the hour.</p> <p>Match key times of the day to o'clock times. For example: 7 o'clock in the evening is bed time.</p> <p>Use the terms 'morning', 'afternoon', 'evening', 'night', 'midday', 'noon' and 'midnight'.</p>

SHAPE

Reference	Objective	Notes and guidance
G1.2A	Recognise and say aloud the name of common 2D shapes: rectangles (including squares), circles and triangles.	Handle common 2D shapes, naming them and relating them to everyday objects. Recognise these objects on 3D solids. Recognise these shapes in different orientations and sizes.
G1.2B	Recognise and say aloud the name of 3D solids: cuboids (including cubes).	Handle cuboids and cubes, naming them and relating them to everyday objects. Recognise these solids in different orientations and sizes.
G1.2C	Identify and continue a repeating pattern of shapes.	Use objects to create repeating patterns. Draw shapes (by eye, not with straight edges) to continue a repeating pattern.

POSITION

Reference	Objective	Notes and guidance
G1.3A	Describe position, direction and movement.	Use the language of position, direction and motion. For example: 'left', 'right', 'top', 'bottom', 'between', 'near', 'close', 'far', 'up', 'down', 'forwards', 'backwards', 'under', 'over', 'behind', 'in front of', 'inside' and 'outside'.

STATISTICS

STATISTICS

Reference	Objective	Notes and guidance
S1.1A	Sort objects in a variety of ways and count the number of objects in each group.	<p>Sort and count students shapes and objects. For example:</p> <ul style="list-style-type: none">• Sort students into those who like red and those who do not, and then count and record the number of students who like red.• Sort 2D shapes into those with four sides, those with more than four sides and those with fewer than four sides, and then count and record the number of shapes with fewer than four sides. <p>Use this as an opportunity to reinforce the language of Geometry. For example: 'longer than'/'shorter than', 'heavier than'/'lighter than'</p>
S1.1B	Construct simple pictograms and block tables with one-to-one correspondence.	<p>For example:</p> <ul style="list-style-type: none">• Ask for students' favourite colours and then draw a pictogram, using coloured stickers to represent each student's favourite colour.• Weigh pieces of fruit against wooden bricks, and then draw a block graph showing the weight of each piece of fruit where each block represents one wooden brick.


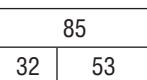
YEAR 2

NUMBERS AND THE NUMBER SYSTEM

NUMBER AND PLACE VALUE







Reference	Objective	Notes and guidance
N2.1A	Count in steps of 2 from 0, in steps of 5 from 0 and in steps of 10 from 0.	Use number tracks. Use the term 'count on'.
N2.1B	Understand 0 and count on a number line.	Introduce number lines beginning with 0 and with counting numbers labelled. Count on from 0 in 2s, 5s and 10s. Later on, use a number line marked in intervals of 5s or 10s to count on.
N2.1C	Recognise patterns in digits when counting in 2s from 0 (and so identify odd and even numbers), 5s from 0 and 10s from 0, from any number forwards and backwards.	Use number lines and a 100-square. Look for patterns in the digits. For example: <ul style="list-style-type: none"> When counting in 2s, all numbers end with 0, 2, 4, 6, 8 (use the terms 'odd' and 'even'). When counting in 5s, all numbers end with 0 or 5. When counting in 10s from any number, numbers always end with the same digit.
N2.1D	Read and write numbers in words up to and including 20.	Match numbers in words to figures.
N2.1E	Recognise the place value of each digit in a 2-digit number (10s and 1s) and write numbers in expanded form.	Use a bead string, Base-10 cubes or a place-value table and say aloud the 10s and 1s. For example: '53 is five 10s and three 1s'. Then write this in expanded form. For example: $53 = 50 + 3$. Move on to partition, say aloud and write in expanded form the 10s and 1s for numbers on a number track or in a 100-square. Count objects and people up to 100, grouped in 10s and 1s. For example: crayons, where there are packs of 10 crayons and some additional single crayons.
N2.1F	Compare and order numbers to 100 and write statements using inequality signs $<$ or $>$.	Use a bead string, a number track, and then a 100-square. Put numbered items in order. Use the terms 'more than' and 'greater than' for $>$ and 'less than' for $<$. Use number stories. For example: There are 23 camels. There are 34 horses. Are there more camels or more horses?
N2.1G	Round 2-digit numbers to the nearest 10.	Use a bead string, a number track, and then a 100-square. Use the terms 'close', 'near', 'closest' and 'nearest'.
N2.1H	Understand and use ordinal numbers to define position rather than amount.	Use practical activities and number stories. For example: Line up 3 students, point to the first student and say 'first', the second student and say 'second' and so on. Show students a picture of a race and ask them who is first.

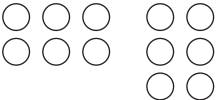
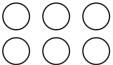


ADDITION AND SUBTRACTION

Reference	Objective	Notes and guidance
N2.2A	Know number bonds for numbers up to and including 20.	Know number bonds to 20 by heart.
N2.2B	Recognise and work out bonds for multiples of 10, up to and including 100.	Use related number bonds to 10. For example: • $10 - 9 = 1$ $100 - 90 = 10$ • $10 - 8 = 2$ $100 - 80 = 20$ • $10 - 7 = 3$ $100 - 70 = 30$
N2.2C	Mentally add numbers: a 2-digit number and 1s a 2-digit number and 10s a 2-digit number and a 2-digit number.	Use bead strings, Base-10 cubes and number lines. For a 2-digit number and 1s, count on in 1s, including bridging multiples of 10. For example: $17 + 8$ (bridging 20) Use number facts to solve related additions. For example: $6 + 3$ to work out $26 + 3$ and $56 + 3$ For a 2-digit number and 10s, count on in 10s. For example: $27 + 10$, $43 + 20$ For a 2-digit number and a 2-digit number, count on in 10s and 1s, including bridging multiples of 10. Use number stories and pictorial representations. For example: There are 28 children in class A. There are 25 children in class B. How many children are there altogether? Encourage students to tell their own number stories, using pictures to assist them with language. Use the terms 'How many?', 'How many altogether?', 'How many in total?' and so on.
N2.2D	Mentally subtract numbers: a 2-digit number and 1s a 2-digit number and 10s a 2-digit number and a 2-digit number.	Use bead strings, Base-10 cubes and number lines. For a 2-digit number and 1s, count up to find the difference, including bridging multiples of 10. For example: For $17 - 8$, count up from 8 to 10 then from 10 to 17. Use number facts to solve related subtractions. For example: Use $9 - 4$ to work out $39 - 4$ and $99 - 4$. For a 2-digit number and 10s, count back in 10s. For example: $27 - 10$ and $43 - 20$ For a 2-digit number and a 2-digit number, count up in 10s and 1s to find the difference, including bridging multiples of 10. For example: $63 - 38 = 25$  Use number stories and pictorial representations. For example: There are 28 students in a class. 12 are boys. How many students are girls? Encourage students to tell their own number stories, using pictures to assist them with language. Use the terms 'How many?', 'How many more?', 'find the difference' and so on.
N2.2E	Add three 1-digit numbers.	Introduce different strategies, like looking for pairs that add to 10. For example: For $4 + 8 + 6$, $4 + 6 = 10$ and $8 + 10 = 18$, so $4 + 8 + 6 = 18$. Use concrete objects, number stories and pictorial representations.
N2.2F	Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) for calculations up to and including 100.	Use pictorial representations to relate addition and subtraction. For example:  $85 = 32 + 53$ $32 + 53 = 85$ $85 - 32 = 53$ $85 - 53 = 32$

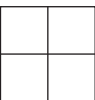

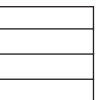



N2.2G	Recognise the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	<p>Use pictorial representations to support calculations. For example: $72 - 35 = 37$ Check:</p> <table border="1"><tr><td colspan="2">72</td></tr><tr><td>37</td><td>35</td></tr></table> <p>$37 + 35 = 72$</p> <p>Use pictorial representations to represent missing number problems. For example:</p> <table border="1"><tr><td colspan="2">40</td></tr><tr><td>22</td><td>?</td></tr></table> <p>Move on to missing-number calculations. For example:</p> <ul style="list-style-type: none">• $36 + \square = 40$• $40 = \square + 22$• $18 = \square - 22$	72		37	35	40		22	?
72										
37	35									
40										
22	?									

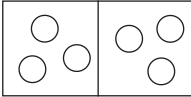
MULTIPLICATION AND DIVISION

Reference	Objective	Notes and guidance
N2.3A	Work out doubles up to and including 20.	<p>Relate doubling to repeated counting. Start with concrete objects and pictorial representations, including arrays. For example:</p> <p>    3 Double 3 = 6.    3 </p> <p>Use the term 'double'.</p>
N2.3B	Work out related halves for doubles up to and including 20.	<p>Find half of numbers by splitting arrays into two equal parts. Use the term 'half'.</p>
N2.3C	Solve 1-step problems involving multiplying by 2, multiplying by 5 and multiplying by 10.	<p>Use concrete objects, pictorial representations and arrays. Make connections between repeated addition, counting, number patterns and arrays. Relate multiplying by two to 'doubling'. Use the terms 'lots of', 'groups of', 'times' and 'multiplied by'. Use number stories. For example:</p> <ul style="list-style-type: none"> • There are 3 pairs of gloves in a box. How many gloves are there? • There are 2 girls. There are 5 times more boys than girls. How many boys are there?
N2.3D	Solve 1-step problems involving dividing by 2, dividing by 5 and dividing by 10 (sharing equally or grouping).	<p>Use concrete objects, pictorial representations and arrays. Relate dividing by two to 'halving'. Use number stories. For example: There are 8 children in a park. One-half are boys. How many boys are there? Use number stories to demonstrate sharing equally. For example: There are 20 pens. They are shared equally between 10 children. How many pens does each child get? Use number stories to demonstrate grouping. For example: How many pairs of socks (groups of 2 socks) make 8 socks? Use the terms 'groups of', 'share equally', 'one-half' and so on.</p>

N2.3E	Recognise the commutative nature of multiplication.	<p>Demonstrate using arrays. For example:</p>  $2 \times 3 = 6$ $3 \times 2 = 6$ $2 \times 3 = 3 \times 2$
N2.3F	Read, write and interpret mathematical statements involving multiplication and division using the multiplication (\times), division (\div) and equals ($=$) signs, for the 2, 5 and 10 multiplication tables.	<p>Relate multiplication and division as inverse operations, always supporting with objects or arrays. For example:</p> $2 \times 3 = 6$  $3 \times 2 = 6$  $6 \div 3 = 2$ $6 \div 2 = 3$
N2.3G	Recognise and work out multiplication and division for the 2, 5 and 10 multiplication tables (up to and including $10 \times \dots$).	<p>Use a variety of terms to describe multiplication and division. For example:</p> <ul style="list-style-type: none"> • '4 times 2' and 'Share 8 equally between 2'. • '3 lots of 10' and 'Divide 30 by 10'. • '6 groups of 2' and 'How many groups of 2 make 12?'
N2.3H	Solve missing number problems for multiplication and division facts for the 2, 5 and 10 multiplication tables (up to and including $10 \times \dots$).	<p>Use pictorial representations for missing-number problems. For example: Write mathematical statements for this array:</p>  <p>Move on to missing-number calculations. For example:</p> <ul style="list-style-type: none"> • $\square \div 2 = 6$ • $\square \times 10 = 30$


FRACTIONS

Reference	Objective	Notes and guidance
N2.4A	Recognise, work out and name one-quarter as one of four equal parts of an object or shape and recognise that four-quarters make one-whole.	<p>Use pictorial representations of a variety of shapes, with quarters cut in different orientations. For example:</p>  $\frac{1}{4}$ s  $\frac{1}{4}$ s  $\frac{1}{4}$ s  $\frac{1}{4}$ s  $\frac{1}{4}$ s NOT  $\frac{1}{4}$ s
N2.4B	Recognise and name two-quarters and three-quarters of an object or shape and recognise that two-quarters is equivalent to one-half.	<p>Use pictorial representations of a variety of shapes with quarters shown in different orientations, and three-quarters or two-quarters shaded.</p> <p>Show that $\frac{2}{4}$ of a shape is the same as $\frac{1}{2}$.</p> <p>Use the terms 'shaded', 'not shaded' and 'equivalent to'.</p> <p>Introduce the notation for $\frac{2}{4}$ and $\frac{3}{4}$, but write 'two-quarters' and 'three-quarters' as well, to avoid confusion with notation. (Note: These are the first examples of non-unit fractions.)</p>

N2.4C	Work out half of an even set of objects or quantity.	<p>Use fraction mats, concrete objects and pictorial representations, including arrays, to work out halves and quarters of quantities. For example:</p>  <p>Share 6 counters into 2 equal groups. $1 \text{ half of } 6 = 3$ $\frac{1}{2} \text{ of } 6 = 3$ Use the terms 'sharing equally' and 'half each' or 'quarter each'. Use number stories.</p>
N2.4D	Relate half to dividing by 2.	<p>Use concrete objects, pictorial representations and arrays to show that finding half and dividing by 2 are the same. Use the terms 'two equal parts' and 'sharing equally'.</p>
N2.4E	Recognise halves and quarters as numbers on a number line; find and count in halves and quarters on a number line.	<p>Count up in halves on a number line, saying aloud, 'one-half, one, one and one-half, two, two and one-half ...'. Write $\frac{1}{4}, \frac{2}{4} \dots$ on a number line, saying aloud 'one quarter, two quarters ...'.</p>
N2.4F	Work out half of an odd set of objects or quantity.	<p>Use pictorial representations and objects such as cakes and pizzas. Use the terms 'sharing equally' and 'half each'. Use number stories.</p>

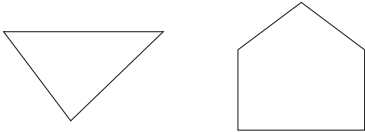
GEOMETRY AND MEASURE

MEASURE

Reference	Objective	Notes and guidance
G2.1A	Measure lengths/heights (cm and m) with standard units.	<p>Understand the need for a standard unit of length. For example: When measuring the table in lengths of hands, understand that sizes of different people's hands may be different.</p> <p>Introduce common standard units. Start with a non-labelled ruler (divided into cm). For example:</p>  <p>Move on to, for example:</p> <ul style="list-style-type: none"> centimetres, marked on a ruler in 1 cm intervals (no mm marked) up to 30 cm metres for longer lengths using a metre ruler. <p>Use the term 'how long?'.</p>
G2.1B	Choose appropriate standard units (cm or m) to use; compare, order and describe lengths/heights, where measures are in the same units, and record the results using $>$, $<$ and $=$.	<p>Choose appropriate measuring equipment. For example:</p> <ul style="list-style-type: none"> a 30 cm ruler to measure a pencil case a metre ruler to measure the length of a classroom. <p>Measure lengths. For example: Measure a length of 12 cm and a length of 22 cm and state which is longer.</p>
G2.1C	Compare measures using simple multiples of 2, such as half, twice and double.	Use the terms 'half as high', 'twice as wide', 'double the length' and so on.
G2.1D	Order different denominations of local coins and notes (up to and including denominations of 100).	
G2.1E	Make amounts using two or three coins (or notes) up to 20 units of money.	
G2.1F	Find change from units of money up to 20 units.	
G2.1G	Record local money denominations.	Count coins and notes that are denominations in 10s and 1s, 10s and 2s, 20s and 1s or 20s and 5s and so on up to 100.
G2.1H	Solve simple problems in a practical context involving money.	<p>Use this as an opportunity to reinforce Year 2 Number. For example:</p> <ul style="list-style-type: none"> Find different combinations of coins that total 100 units of money. Add 2-digit amounts of money (integers only). Round amounts of money to the nearest 10 units.
G2.1I	Read and write days of the week.	
G2.1J	Know the meaning of 'month' and 'year' and say aloud months of the year.	

G2.1K	Tell the time on an analogue clock using quarter past and quarter to the hour.	<p>Relate quarter past the hour to quarter of the way around a circle. Move the hands on a clock to show quarter past the hour. Use the description 'quarter after an hour' for quarter past. Relate quarter to the hour to quarter of the way around a circle in the direction opposite to quarter past. Move the hands on a clock to show times quarter to the hour. Use the description 'quarter before an hour' for quarter to.</p>
G2.1L	Know the number of hours in a day.	

SHAPE

Reference	Objective	Notes and guidance
G2.2A	Identify, describe and compare simple properties of common 2D shapes; sort the shapes accordingly.	<p>Sort shapes on the basis of their properties, using the terms 'straight' and 'curved' and the number of 'sides' and 'vertices'.</p> <p>Include non-regular shapes. For example:</p> 
G2.2B	Recognise and say aloud the name of 3D solids: cylinder, pyramid and sphere.	<p>Name cylinders, pyramids and spheres (from 3D solids, not 2D representations), naming then and relating them to everyday objects. Recognise these shapes in different orientations and sizes.</p>
G2.2C	Classify shapes and solids as 2D or 3D.	Classify by handling shapes and solids (not by looking at 2D representations of 3D solids).
G2.2D	Identify, describe and compare the simple properties of common 3D shapes; sort the shapes accordingly.	Use the terms 'edges', 'vertices' and 'faces'.
G2.2E	Identify 2D shapes on the surface of 3D solids.	<p>For example:</p> <ul style="list-style-type: none"> • a rectangle on a cuboid • a circle on a cylinder • a triangle on a pyramid.
G2.2F	Recognise symmetry in shapes and objects with a vertical line of symmetry.	<p>Create irregular symmetrical shapes by cutting shapes from folded paper, or by using paint and then folding to create symmetrical patterns. Recognise symmetry in everyday objects. For example:</p> <ul style="list-style-type: none"> • flowers • butterflies • buildings. <p>Use the terms 'symmetry', 'symmetrical', 'one half fits exactly onto the other' and so on.</p>

POSITION

Reference	Objective	Notes and guidance
G2.3A	Describe position, direction and movement, including rotations of whole, half and quarter turns; clockwise and anti-clockwise.	<p>Make whole, half and quarter turns in both directions and connect turning clockwise and anti-clockwise with movement on a clock face. Combine direction and movement. For example: Make a half turn anti-clockwise and take 1 step forward/backward.</p>

STATISTICS

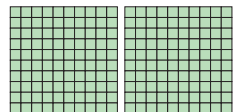
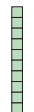

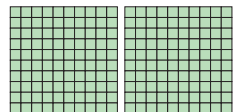
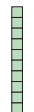

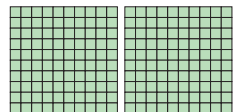
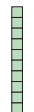

STATISTICS

Reference	Objective	Notes and guidance									
S2.1A	Interpret and construct simple block diagrams.	Record, interpret and compare information where one block represents one item.									
S2.1B	Interpret and construct simple pictograms (where one picture represents one or two items).	Record, interpret and compare information in a pictogram. Work with the key in a pictogram where one picture represents two items, and relate this to counting up in 2s.									
S2.1C	Interpret simple tables.	<p>Use tables containing two columns. For example: numbers of cars, lorries and motorbikes on a picture of a motorway Include Carroll diagrams. For example:</p> <table border="1"> <tr> <td></td><td>All straight sides</td><td>Some curved sides</td></tr> <tr> <td>2D shapes</td><td></td><td></td></tr> <tr> <td>3D shapes</td><td></td><td></td></tr> </table>		All straight sides	Some curved sides	2D shapes			3D shapes		
	All straight sides	Some curved sides									
2D shapes											
3D shapes											
S2.1D	Solve problems involving counting the number of objects in categories and sorting the categories by quantity.	For example: Ask how many blue coats there are on some coat hooks, and then ask if blue is the most popular colour for coats on the hooks.									

YEAR 3

NUMBERS AND THE NUMBER SYSTEM

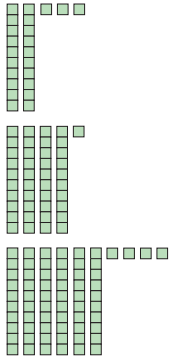
NUMBER AND PLACE VALUE


Reference	Objective	Notes and guidance												
N3.1A	Count beyond 100 and recognise patterns when counting across 100s boundaries to 1000.	Look for patterns when counting up to and across 100s boundaries. For example: 99, 100, 101 ... 199, 200, 201 ... 299, 300, 301 ... 999, 1000.												
N3.1B	Count from 0 in multiples of 3, 4, 50 and 100.	Use a number line to count on in 3s and 4s from 0. Relate counting in 4s to counting in 2s. Use a number line marked in intervals of 10 to count on in 50s. Use number lines marked in intervals of 50 and 100. Look for patterns when counting in 4s, 50s and 100s. Use the term 'count on'.												
N3.1C	Read, write and say aloud numbers written in figures from 100 to 1000.	<p>Start with numbers from 100 to 199 in figures. Use mathematics apparatus and pictorial representations. For example: Base-10 cubes and a place-value table.</p> <div> <table border="1"> <thead> <tr> <th>100s</th><th>10s</th><th>1s</th></tr> </thead> <tbody> <tr> <td></td><td></td><td></td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>100s</th><th>10s</th><th>1s</th></tr> </thead> <tbody> <tr> <td>2</td><td>1</td><td>5</td></tr> </tbody> </table> </div> <p>Move on to reading, writing and saying aloud numbers not in a place-value table.</p>	100s	10s	1s				100s	10s	1s	2	1	5
100s	10s	1s												
														
100s	10s	1s												
2	1	5												
N3.1D	Recognise the place value of each digit in a 3-digit number (100s, 10s, 1s) and write numbers in expanded form.	<p>Use Base-10 cubes and a place-value table to partition and say aloud the 100s, 10s and 1s. For example: '253 is two 100s, five 10s and three 1s'.</p> <p>Then write in expanded form. For example: $253 = 200 + 50 + 3$.</p> <p>Move on to applying partitioning in different ways. For example: $253 = 200 + 53$ or $253 = 250 + 3$.</p> <p>Count objects and people up to and including 1000, grouped in 100s, 10s and 1s. For example: a picture of people in stands at a sports event, where each stand seats 100 people and each row in each stand seats 10 people</p>												
N3.1E	Write or say aloud 1, 10 or 100 more than any given number up to 1000 (with answers no more than 1000); write or say aloud 1, 10 or 100 less than any given number up to 1000 (with answers no less than 0).	Use Base-10 cubes and a place-value table.												

N3.1F	Compare and order numbers to 1000 and write statements using inequality signs $<$ or $>$.	Use a number line going up in intervals of 100. Use the terms 'more than' and 'greater than' for $>$ and 'less than' for $<$. Put numbered items in order. Use number stories. For example: On a motorway, there are 194 cars and there are 126 lorries. Are there more cars or more lorries?
N3.1G	Round 3-digit numbers to the nearest 100.	Use a number line. Use the terms 'close', 'near', 'closest' and 'nearest'.







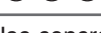
ADDITION AND SUBTRACTION

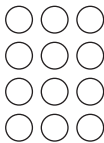
Reference	Objective	Notes and guidance
N3.2A	Add several 1-digit and 2-digit numbers (up to and including 20).	Introduce different strategies, like looking for pairs that add to 10 or 20 and looking for doubles. For example: For $14 + 5 + 6 + 5$, $14 + 6 = 20$, $5 + 5 = 10$ and $20 + 10 = 30$, so $14 + 5 + 6 + 5 = 30$.
N3.2B	Recognise and work out bonds for numbers to 100.	Use number facts to work out number bonds to 100. For example: <ul style="list-style-type: none"> $100 = 97 + 3$ $100 = 87 + 13$ $100 = 77 + 23$
N3.2C	Mentally add numbers: a 3-digit number and 1s a 3-digit number and 10s a 3-digit number and 100s.	Use Base-10 cubes and number lines. For a 3-digit number and 1s, count on in 1s, including bridging multiples of 10. For example: $136 + 8$ (bridging 140) Use number facts to solve related additions. For example: $6 + 3$ to work out $126 + 3$ and $54 + 5$ to work out $254 + 5$ For a 3-digit number and 10s, count on in 10s. For example: $127 + 10$, $543 + 20$ For a 3-digit number and 100s (for answers less than 1000 only), count on in 100s. For example: $352 + 100$, $294 + 300$ Use number stories and pictorial representations. For example: There are 280 children in school A. There are 187 children in school B. How many children are there in both schools? Encourage students to tell their own number stories, using pictures to assist them with language. Use the terms 'How many?', 'How many altogether?', 'How many in total?' and so on.
N3.2D	Mentally subtract numbers: a 3-digit number and 1s a 3-digit number and 10s a 3-digit number and 100s.	Use Base-10 cubes and number lines. For a 3-digit number and 1s, count back in 1s, including bridging multiples of 10. For example: $132 - 8$ (bridging 130) Use number facts to solve related subtractions. For example: $9 - 4$ to work out $239 - 4$ and $54 - 5$ to work out $354 - 5$ For a 3-digit number and 10s, count back in 10s. For example: $146 - 10$, $457 - 20$ For a 3-digit number and 100s, count back in 100s. For example: $372 - 100$, $821 - 300$ Use number stories and pictorial representations. For example: There are 280 students in a school. 138 are boys. How many are girls? Encourage students to tell their own number stories, using pictures to assist them with language. Use the terms 'How many?', 'How many more?', 'find the difference' and so on.

N3.2E	Add numbers with two digits, using formal written methods of column addition.	<p>Support with Base-10 cubes and place-value cards.</p>  $\begin{array}{r} 23 \\ + 41 \\ \hline 64 \end{array}$ <p>Start with no regrouping (carrying) and answers less than 100. For example:</p> $\begin{array}{r} 47 \\ + 32 \\ \hline 79 \end{array}$ <p>Move on to answers over 100. For example:</p> $\begin{array}{r} 76 \\ + 52 \\ \hline 128 \end{array}$ <p>Introduce regrouping (carrying). For example:</p> $\begin{array}{r} 68 \\ + 59 \\ \hline 127 \\ \textcolor{blue}{1} \end{array}$ <p>(Note: these calculations should be possible mentally too.)</p> <p>Use number stories.</p>
N3.2F	Add numbers with up to three digits, using formal written methods of column addition.	<p>Support with Base-10 cubes and place-value cards.</p> <p>Include 3-digit numbers add 2-digit numbers and 3-digit numbers add 3-digit numbers, all with answers less than 1000. For example:</p> $\begin{array}{r} 425 \\ + 67 \\ \hline 492 \\ \textcolor{blue}{1} \end{array} \quad \begin{array}{r} 679 \\ + 243 \\ \hline 922 \\ \textcolor{blue}{11} \end{array}$ <p>Use number stories.</p>

N3.2G	Subtract numbers with two digits, using formal written methods of column subtraction.	<p>Support with Base-10 cubes. Start with no regrouping. For example:</p> $\begin{array}{r} 74 \\ -32 \\ \hline 42 \end{array}$ <p>Introduce regrouping. For example:</p> $\begin{array}{r} 51 \\ \cancel{6}3 \\ -27 \\ \hline 36 \end{array}$ <p>Use the terms 'exchange one 10 for ten 1s' or 'exchange one 100 for ten 10s'. (Note: use 'exchange', not 'borrow', because borrowing implies there is something to give back). Use number stories.</p>
N3.2H	Subtract numbers with up to three digits, using formal written methods of column subtraction.	<p>Include 3-digit numbers subtracted by 2-digit numbers and 3-digit numbers subtracted by 3-digit numbers. For example:</p> $\begin{array}{r} 81 \\ 947 \\ -52 \\ \hline 895 \end{array} \quad \begin{array}{r} 711 \\ 825 \\ -346 \\ \hline 479 \end{array}$ <p>Use number stories.</p>
N3.2I	Estimate numbers on a number line.	<p>Estimate a number marked with an arrow on a number line that goes up in intervals of 10 or 100. Find the position of a number on a number line that goes up in intervals of 10 or 100. For example: Use an arrow to mark 29 on this number line:</p> $\begin{array}{ccccccc} 0 & 10 & 20 & 30 & 40 & 50 \\ & & & & & \end{array}$
N3.2J	Estimate the answer to a calculation.	Use rounding to the nearest 10 or 100 and then mental calculation.
N3.2K	Understand when to add and when to subtract and the relationship between addition and subtraction.	<p>Use addition to check subtraction calculations and vice versa. For example:</p> $\begin{array}{r} 315 \\ 462 \\ -178 \\ \hline 284 \end{array} \quad \text{Check:} \quad \begin{array}{r} 284 \\ +178 \\ \hline 462 \end{array}$ <p>Use pictorial representations. For example:</p>  <p>How many balloons does each child get?</p> <p>Tell number stories and encourage students to decide which operation to use. Move on to missing-number calculations. For example:</p> <ul style="list-style-type: none"> • $376 = 300 + \square + 6$ • $\square + 223 = 459$ • $367 - \square = 250$

MULTIPLICATION AND DIVISION

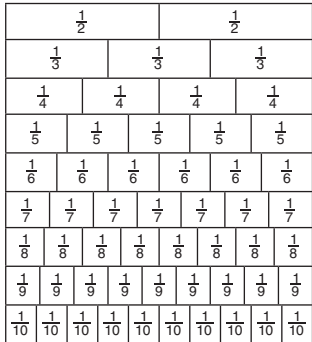
Reference	Objective	Notes and guidance
N3.3A	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables; recognise and work out multiplication and division for the 3 and 4 multiplication tables (up to and including $10 \times \dots$).	<p>Relate multiplication to counting on and repeated addition. Use the terms 'lots of', 'groups of', 'times' and 'multiplied by'. Connect the 2 and 4 multiplication tables, and the 5 and 10 multiplication tables, through doubling. Use a variety of terms to describe multiplication and division. For example:</p> <ul style="list-style-type: none"> • '5 times 4' and 'Share 20 equally between 5'. • '4 lots of 3' and 'Divide 12 by 4'. • '6 groups of 3' and 'How many groups of 3 are there in 18?' <p>Use the commutative nature of multiplication. For example:</p> <ul style="list-style-type: none"> • Use 2×4 to work out 4×2. • Use 5×3 to work out 3×5.
N3.3B	Know doubles up to and including 20; know their related halves.	Know doubles and halves up to and including 20 by heart.
N3.3C	Multiply numbers by 100 with answers up to and including 1000.	Relate this to counting from 0 in multiples of 100 and repeated addition to 1000.
N3.3D	Read, write and interpret mathematical statements involving multiplication and division using the multiplication (\times), division (\div) and equals ($=$) signs, for the 3 and 4 multiplication tables.	<p>Relate multiplication and division as inverse operations and support with arrays. For example:</p> <p>  $6 \times 3 = 18$  $3 \times 6 = 18$  $18 \div 3 = 6$  $18 \div 6 = 3$    </p>
N3.3E	Solve 1-step problems involving multiplying and dividing by 2, 3, 4, 5 and 10.	<p>Use concrete objects, pictorial representations and arrays. Use number stories. For example: There are 4 girls. There are three times as many boys as girls. How many boys are there? Use number stories to demonstrate sharing equally. For example: There are 12 pens. They are shared equally between 4 children. How many pens does each child get? Use number stories to demonstrate grouping. For example: There are 20 children in a class. How many groups of 4 children can you make? For multiplying, use the terms 'lots of', 'groups of', 'times' and 'multiplied by'. For dividing, use the terms 'groups of', 'share equally', 'half' and so on.</p>








N3.3F	Solve missing number problems for multiplication and division facts for the 2, 3, 4, 5 and 10 multiplication tables.	<p>Use pictorial representations for missing-number problems. For example: Write mathematical statements for this array.</p>  <p>Move on to missing-number calculations. For example:</p> <ul style="list-style-type: none"> • $\square \div 3 = 6$ • $\square \times 4 = 28$
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ALL FOUR OPERATIONS

Reference	Objective	Notes and guidance
N3.4A	Solve simple problems in contexts, deciding which of the four operations to use.	<p>Use number stories.</p> <p>Encourage students to tell their own number stories, using pictures to assist them with language.</p>

FRACTIONS

Reference	Objective	Notes and guidance
N3.5A	Recognise, find and name unit fractions of a shape (for fractions with denominators up to and including 10).	<p>Use pictorial representations of a variety of shapes, cut into thirds, fifths, sixths and so on. Introduce the fraction wall.</p>  <p>Emphasise the importance of equal parts.</p> <p>Write 'one-half', 'one-third', 'one-quarter', 'one-fifth', ... 'one-tenth' as well as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$... $\frac{1}{10}$.</p> <p>Always represent fractions with a horizontal line between numerator and denominator.</p>

N3.5B	Recognise that two-halves make one-whole, three-thirds make one-whole, four-quarters make one-whole, five-fifths make one-whole ... ten-tenths make one-whole (for fractions with denominators up to and including 10).	Use pictorial representations of a variety of shapes.
N3.5C	Recognise, find and name non-unit fractions of a shape (for fractions with denominators up to and including 10).	<p>Use pictorial representations of a variety of shapes, cut into thirds, fifths, sixths and so on. Use the fraction wall and fraction bars. For example:</p>  <p>3 equal parts = thirds 2 parts shaded = two-thirds = $\frac{2}{3}$ 1 part not shaded = one-third = $\frac{1}{3}$ Emphasise the importance of equal parts. Start with naming unit fractions: $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{10}$... before moving on to related non-unit fractions. Write 'two-thirds', 'three-fifths', 'seven-tenths' and so on as well as $\frac{2}{3}$, $\frac{3}{5}$, $\frac{7}{10}$...</p>
N3.5D	Compare and order unit fractions and compare and order fractions with the same denominators (for fractions with denominators up to and including 10) and write statements using inequality signs < or >.	<p>Use pictorial diagrams, such as fraction walls, concrete objects and fraction bars. For example:</p>  one-half = $\frac{1}{2}$  two-fifths = $\frac{2}{5}$  one-fifth = $\frac{1}{5}$  four-fifths = $\frac{4}{5}$ <p>One-half is greater than one-fifth. $\frac{1}{2} > \frac{1}{5}$ Two-fifths is less than four-fifths. $\frac{2}{5} < \frac{4}{5}$</p>
N3.5E	Recognise, find and name equivalent fractions (for fractions with denominators up to and including 10), using pictorial representations.	<p>Use pictorial representations of a variety of shapes, with fractions cut in different orientations. Use the fraction wall and fraction bars. For example:</p>  one-quarter = $\frac{1}{4}$  two-eighths = $\frac{2}{8}$ <p>$\frac{1}{4} = \frac{2}{8}$ Use the term 'equivalent to'.</p>
N3.5F	Recognise and name a third as one of three equal parts on a number line and recognise that three-thirds make one-whole; recognise and name other unit fractions as one of equal parts on a number line and recognise how many of the unit fractions make a whole (for fractions with denominators up to and including 10).	<p>Use a number line. Emphasise the importance of equal parts. Write $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3} = 1$ whole. Write $\frac{1}{10}$, $\frac{2}{10}$, $\frac{3}{10}$... $\frac{10}{10} =$ one-whole.</p>

N3.5G	Count in unit fractions along a number line (for fractions with denominators up to and including 10); and count beyond one-whole.	Count up in unit fractions on a number line, saying aloud, 'one-third, two-thirds, three-thirds, which is equivalent to 1, 1 and one-third, 1 and two-thirds ...' or 'one-tenth, two-tenths, three-tenths ... ten-tenths, which is equivalent to 1, 1 and one-tenth, 1 and two-tenths ...'.
N3.5H	Recognise, find and name equivalent fractions (for fractions with denominators up to and including 10) on a number line.	<p>For example:</p> $\begin{array}{r} 81 \\ 947 \end{array} \quad \begin{array}{r} 71 \\ 825 \end{array}$ $\begin{array}{r} - 52 \\ 895 \end{array} \quad \begin{array}{r} - 346 \\ 479 \end{array}$ <p>Use the term 'equivalent to'</p>
N3.5I	Understand whole and fractions of a whole (for fractions with denominators up to and including 10) as mixed numbers.	<p>Use pictorial representations of a variety of shapes to understand mixed numbers using wholes and halves, wholes and thirds, wholes and quarters and so on.</p> <p>Write 'one-whole' and 'one-half', 'two-wholes' and 'three-quarters' ... as well as $1\frac{1}{2}$, $2\frac{3}{4}$</p>

GEOMETRY AND MEASURE

MEASURE

Reference	Objective	Notes and guidance
G3.1A	Measure lengths (mm, cm and m), weights/masses (g and kg) and capacity (ml and l) with standard units.	Understand the need for standard units of weight/mass and capacity. Introduce common standard units. For example: <ul style="list-style-type: none"> • mm using a ruler marked with mm and cm • g and kg using balancing scales and 10 g, 50 g, 100 g and 1 kg weights • ml and l using jugs with simple scales marked in 50 ml or 100 ml intervals and litre bottles.
G3.1B	Choose appropriate standard units (mm or cm or m; g or kg; ml or l) to use; compare, order and describe weights/masses and capacities, where measures are in the same units, and record the results using >, < and =.	Choose appropriate units. For example: <ul style="list-style-type: none"> • mm to measure an ant or the exact length of a pencil • g to measure the weight of a coin and kg to measure the weight of a person • ml to measure water in a glass and l to measure water in a bath. Measure and compare weights/masses and capacities.
G3.1C	Know that 10mm is equivalent to 1 cm; 100 cm is equivalent to 1 metre; 1000 g is equivalent to 1 kg and 1000 ml is equivalent to 1 l.	Use practical and measuring equipment to demonstrate equivalence between measures. For example: <ul style="list-style-type: none"> • Measure 1 cm on a ruler and then measure again in mm on a ruler. • Measure a 1 m length of string on a metre ruler, then use a ruler marked with cm. • Weigh a 1 kg bag of sugar on digital scales in g and then in kg.
G3.1D	Compare lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	Compare measures up to 1000, starting with measures in the same units. For example: <ul style="list-style-type: none"> • 230 g and 203 g • 750 ml and 675 ml. Move on to measures in mixed units. For example: 1 m and 20 cm and 75 cm (using knowledge that 1 m is equivalent to 100 cm, but not working out conversions).
G3.1E	Estimate length/height, mass/weight, volume/capacity and time to the nearest appropriate unit.	Compare to known measures. For example: <ul style="list-style-type: none"> • Estimate the height of a door as 'twice my height'. • Estimate the volume of a jug as 'four cups'.
G3.1F	Add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) in the same units.	Add and subtract measures (up to 3-digits). For example: <ul style="list-style-type: none"> • $75 \text{ cm} + 45 \text{ cm} = 120 \text{ cm}$ • $125 \text{ g} + 350 \text{ g} = 475 \text{ g}$.
G3.1G	Compare, order, describe and record temperature (positive integers of degrees Celsius only).	Use the terms 'hot', 'warm', 'cold', 'hotter', 'colder', 'how hot?' and so on. Introduce the common standard unit of degrees Celsius using a thermometer.
G3.1H	Solve measure problems, involving comparing, rounding and the four operations (integer measures only).	Use this as an opportunity to reinforce Year 3 Number. For example: <ul style="list-style-type: none"> • Compare lengths, mass and volume/capacity up to 1000 units. • Add and subtract 3-digit measures (integers only). • Round measures to the nearest 100 units.
G3.1I	Read and record amounts of local money in notes and coins up to 1000 units.	Use standard abbreviations to record local currency.

G3.1J	Know how many of a smaller denomination is equivalent to a bigger denomination and record them separately.	Count these denominations and record them separately as mixed units (not decimals).
G3.1K	Add and subtract amounts of money to give change.	Use the local currency and add and subtract amounts, including mixed units.
G3.1L	Solve problems in a practical context involving money (integer money amounts only).	Use this as an opportunity to reinforce Year 3 Number. For example: <ul style="list-style-type: none"> • Compare amounts up to 1000 units. • Add and subtract 3-digit amounts of money (integers only). • Round amounts of money to the nearest 100 units.
G3.1M	Show and write the times: o'clock, half past, quarter past and quarter to the hour.	Draw the hands on a clock face to show o'clock, half-past, quarter to and quarter past the hour. Write these times using numerals.
G3.1N	Know the number of minutes in one hour and the number of seconds in one minute.	

SHAPE

Reference	Objective	Notes and guidance
G3.2A	Understand quarter and three-quarter turn rotations.	Make quarter and three-quarter turns in both clockwise and anti-clockwise directions.
G3.2B	Recognise angles as a description of a turn and identify right angles.	Demonstrate that a right angle is a quarter of a turn and that two right angles make a half-turn, three right angles make three-quarters of a turn and four right angles make a complete turn.
G3.2C	Draw 2D shapes (not to accurate dimensions) on a cm squared grid and make 3D solids.	Use a ruler or straight edge to draw 2D shapes. For example: <ul style="list-style-type: none"> • a square • a rectangle. Use modelling materials and cubes to make 3D solids. For example: <ul style="list-style-type: none"> • cubes • cylinders • cuboids.
G3.2D	Identify right angles in 2D shapes and know the geometric symbol for right angle.	Identify the number of right angles in a shape and in everyday objects, such as doors or windows.
G3.2E	Identify horizontal and vertical lines.	Identify horizontal and vertical lines in shapes and in everyday objects.
G3.2F	Recognise symmetry in pictures of shapes and real life objects with a vertical or horizontal line of symmetry; draw the single line of symmetry.	Create irregular symmetrical shapes by cutting shapes from folded paper and drawing the line of symmetry along the fold. Recognise symmetry in pictures of everyday objects and shapes and draw the line of symmetry. For example: <ul style="list-style-type: none"> • in flowers • in butterflies • in an isosceles triangle.

STATISTICS

STATISTICS

Reference	Objective	Notes and guidance
S3.1A	Record data in simple tally charts and tables.	Collect data using tallies in a preprepared table. Give practical experience in tallying. For example: Tally the number of boys, girls and adults in a park.
S3.1B	Interpret simple tally charts and tables.	Use counting in 5s for interpreting tally charts. Read information from a simple table with two or three rows or columns.
S3.1C	Interpret and construct pictograms (where one picture represents one, two, five or ten items) and bar charts (using a scale of 1, 2, 5 or 10).	Record, interpret and compare information in a pictogram or a bar chart. Work with the key in a pictogram or the scale on a bar chart, and relate this to counting up, for example in 2s, 5s or 10s.
S3.1D	Solve problems using data in tables and presented in scaled bar charts or pictograms, where two categories are compared.	For example, use a bar chart showing people's favourite colours: <ul style="list-style-type: none"> • Ask how many fewer people liked blue than red. • Ask how many more people liked red than green. Use the terms 'How many?', 'How many more?', 'How many fewer', 'most/least popular' and so on.

YEAR 4

NUMBERS AND THE NUMBER SYSTEM

NUMBER AND PLACE VALUE

Reference	Objective	Notes and guidance								
N4.1A	Recognise patterns when counting across 1000s boundaries to 10 000.	Look for patterns when counting across 1000s boundaries. For example: 999, 1000, 1001 ... 1999, 2000, 2001 ... 2999, 3000, 3001 ... 9999, 10 000.								
N4.1B	Count from 0 in multiples of 6, 8, 25 and 1000.	Use a number line to count on in 6s and 8s from 0. Relate counting in 6s to counting in 3s and relate counting in 4s to counting in 8s. Use a number line marked in intervals to count on in 25s and 1000s. Look for patterns when counting in 25s and 1000s. Relate counting in 25s to counting in 50s and 100s. Use the term 'count on'.								
N4.1C	Read, write and say aloud numbers written in figures from 1000 to 10 000.	Start with numbers from 1000 to 1999 in figures. Use a place-value table. For example: <table border="1"><tr><td>1000s</td><td>100s</td><td>10s</td><td>1s</td></tr><tr><td>6</td><td>2</td><td>8</td><td>1</td></tr></table> Say aloud, 'six thousand two hundred and eighty-one'. Move on to reading, writing and saying aloud numbers that are not in a place-value table.	1000s	100s	10s	1s	6	2	8	1
1000s	100s	10s	1s							
6	2	8	1							
N4.1D	Recognise the place value of each digit in a 4-digit number (1000s, 100s, 10s, 1s) and write numbers in expanded form.	Use a place-value table to partition and say aloud the number of 1000s, 100s, 10s and 1s. For example: '2493 is two 1000s, four 100s, nine 10s and three 1s'. Then write in expanded form and identify the value of specific digits. For example: $2493 = 2000 + 400 + 90 + 3$ so the value of 9 is 90. Move on to applying partitioning in different ways. For example: $1847 = 1000 + 800 + 47$ or $1847 = 1000 + 847$ or $1847 = 1800 + 47$ and so on.								
N4.1E	Write or say aloud the number 1000 more than any number between 0 and 9000 or 1000 less than any number between 1000 and 10 000.	Use a place-value table.								
N4.1F	Compare and order numbers to 10 000 and write statements using inequality signs < or >.	Use a place-value table and the terms 'more than' and 'greater than' for > and 'less than' for <. Use number stories. For example: In a city, 2255 people work in hotels and 8104 people work in shops. Do more people work in hotels or in shops?								
N4.1G	Round any number to the nearest 10, 100 or 1000.	Use a number line. Use the terms 'close', 'near', 'closest' and 'nearest'. Relate this to rounding measures and rounding money (to the nearest coin value).								
N4.1H	Count backwards through 0 to include negative numbers.	Use a number line. Relate this to negative temperatures on a thermometer.								

ADDITION AND SUBTRACTION

Reference	Objective	Notes and guidance
N4.2A	Know number bonds to 100 and recognise and work out bonds to the next 100.	<p>Know number bonds. For example: $43 + 57 = 100$</p> <p>Use number facts to work out number bonds to the next 100. For example:</p> <ul style="list-style-type: none"> • $143 + 57 = 200$ • $243 + 57 = 300$
N4.2B	Add and subtract integers with up to and including four digits using appropriate mental methods.	<p>For example:</p> <ul style="list-style-type: none"> • Add 100s and 10s: $4300 + 500 = 4800$; $1247 + 20 = 1267$ • Subtract 100s and 10s: $5670 - 200 = 5470$; $7361 - 50 = 7311$ • Add 11 by adding 10 and adding 1. • Add 101 by adding 100 and adding 1. • Add 9 by adding 10 and subtracting 1. • Add 99 by adding 100 and subtracting 1. • Subtract 11 by subtracting 10 and subtracting 1. • Subtract 101 by subtracting 100 and subtracting 1. • Subtract 9 by subtracting 10 and adding 1. • Subtract 99 by subtracting 100 and adding 1. <p>Use number stories. For example: 7093 children live in a town. 1000 more children live in the next town. How many children live in the next town? A stall sells 3500 t-shirts in a year. 399 t-shirts are red. How many t-shirts are not red?</p>
N4.2C	Add and subtract integers with up to and including four digits, using mental or formal written methods of column addition and subtraction, where appropriate.	<p>Practise formal written methods of column addition and subtraction with numbers up to and including four digits. Support with Base-10 cubes and place-value cards.</p> <p>Encourage making decisions about when a mental method may be more appropriate or efficient than a formal written method. For example: $2003 - 4$ or $456 - 199$ are less prone to error using a mental method.</p>
N4.2D	Add several 2-digit numbers.	<p>Use written or mental methods as appropriate.</p> <p>Use number stories.</p>
N4.2E	Estimate the answer to a calculation.	<p>Use rounding to the nearest 10, 100 or 1000 and then mental calculation. For example: $3546 + 849 \approx 3500 + 800 = 4300$.</p>
N4.2F	Understand when to add and when to subtract and the relationship between addition and subtraction.	<p>Use addition to check subtraction calculations and vice versa.</p> <p>Tell number stories and encourage students to decide which operation to use.</p> <p>Move on to missing number calculations. For example:</p> <ul style="list-style-type: none"> • $7823 = 700 + \square + 20 + 3$ • $2547 + \square = 2847$ • $320 = 3821 - \square$

MULTIPLICATION AND DIVISION

Reference	Objective	Notes and guidance
N4.3A	Recall and use multiplication and division facts for the 2, 3, 4, 5 and 10 multiplication tables including multiples and factor pairs; recognise and work out multiplication and division for the 6 and 8 multiplication tables (up to $10 \times \dots$).	<p>Relate this to counting on and repeated addition. Use the terms 'lots of', 'groups of', 'times' and 'multiplied by'. Connect multiplication tables through doubling. For example:</p> <ul style="list-style-type: none"> • 3 and 6 multiplication tables • 2, 4 and 8 multiplication tables. <p>Use a variety of language to describe multiplication and division. For example:</p> <ul style="list-style-type: none"> • '4 times 6' and 'Share 24 equally between 6'. • '5 lots of 8' and 'Divide 40 by 8'. • '4 groups of 8' and 'How many groups of 8 make 32?' <p>Use the commutative nature of multiplication. For example:</p> <ul style="list-style-type: none"> • Use 3×8 to work out 8×3. • Use 5×6 to work out 6×5.
N4.3B	Multiply and divide numbers by 1 and multiply by 0.	
N4.3C	Read, write and interpret mathematical statements involving multiplication and division using the multiplication (\times), division (\div) and equals ($=$) signs, for the 6 and 8 multiplication tables.	Relate multiplication and division as inverse operations and support with arrays.
N4.3D	Use known multiplication facts to multiply by multiples of 10 and 100.	<p>Use known multiplication tables and the commutative law. For example:</p> <ul style="list-style-type: none"> • $2 \times 30 = 2 \times 3 \times 10 = 6 \times 10 = 60$ • $40 \times 200 = 4 \times 10 \times 2 \times 100 = 4 \times 2 \times 10 \times 100 = 8 \times 1000 = 8000$
N4.3E	Use place value, known facts and partitioning to multiply and divide mentally.	<p>Use known multiplication and division facts and the distributive law, where appropriate. For example:</p> <ul style="list-style-type: none"> • $600 \div 3 = 100 \times 6 \div 3 = 100 \times 2 = 200$ • $199 \times 4 = 200 \times 4 - 1 \times 4 = 800 - 4 = 796$ • $32 \times 4 = 30 \times 4 + 2 \times 4 = 120 + 8 = 128$
N4.3F	Multiply together three single digit numbers.	<p>Use the commutative and distributive law, where appropriate. For example:</p> <ul style="list-style-type: none"> • $2 \times 6 \times 5 = 2 \times 5 \times 6 = 10 \times 6 = 60$ • $8 \times 4 \times 3 = 32 \times 3 = 30 \times 3 + 2 \times 3 = 90 + 6 = 96$
N4.3G	Use place value to double and halve 2- and 3-digit numbers mentally.	<p>Use the distributive law. For example:</p> <ul style="list-style-type: none"> • $53 \times 2 = 50 \times 2 + 3 \times 2 = 100 + 6 = 106$ • $246 \div 2 = 200 \div 2 + 40 \div 2 + 6 \div 2 = 100 + 20 + 3 = 123$ <p>Use number stories.</p>

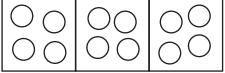
N4.3H	Multiply 2-digit and 3-digit numbers by a 1-digit number using a formal written method.	<p>Use a formal written method of short multiplication. Start with no regrouping (carrying). For example:</p> <p>431×3</p> <table><tr><td>×</td><td>400</td><td>30</td><td>1</td></tr><tr><td>3</td><td>1200</td><td>90</td><td>3</td></tr></table> <p>431×3 <u>1293</u></p> <p>$1200 + 90 + 3 = 1293$</p> <p>Introduce regrouping (carrying). For example:</p> <p>651×6</p> <table><tr><td>×</td><td>600</td><td>50</td><td>1</td></tr><tr><td>6</td><td>3600</td><td>300</td><td>6</td></tr></table> <p>651×6 <u>3906</u> 3</p> <p>$3600 + 300 + 6 = 3906$</p> <p>Use number stories. For example: A shopping centre has 642 parking spaces. Another shopping centre has three times as many parking spaces. How many parking spaces are there at the second shopping centre?</p>	×	400	30	1	3	1200	90	3	×	600	50	1	6	3600	300	6																				
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6	3600	300	6																																			
N4.3I	Divide 3-digit numbers by 1-digit numbers with integer answers.	<p>Use the formal written method of short division with exact answers. Support with place value table and counters. Use different coloured counters to represent 100s, 10s and 1s. Model the sharing of 100s, then 10s, then 1s and the exchanging where necessary alongside the formal written method For example:</p> <p>$\begin{array}{r} 211 \\ 4 \overline{)844} \end{array}$</p> <table><tr><td>100s</td><td>10s</td><td>1s</td></tr><tr><td>○○○</td><td>○○</td><td>○○</td></tr><tr><td>○○○</td><td>○○</td><td>○○</td></tr><tr><td>○○</td><td></td><td></td></tr></table> <p>$\begin{array}{r} 157 \\ 3 \overline{)471} \end{array}$</p> <table><tr><td>100s</td><td>10s</td><td>1s</td></tr><tr><td>○○</td><td>○○○</td><td>○</td></tr><tr><td>○○</td><td>○○○</td><td></td></tr><tr><td></td><td>○</td><td></td></tr></table> <p>$\begin{array}{r} 64 \\ 4 \overline{)256} \end{array}$</p> <table><tr><td>100s</td><td>10s</td><td>1s</td></tr><tr><td>○○</td><td>○○○</td><td>○○</td></tr><tr><td></td><td>○○</td><td>○○</td></tr><tr><td></td><td></td><td>○○</td></tr></table> <p>Use number stories.</p>	100s	10s	1s	○○○	○○	○○	○○○	○○	○○	○○			100s	10s	1s	○○	○○○	○	○○	○○○			○		100s	10s	1s	○○	○○○	○○		○○	○○			○○
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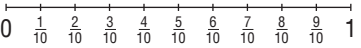




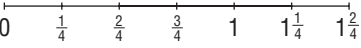
N4.3J	Estimate the answer to a calculation.	Use rounding and then mental calculation. For example: $384 \times 21 \approx 400 \times 20 = 8000$.
N4.3K	Understand when to multiply and when to divide and the relationship between multiplication and division.	Use multiplication to check division calculations. Tell number stories and encourage students to decide which operation to use.
N4.3L	Solve missing number problems for multiplication and division.	Solve missing number calculations involving multiplication and division. For example: <ul style="list-style-type: none"> $\square \div 4 = 6$ $\square \times 8 = 32$ $600 = 300 \times \square$ $800 \div \square = 40$ $62 \times \square = 60 \times 4 + 2 \times 4$ $\square \times 2 \times 8 = 80$

ALL FOUR OPERATIONS

Reference	Objective	Notes and guidance
N4.4A	Solve simple problems in contexts, deciding which of the four operations to use.	Use number stories. Encourage students to tell their own number stories, using pictures to assist them with language.

FRACTIONS AND DECIMALS

Reference	Objective	Notes and guidance
N4.5A	Know that $\frac{1}{10}$ is written 0.1 as a decimal and relate tenths to place value and decimal measures.	Write 0.1, 0.2 ... on a number line (below $\frac{1}{10}, \frac{2}{10}$...). Say aloud 'nought point one, nought point two,' and so on. Move on to mixed numbers and write them on a number line. For example: Write 1.1, 1.2 ... (below $1\frac{1}{10}, 1\frac{2}{10}$...). Say aloud 'one point one, one point two' and so on. Demonstrate the connection between tenths and the place-value table and write 0.1, 0.2 ... 1.1, 1.2 and so on in a place-value table. Recognise the connection with decimal measures, use a ruler to recognise decimal measures of centimetres and relate this to centimetres and millimetres.
N4.5B	Work out one-third, one-quarter, one-fifth or one-tenth of a number or quantity and relate thirds to dividing by 3, quarters to dividing by 4, fifths to dividing by 5 and tenths to dividing by 10.	Begin by using fraction mats, concrete objects, pictorial representations and arrays. Show that finding a third and dividing by 3 are the same, that finding a quarter and dividing by 4 are the same and so on. <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> $\text{one-third of } 12 = \frac{1}{3} \text{ of } 12$ $= 4$ $12 \div 3 = 4$ </div> </div> Use the terms 'sharing equally' and 'three each', 'quarter each' and so on. Use number stories. Move on to working out one-third, one-quarter, one-fifth or one-tenth of a number. For example: <ul style="list-style-type: none"> $\frac{1}{3}$ of 6 = 2 $\frac{1}{5}$ of 20 = 4. Always represent fractions with a horizontal line between numerator and denominator.

N4.5C	Work out non-unit fractions (for fractions with denominators up to and including 10) of a quantity, using objects and pictorial representations.	Use fraction mats, concrete objects, pictorial representations and arrays to work out non-unit fractions of quantities. For example:  two-fifths of 10 = $\frac{2}{5}$ of 10 $= 4$
N4.5D	Add and subtract fractions with the same denominators (for fractions with denominators up to and including 10) with answers less than 1.	Use fractions of shapes cut out of paper, pictorial representations of a variety of shapes and number lines to add and subtract fractions with answers less than 1. For example:  three-fifths + one-fifth = four-fifths $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$   three-quarters – two-quarters = one-quarter $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$ three-quarters two-quarters
N4.5E	Add fractions with the same denominators (for fractions with denominators up to and including 10) that give an answer exactly 1; subtract fractions from 1.	Use fractions of shapes cut out of paper, pictorial representations of a variety of shapes and number lines to add fractions with answers of exactly 1 and subtract fractions from 1. For example:  $1 - \text{three-tenths} = \text{seven-tenths}$ $1 - \frac{3}{10} = \frac{7}{10}$
N4.5F	Add fractions with the same denominator (for fractions with denominators up to and including 10) to give a total greater than 1.	Use pictorial representations of a variety of shapes. For example:  +  =   four-fifths + two-fifths = six-fifths = one-whole and one-fifth $\frac{4}{5} + \frac{2}{5} = \frac{6}{5} = 1\frac{1}{5}$ Move on to number lines.  three-quarters + two-quarters = five-quarters = one-whole and one-quarter $\frac{3}{4} + \frac{2}{4} = \frac{5}{4} = 1\frac{1}{4}$
N4.5G	Relate adding tenths to adding decimals.	Write 0.1, 0.2 and so on onto a number line (below $\frac{1}{10}$, $\frac{2}{10}$ and so on). Relate adding $\frac{1}{10}$ s to adding 0.1s. Demonstrate the connection to adding decimal measures in centimetres.
N4.5H	Solve problems involving fractions (for fractions with denominators up to and including 10), including missing number problems (for addition and subtraction) and finding fractions in everyday contexts.	Show shapes with fractions shaded. Ask what fraction is shaded and what fraction is not shaded. Ask for missing fractions and mixed numbers on a number line. Tell number stories. For example: • There are 15 pencils. $\frac{1}{5}$ are red. How many pencils are red? • I eat $\frac{3}{4}$ of a bar of chocolate. What fraction of the chocolate bar is left? Include missing fraction calculations. For example: • $\square + \frac{3}{10} = \frac{7}{10}$ • $1 - \square = \frac{2}{3}$

GEOMETRY AND MEASURE

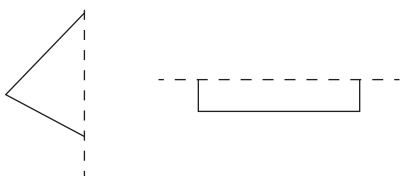
MEASURE

Reference	Objective	Notes and guidance
G4.1A	Relate number lines showing 0.1, 0.2 ... to millimetre measures and centimetres on a ruler.	Connect decimals to measuring lines in centimetres.
G4.1B	Measure using knowledge of the number system including tenths written as decimals and standard measure abbreviations.	Use practical work to give experience of units of length, mass and capacity. Make decisions about appropriate measuring equipment, for example to measure a length of ribbon, amount of liquid in a jar or sugar in a bowl. Measure and then record the measurement.
G4.1C	Work out equivalents of measure for mm, cm and m (integer answers only).	For example: <ul style="list-style-type: none"> • 5 m = 500 cm • 300 cm = 3 m • 50 mm = 5 cm • 6 cm = 60 mm
G4.1D	Solve problems involving measure, including conversions, comparing, rounding and the four operations (integer measures only).	Use this as an opportunity to reinforce Year 4 Number. For example: <ul style="list-style-type: none"> • Compare length, mass and volume/capacity in different units (integer answers only). • Add and subtract up to 4-digit measures (integers only). • Given several lots of a measure, use multiplication to find total length, mass or volume/capacity. • Given total length, mass or volume/capacity, use division to find an individual length, mass or volume/capacity. • Round measures to the nearest 10, 100 or 1000 units.
G4.1E	Read and write amounts of local money using 2 decimal places.	
G4.1F	Solve problems involving money calculations, using the four operations (integer money amounts only).	Use this as an opportunity to reinforce Year 4 Number. For example: <ul style="list-style-type: none"> • Work out four lots of £7. • Double and halve 2- and 3-digit integer amounts of money. • Round money to the nearest 100 or 1000 money denomination.
G4.1G	Read and write months of the year.	
G4.1H	Know the number of days in each month, year and leap year.	
G4.1I	Read and write the time in multiples of 5 to and past the hour on an analogue clock.	Use language appropriate to the local way of telling the time. For example: In some countries, 07:35 is also said to be 'twenty-five to eight', but in other countries it may be said as 'five and twenty to eight'.
G4.1J	Know that half an hour is 30 minutes, quarter of an hour is 15 minutes and three-quarters of an hour is 45 minutes.	For example: <ul style="list-style-type: none"> • Relate 12:30 to half past twelve. • Relate 12:15 to quarter past twelve. • Relate 12:45 to quarter to one.

G4.1K	Read and write the time from 12-hour and 24-hour digital clocks.	Use the terms 'am' and 'pm'.
G4.1L	Solve simple problems involving time.	For example: <ul style="list-style-type: none"> • Work out the number of days in June and July. • Work out when it will be 100 days from now. Calculate the time taken by particular events or tasks and compare durations of events (in one unit only and without crossing the hours boundary). For example: <ul style="list-style-type: none"> • It is 13:20. What time will it be in 25 minutes? What time was it 15 minutes ago? • A bus is due at 10:15. It is 5 minutes late. What time does it arrive?
G4.1M	Compare, order, describe and record temperature (positive and negative integers of degrees Celsius).	Use the terms 'hot', 'warm', 'cold', 'hotter', 'colder', 'how hot?' and so on. Use this as an opportunity to reinforce negative numbers learnt in Year 4 Number.
G4.1N	Find perimeters of rectilinear shapes drawn on cm squared grids by counting squares.	Recognise that 'perimeter' is a measure of the distance around the outside of shape.
G4.1O	Find areas of rectilinear shapes drawn on cm squared grids by counting squares.	Recognise that 'area' is a measure of the space inside a 2D shape and is measured in square units, i.e. centimetres squared (cm ²).

SHAPE

Reference	Objective	Notes and guidance
G4.2A	Identify acute, obtuse and reflex angles; order angles by size.	Use stand-alone angles as well as angles in shapes and everyday objects. For example: the angle a door makes when opened at different positions
G4.2B	Identify pairs of perpendicular, parallel and equal length lines and know the geometric symbol for parallel and equal length lines.	Recognise perpendicular, parallel and equal-length lines in shapes and everyday objects. For example: <ul style="list-style-type: none"> • equal-length sides on a square or rectangle • perpendicular lines in buildings or pavements. Recognise when lines are not perpendicular, parallel or equal. For example: A tree trunk does not have parallel sides.
G4.2C	Recognise and name a parallelogram and a rhombus.	Recognise these shapes in different orientations and sizes.
G4.2D	Identify, describe and compare simple properties of triangles, rectangles, squares, parallelograms and rhombuses and sort the shapes accordingly.	Sort shapes on the basis of their side and angle properties, using the terms 'equal', 'perpendicular', 'parallel sides', 'right angles', 'acute angles' and 'obtuse angles'.
G4.2E	Identify and name equilateral and right-angled triangles.	Measure the sides of a triangle and decide whether or not it is equilateral. Recognise a right angle in a triangle and so name the shape a 'right-angled triangle'.
G4.2F	Recognise symmetry in 2D shapes and in pictures of real life objects with a vertical and/or horizontal line of symmetry; draw the lines of symmetry.	Recognise symmetry in pictures of everyday objects and shapes and draw the lines of symmetry. For example: <ul style="list-style-type: none"> • in flags • in letters of the alphabet • in a rectangle.

G4.2G	Complete a simple symmetrical figure, given its line of symmetry.	For example: 
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POSITION

Reference	Objective	Notes and guidance
G4.3A	Read, write and use coordinates in the first quadrant.	Describe the position of a point using coordinates; plot a point given its coordinates.

STATISTICS

STATISTICS

Reference	Objective	Notes and guidance
S4.1A	Interpret and represent data in bar charts and line graphs to show changes over time.	Understand and use scales, for example with 2, 5, 10, 20 or 50 units per square or time scales in months, days, hours, minutes and seconds.
S4.1B	Draw and use simple tables to represent a small amount of discrete data, where the table only has two or three columns.	Design, draw and use simple tables for collecting and representing data.
S4.1C	Solve a variety of problems using data in tables and presented in scaled bar charts or pictograms.	<p>For example:</p> <p>Use a pictogram showing number of hours spent in a week watching television, doing homework, playing with friends and so on: ask what is the total number of hours spent doing activities that are not homework.</p> <p>Use two bar charts showing numbers of girls and boys in two different classes:</p> <ul style="list-style-type: none"> • Ask which class has the most students. • Ask whether there are more girls in class A or class B. • Ask how many more boys there are in class A than in class B. <p>Use the terms 'How many?', 'How many more?', 'How many fewer', 'most/least popular' and 'How many altogether/in total?'.</p>

YEAR 5

NUMBERS AND THE NUMBER SYSTEM

NUMBER AND PLACE VALUE

Reference	Objective	Notes and guidance														
N5.1A	Count from 0 in multiples of 7, 9 and 11.	Use a number line to count on in 7s, 9s and 11s from 0. Encourage students to look for patterns in the digits when counting in 9s and 11s.														
N5.1B	Read, write and say aloud numbers written in figures from 10 000 to 100 000.	Use a place-value table. Move on to reading, writing and saying aloud numbers not in a place-value table.														
N5.1C	Recognise the place value of each digit in a 5-digit number (10 000s, 1000s, 100s, 10s, 1s) and write numbers in expanded form.	Use a place-value table to partition and say aloud 5-digit numbers. Write in expanded form and identify the value of specific digits. For example: 21 596 = 20 000 + 1000 + 500 + 90 + 6. The value of 5 is 500. Move on to apply partitioning in different ways. For example: 38 417 = 30 000 + 8417 or 38 000 + 417 and so on.														
N5.1D	Relate $\frac{1}{100}$ s and 0.01 to the place value table.	Show numbers up to 100 000 in a place-value table and include tenths and hundredths. For example: <table><tr><td>10 000s</td><td>1000s</td><td>100s</td><td>10s</td><td>1s</td><td>$\frac{1}{10}$s/0.1s</td><td>$\frac{1}{100}$s/0.01s</td></tr><tr><td></td><td></td><td>3</td><td>9</td><td>6</td><td>2</td><td>7</td></tr></table>	10 000s	1000s	100s	10s	1s	$\frac{1}{10}$ s/0.1s	$\frac{1}{100}$ s/0.01s			3	9	6	2	7
10 000s	1000s	100s	10s	1s	$\frac{1}{10}$ s/0.1s	$\frac{1}{100}$ s/0.01s										
		3	9	6	2	7										
N5.1E	Write or say aloud 10, 100, 1000 or 10 000 more than any given number up to 100 000 (with answers no more than 100 000); write or say aloud 10, 100, 1000 or 10 000 less than any given number up to 100 000 (with answers no less than 0).	For example: <ul style="list-style-type: none">• Say aloud the number that is 10 000 more than 24 571.• Write the number that is 1000 less than 24 571. Use a place-value table.														
N5.1F	Compare and order numbers to 100 000 and write statements using inequality signs < or >.	Use a place-value table and the terms ‘more than’ and ‘greater than’ for > and ‘less than’ for <. Include word problems. For example: There are 23 847 people who live in town A. There are 25 471 people who live in town B. Do more people live in town A or town B?														
N5.1G	Round any number up to 100 000 to the nearest 10, 100, 1000 or 10 000.	Use a number line or a place-value table and the terms ‘close’, ‘near’, ‘closest’ and ‘nearest’. Relate this to rounding measures.														
N5.1H	Use negative numbers in context of temperature and calculate temperature rise and fall, including across 0.	Count in 1s along a vertical or horizontal thermometer. For example: <ul style="list-style-type: none">• The temperature is 3 degrees Celsius. It falls 5 degrees. What is the new temperature?• The temperature is –6 degrees Celsius. It rises 8 degrees. What is the new temperature?														
N5.1I	Order negative and positive numbers in context and write statements using inequality signs < or >.	Use a thermometer number line. Relate this to negative temperatures on a thermometer. For example: Which is coldest, –3 degrees Celsius or –7 degrees Celsius? Use the terms ‘more than’ and ‘greater than’ for > and ‘less than’ for <.														

ADDITION AND SUBTRACTION

Reference	Objective	Notes and guidance
N5.2A	Add and subtract positive integers with up to and including five digits, using mental or formal written methods of column addition and subtraction, where appropriate.	<p>Practise both mental methods and formal written methods of column addition and subtraction with numbers up to and including five digits.</p> <p>Encourage making decisions about when a mental method may be more appropriate than a formal written method. For example:</p> <ul style="list-style-type: none"> • $6010 - 2907$ is less prone to error counting up on a number line than a written column subtraction. • $30001 - 202$ is less prone to error using a mental method. <p>Solve number problems in context, involving addition and subtraction. For example:</p> <ul style="list-style-type: none"> • 70063 people live in a town. 68 of the people are aged 90 or over. How many people under the age of 90 live in the town? • A supermarket sells 13847 bars of chocolate in a year. 3800 bars of chocolate are dark chocolate. How many bars of chocolate are not dark chocolate?
N5.2B	Use column addition to add more than two numbers with up to and including four digits.	<p>Use written or mental methods as appropriate.</p> <p>Include word problems.</p>
N5.2C	Estimate the answer to an addition or subtraction calculation.	<p>Use rounding to the nearest 10, 100, 1000 or 10 000 and then mental calculation. For example: $35046 - 4161 \approx 35000 - 4000 = 31000$.</p>
N5.2D	Understand when to add and when to subtract and the relationship between addition and subtraction.	<p>Use addition to check subtraction calculations and vice versa.</p> <p>Include word problems involving numbers up to 100 000 and encourage students to decide which operation to use. For example:</p> <ul style="list-style-type: none"> • 15093 people attend a concert. 3000 fewer people attend a football match. How many people attend the football match? • A fast-food restaurant sells 35041 burgers in a year. 13941 of the burgers are vegetarian burgers. How many of the burgers are not vegetarian burgers? <p>Move on to missing number calculations. For example:</p> <ul style="list-style-type: none"> • $31824 = 30000 + \square + 800 + 20 + 4$ • $23547 + \square = 3947$ • $3420 = 13500 - \square$

MULTIPLICATION AND DIVISION

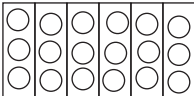
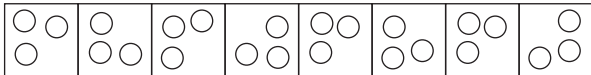
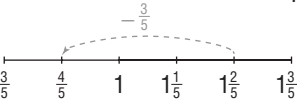
Reference	Objective	Notes and guidance																			
N5.3A	Recall and use multiplication and division facts for the 2, 3, 4, 5, 6, 8 and 10 multiplication tables; recognise and work out multiplication and division for the 7, 9 and 11 multiplication tables (up to $10 \times \dots$); be able to identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.	<p>Relate this to counting on and repeated addition.</p> <p>Use the terms ‘lots of’, ‘groups of’, ‘times’ and ‘multiplied by’.</p> <p>Recognise patterns in the 9 and 11 multiplication tables.</p> <p>Use a variety of terms to describe multiplication and division. For example:</p> <ul style="list-style-type: none">• ‘4 times 9’ and ‘Share 36 equally between 9’.• ‘5 lots of 7’ and ‘Divide 35 by 7’.• ‘6 groups of 11’ and ‘How many groups of 11 make 66?’ <p>Use the commutative nature of multiplication. For example:</p> <ul style="list-style-type: none">• Use 7×3 to work out 3×7.• Use 9×5 to work out 5×9.																			
N5.3B	Use known multiplication facts to multiply by multiples of powers of 10 up to 100 000.	<p>Use known multiplication tables and the commutative law. For example:</p> <ul style="list-style-type: none">• $2 \times 30\,000 = 2 \times 3 \times 10\,000 = 6 \times 10\,000 = 60\,000$• $50 \times 600 = 5 \times 10 \times 6 \times 100 = 5 \times 6 \times 10 \times 100 = 30 \times 1000 = 30\,000$																			
N5.3C	Use place value, known and derived facts and partitioning to multiply and divide mentally.	<p>Use known multiplication and division facts and the distributive law where appropriate. For example:</p> <ul style="list-style-type: none">• $60\,000 \div 3 = 60\text{ thousand} \div 3 = 20\text{ thousand} = 20\,000$• $9999 \times 4 = 10\,000 \times 4 - 1 \times 4 = 40\,000 - 4 = 39\,996$• $32 \times 70 = 30 \times 70 + 2 \times 70 = 2100 + 140 = 2540$• $320 \times 4 = 300 \times 4 + 20 \times 4 = 1200 + 80 = 1280$																			
N5.3D	Multiply numbers up to and including four digits by a 1- or 2-digit number using a formal written method.	<p>Use a formal written method of multiplication. For example:</p> <div><div>1528×6</div><div><table><tr><td>\times</td><td>1000</td><td>500</td><td>20</td><td>8</td></tr><tr><td>6</td><td>6000</td><td>3000</td><td>120</td><td>48</td></tr></table></div><div>$\begin{array}{r} 6000 \\ 3000 \\ + 120 \\ \underline{48} \\ 9168 \end{array}$</div><div>$\begin{array}{r} 1528 \\ \times \quad 6 \\ \hline 9168 \\ \text{3 14} \end{array}$</div></div> <div><div>$43 \times 61$</div><div><table><tr><td>\times</td><td>40</td><td>3</td></tr><tr><td>60</td><td>2400</td><td>180</td></tr><tr><td>1</td><td>40</td><td>3</td></tr></table></div><div>$\begin{array}{r} 2400 \\ 180 \\ + 40 \\ \underline{3} \\ 2623 \\ \text{1} \end{array}$</div><div>$\begin{array}{r} 43 \\ \times \quad 61 \\ \hline 2580 \\ \underline{2623} \\ \text{1} \end{array}$</div></div> <p>Include word problems.</p>	\times	1000	500	20	8	6	6000	3000	120	48	\times	40	3	60	2400	180	1	40	3
\times	1000	500	20	8																	
6	6000	3000	120	48																	
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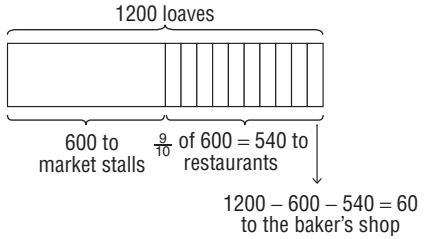
N5.3E	Divide numbers up to and including four digits by 1-digit numbers with integer answers.	Use a formal written method of short division with exact answers. For example: <div><div><div>2033</div><div>3</div><div>6099</div></div><div><div>581</div><div>4</div><div>2324</div></div></div> Include word problems.																												
N5.3F	Divide numbers up to and including four digits by 1-digit numbers with remainders written as integers and interpret remainders appropriately for the context.	Include word problems. For example: <ul style="list-style-type: none">• 25 sweets are shared between 6 children. How many sweets does each child get? How many sweets are left over?• Each egg box holds 6 eggs. There are 15 eggs. How many egg boxes are needed to hold all the eggs?																												
N5.3G	Multiply and divide whole numbers by 10, 100 and 1000 with integer and decimal answers (tenths only).	Use a place value table. <table><tr><td></td><td>10 000s</td><td>1000s</td><td>100s</td><td>10s</td><td>1s</td><td>• 0.1s</td></tr><tr><td></td><td></td><td>3</td><td>7</td><td>2</td><td>1</td><td></td></tr><tr><td>× 10</td><td>3</td><td>7</td><td>2</td><td>1</td><td>0</td><td></td></tr><tr><td>÷ 10</td><td></td><td></td><td>3</td><td>7</td><td>2</td><td>• 1</td></tr></table> Include word problems.		10 000s	1000s	100s	10s	1s	• 0.1s			3	7	2	1		× 10	3	7	2	1	0		÷ 10			3	7	2	• 1
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× 10	3	7	2	1	0																									
÷ 10			3	7	2	• 1																								
N5.3H	Estimate the answer to a multiplication or division calculation.	Use rounding and then mental calculation. For example: <ul style="list-style-type: none">• $2954 \times 32 \approx 3000 \times 30 = 90\,000$• $59\,004 \div 28 \approx 60\,000 \div 30 = 2000$																												
N5.3I	Understand when to multiply and when to divide and the relationship between multiplication and division.	Use multiplication to check division calculations. Include word problems and encourage students to decide which operation to use.																												
N5.3J	Solve missing number problems for multiplication and division.	Solve missing number calculations involving multiplication and division. For example: <ul style="list-style-type: none">• $\square \div 7 = 6$• $\square \times 9 = 54$• $12\,000 = 300 \times \square$• $80\,000 \div \square = 2000$• $6213 \times \square = 6000 \times \square + 200 \times 4 + \square \times 4 + 3 \times \square$																												
N5.3K	Identify prime numbers up to 100.	Encourage students to work out if any number up to and including 100 is a prime number; encourage students to recognise prime numbers up to 19.																												

ALL FOUR OPERATIONS

Reference	Objective	Notes and guidance
N5.4A	Solve simple problems in contexts, deciding which of the four operations to use.	Include word problems. Encourage students to create their own word problems, using pictures to assist them with language.
N5.4B	Introduce BIDMAS (order of operations) for +, −, ×, ÷ only.	Encourage students to solve problems like $4 + 2 \times 6$, knowing that 2×6 is solved first and then 4 is added to it.

FRACTIONS AND DECIMALS

Reference	Objective	Notes and guidance
N5.5A	Work out any unit fraction (with denominators up to and including 10) of a number or quantity and relate to division.	<p>Begin by using fraction mats, concrete objects, pictorial representations and arrays. Show that finding one-sixth and dividing by 6 are the same, that finding one-seventh and dividing by 7 are the same and so on.</p>  <p>one-sixth of $18 = \frac{1}{6}$ of 18 $= 3$ $18 \div 6 = 3$</p> <p>Use the terms 'sharing equally' and 'six each', 'seven each' and so on. Use number stories. Move on to working out a unit fraction of a number. For example:</p> <ul style="list-style-type: none"> • $\frac{1}{8}$ of 24 = 3 • $\frac{1}{9}$ of 45 = 5 <p>Always represent fractions with a horizontal line between numerator and denominator.</p>
N5.5B	Work out non-unit fractions (with denominators up to and including 10) of a number or quantity.	<p>Begin by using fraction mats, concrete objects, pictorial representations and arrays to work out unit fractions and then non-unit fractions. Move on to working with quantities and numbers.</p>  <p>five-eighths of $24 = \frac{5}{8}$ of 24 $= 15$</p>
N5.5C	Compare fractions of quantities (where fractions have denominators up to and including 10) and write statements using inequality signs < or >.	Use fraction mats, concrete objects, pictorial representations and arrays to understand that one-third may be larger than one-fifth, but one-third of one quantity can be smaller than one-fifth of another quantity. For example: Use fraction mats to show that one-third is larger than one-fifth, but one-third of 9 counters is smaller than one-fifth of 20 counters.
N5.5D	Recognise and show families of equivalent fractions, using visual support.	Use a fraction wall and fraction bars to recognise and show equivalent fractions.
N5.5E	Identify, name and convert $\frac{1}{2}$ and $\frac{1}{5}$ s to fractions with denominators of 10 and write these as decimals.	<p>Use fraction bars. For example:</p> <ul style="list-style-type: none"> • $\frac{1}{2} = \frac{5}{10} = 0.5$ • $\frac{3}{5} = \frac{6}{10} = 0.6$
N5.5F	Compare and order two fractions where one denominator is a multiple of the other and write statements using inequality signs < or >.	<p>Use fraction bars. For example: compare $\frac{2}{5}$ and $\frac{6}{10}$.</p>
N5.5G	Add a mixed number and a fraction where both have the same denominator; subtract fractions from mixed numbers, where both have the same denominator.	<p>Use a number line. For example:</p>  <p>$1\frac{2}{5} + \frac{3}{5} = 2$</p>

N5.5H	Add and subtract two fractions where the denominator of one fraction is a multiple of the denominator of the other fraction.	For example: three-fifths + one-fifth = four-fifths $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ four-sixths + one-sixth = five-sixths $\frac{2}{3} + \frac{1}{6} = \frac{4}{6} + \frac{1}{6} = \frac{5}{6}$
N5.5I	Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10.	Use Base-10 cubes and a 100-square. Relate hundredths and tenths to decimal measure (including a metre ruler and relevant coins).
N5.5J	Recognise and use hundredths and relate them to tenths.	Use Base-10 cubes and a 100-square to understand the relationship between tenths and hundredths. For example: $\frac{7}{10} = \frac{70}{100}$
N5.5K	Know that $\frac{1}{100}$ is written 0.01 as a decimal and relate hundredths to place value and decimal measures.	Demonstrate the connection between hundredths and the place value table. Use Base-10 cubes and a 100-square to show this relationship. For example: $\frac{7}{10} + \frac{1}{100} = \frac{70}{100} + \frac{1}{100} = \frac{71}{100} = 0.71$. Demonstrate the connection with decimal measures (including a metre ruler and relevant coins).
N5.5L	Read, write, order and compare numbers with the same number of decimal places up to and including 2 decimal places.	Say aloud decimals to two decimal places, knowing that, for example: 0.45 is 'nought point four five' not 'nought point forty-five'. Use a place value table. Relate this to decimal measures.
N5.5M	Add and subtract decimal numbers with the same number of decimal places (up to and including 2 decimal places).	Use a number line. Introduce column addition of decimals, including in the context of money Use a place-value table to emphasise the importance of putting digits in the correct place-value column.
N5.5N	Solve 1- and 2-step problems in contexts, choosing the appropriate operation, working with numbers and fractions (with denominators up to and including 10).	Encourage decisions about which operations and methods to use. Include word problems. For example: 57 264 cars travel on a motorway each week day. One-sixth of the number of cars travel on the motorway at weekends. How many cars travel on the motorway at weekends? Use fraction bars to represent problems. For example: A bakery makes 1200 loaves of bread. Half of the loaves are sold to market stalls. Of the loaves that are left, $\frac{9}{10}$ are sold to restaurants. How many loaves of bread are left to sell in the baker's shop? 
N5.5O	Solve problems involving fractions, including non-unit fractions (denominators up to and including 10) and decimals to 1 decimal place.	Include word problems. Include missing-fraction and decimal calculations. For example: $\frac{3}{5} = \frac{\square}{10}$ $9.1 + \square = 9.7$

GEOMETRY AND MEASURE

MEASURE

Reference	Objective	Notes and guidance
G5.1A	Solve problems involving money calculations, using addition and subtraction (integer and decimal answers).	Use this as an opportunity to reinforce Year 5 Number. For example: adding and subtracting decimal numbers with two decimal places.
G5.1B	Convert between different metric units of measure (integer and tenths answers only).	Convert between mm and cm, cm and m, m and km, g and kg or ml and l. For example: <ul style="list-style-type: none"> Convert 23 cm to mm. How many g are there in 2.3 kg?
G5.1C	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) (using decimal measures with the same number of decimal places, up to and including 2 decimal places).	Use this as an opportunity to reinforce Year 5 Number. For example: <ul style="list-style-type: none"> $3.7\text{ g} + 0.2\text{ g}$ $76.45\text{ m} - 23.11\text{ m}$
G5.1D	Solve problems involving measure, including conversions, comparing, rounding and addition and subtraction (including decimal measures with the same number of decimal places, up to and including 2 decimal places).	For example: <ul style="list-style-type: none"> Which is longer: $0.5\text{ m} + 1.7\text{ m}$ or 400 cm? An aeroplane flies 3772 km from London to Egypt. The aeroplane then flies 5659 km from Egypt to Sri Lanka. How far does the aeroplane fly in total? Give your answer to the nearest 10 km.
G5.1E	Read and write the time to the nearest minute on an analogue clock.	Use language appropriate to the local way of telling the time.
G5.1F	Convert between 12-hour time and 24-hour time.	
G5.1G	Solve problems involving time, including converting between 12-hour and 24-hour time.	Include crossing the hour boundary. For example: <ul style="list-style-type: none"> It is 09:55. What time will it be in 15 minutes? You have a 40-minute journey to school. You need to arrive at 07:30. What time should you leave home? You go to the shop at 13:50. Draw this time on an analogue clock.
G5.1H	Find perimeters of rectilinear shapes by measuring.	Practise with different measures. For example: <ul style="list-style-type: none"> Measure the perimeter of your classroom (in metres). Measure the perimeter of your pencil case (in centimetres).
G5.1I	Estimate the area of irregular shapes drawn on cm squared paper.	For example: <ul style="list-style-type: none"> the area of your hand the area of a leaf.
G5.1J	Find volume of cuboids by counting 1 cm cubes.	Recognise that volume is a measure of space inside a 3D shape and is measured in cube units, such as centimetres cubed (cm^3).

SHAPE

Reference	Objective	Notes and guidance
G5.2A	Know angles are measured in degrees; know that a full turn is 360° , a half turn is 180° and a right angle is 90° .	Recognise that degrees measure a turn or angle. Use a circle to identify the 360° in a full turn, the 180° in a half turn and the 90° in a quarter turn or right angle. Relate this to finding one-half and one-quarter of 360° .
G5.2B	Recognise and name kite, trapezium, isosceles and scalene triangles.	Recognise these shapes in different orientations and sizes.
G5.2C	Know and recognise a polygon as a closed 2D shape with straight sides.	Use the term 'polygon'. Identify shapes that are polygons and shapes that are not polygons.
G5.2D	Identify 3D solids from 2D representations.	For example: recognise cubes, cuboids, pyramids, cylinders and spheres drawn in 2D.
G5.2E	Identify, describe and compare simple properties of common 3D solids; sort the shapes accordingly.	Describe 3D solids using the terms 'vertex', 'vertices', 'faces' and 'edges', 'equal', 'perpendicular', 'parallel sides', 'right angles' and so on.
G5.2F	Recognise symmetry in 2D shapes with a vertical, horizontal and/or diagonal line of symmetry; draw the lines of symmetry.	For example: Draw lines of symmetry in triangles and quadrilaterals in different orientations, including squares.
G5.2G	Identify, describe and compare simple properties of triangles and quadrilaterals; sort the shapes accordingly.	Sort shapes by their side and angle properties and their symmetries.

POSITION

Reference	Objective	Notes and guidance
G5.3A	Given the coordinates of three vertices of a rectangle or square, find and plot the fourth vertex and complete the shape.	Give students drawn axes. Use the terms 'axes', 'axis', 'horizontal', 'vertical', 'x-axis' and 'y-axis'. Relate this to number lines. Include the use of ICT tools.

STATISTICS

STATISTICS

Reference	Objective	Notes and guidance
S5.1A	Read and interpret information in a range of different tables.	Read and use information from a range of tables, including distance tables and timetables.
S5.1B	Draw and use tables of any size to appropriately represent discrete data.	Design, draw and use tables for collecting and representing data.
S5.1C	Solve problems using data presented in line graphs.	Use the terms 'axis', 'axes', 'horizontal' and 'vertical'. Find the sum of quantities and the difference between quantities, and compare quantities from a line graph. Use the terms 'How many altogether/in total?', 'How many more ____ than ____?', 'find the difference between' and so on.

YEAR 6

NUMBERS AND THE NUMBER SYSTEM

NUMBER AND PLACE VALUE

Reference	Objective	Notes and guidance
N6.1A	Count from 0 in multiples of 12.	Look for patterns in the digits when counting in 12s. Relate counting in 6s to counting in 12s.
N6.1B	Read, write and say aloud numbers written in figures up to and including 10 000 000.	Use a place-value table. Move on to reading, writing and saying aloud numbers not in a place value table.
N6.1C	Recognise the place value of each digit in a 6-digit number and write numbers in expanded form.	Use a place-value table to partition and say aloud 6-digit numbers. Write in expanded form and identify the value of specific digits. For example: $252\,493 = 200\,000 + 50\,000 + 2000 + 400 + 90 + 3$. The value of 5 is 50 000. Move on to applying partitioning in different ways. For example: $385\,214 = 300\,000 + 85\,214$ or $385\,000 + 214$ and so on.
N6.1D	Know that 1 million is 1 and six 0s, two million is 2 and six 0s, and so on up to 10 million.	Use a place-value table to show 1 000 000s.
N6.1E	Recognise the place value of each digit in a number with 1 or 2 decimal places and write numbers in expanded form.	Use a place-value table to partition and say aloud decimals with 1 or 2 decimal places. Write in expanded form and identify the value of specific digits. For example: $32.45 = 30 + 2 + 0.4 + 0.05$. The value of 5 is $\frac{5}{100}$.
N6.1F	Compare and order numbers up to and including 10 000 000 and write statements using inequality signs $<$ or $>$.	Use a place-value table and the terms 'most', 'least', 'more than' and 'greater than' for $>$ and 'less than' for $<$. Include word problems. For example: 184 471 people fly to airport A in one year. 104 381 people fly to airport B in the same year. Which airport do most people fly to?
N6.1G	Round any number up to and including 1 000 000 to the nearest power of 10.	Use a place-value table and the terms 'close', 'near', 'closest' and 'nearest'. Be able to round to the nearest 10, 100, 1000, 10 000, 100 000, 1 000 000.
N6.1H	Round any decimal, up to and including 2 decimal places, to the nearest whole number.	Use a number line and a place-value table. Relate this to measures.
N6.1I	Order positive and negative numbers and write statements using inequality signs $<$ or $>$.	Use a number line.

ADDITION AND SUBTRACTION

Reference	Objective	Notes and guidance
N6.2A	Add and subtract positive integers of any size up to and including 1 000 000 using mental or formal written methods of column addition and subtraction, where appropriate.	Practise both mental methods and formal written column addition and subtraction with numbers of any size up to and including 1 000 000. Encourage making decisions about when a mental method may be more appropriate than a written method. Solve number problems in context, involving addition and subtraction.
N6.2B	Add and subtract 1 and 2 place decimals, including more than two amounts of money.	Start with money and other measures, and then move on to decimals. Use mental methods, such as counting up on a number line to the next whole number. Use column addition and subtraction. Solve number problems in context involving money, measure and other 1 and 2 place decimal numbers.
N6.2C	Add more than two amounts of money.	
N6.2D	Estimate the answer to a money calculation.	Round to the nearest pound or nearest 10 pence or equivalent in local currency.
N6.2E	Understand when to add and when to subtract and the relationship between addition and subtraction.	Use addition to check subtraction calculations and vice versa. Include word problems involving numbers up to 1 000 000 and encourage students to decide which operation to use. Solve missing-number calculations involving numbers of any size up to and including 1 000 000.

MULTIPLICATION AND DIVISION

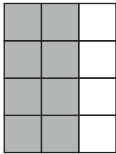
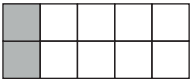
Reference	Objective	Notes and guidance
N6.3A	Recall multiplication and division facts for multiplication tables up to and including 12×12 ; identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers within these multiplication tables.	Relate this to counting on and repeated addition. Use the terms 'lots of', 'groups of', 'times' and 'multiplied by'. Recognise patterns in the 12 multiplication table. Use a variety of terms to describe multiplication and division. For example: <ul style="list-style-type: none"> • '3 times 12' and 'Share 36 equally between 12'. • '7 lots of 12' and 'Divide 84 by 12'. • '10 groups of 12' and 'How many groups of 12 make 120?' Use the commutative nature of multiplication.
N6.3B	Recognise square and cube numbers and relate these to a pattern that forms a square or cube.	Use counters to form squares and work out square numbers. For example: <div style="display: flex; align-items: center; justify-content: center; gap: 20px;"> <div style="text-align: center;"> $\begin{array}{ccc} \bigcirc & \bigcirc & \bigcirc \\ \bigcirc & \bigcirc & \bigcirc \\ \bigcirc & \bigcirc & \bigcirc \end{array}$ 4 </div> <div style="text-align: center;"> $\begin{array}{ccc} & \bigcirc & \bigcirc & \bigcirc \\ \bigcirc & \bigcirc & \bigcirc & \bigcirc \\ \bigcirc & \bigcirc & \bigcirc & \bigcirc \end{array}$ 9 </div> </div>
N6.3C	Multiply integers up to and including four digits by 1- or 2-digit numbers using mental or formal written methods, where appropriate.	Practise formal written methods of multiplication. Encourage making decisions about when a mental method may be more appropriate than a written method. For example: <ul style="list-style-type: none"> • $20\,000 \times 50 = 1\,000\,000$ is more efficient using a mental method. • $1999 \times 3 = 2000 \times 3 - 1 \times 3 = 6000 - 3 = 5997$ is less prone to error using a mental method. Include word problems.

N6.3D	Estimate the answer to a multiplication involving a 1 or 2 place decimal and a whole number.	Round the decimal to the nearest whole number. For example: $4.7 \times 8 \approx 5 \times 8 = 40$																														
N6.3E	Multiply decimals with 1 or 2 decimal places by whole numbers.	Start with money. Practice both mental and written methods. For example: $4 \times \text{£}1.50 = 4 \times \text{£}1 + 4 \times \text{£}0.50 = \text{£}4 + \text{£}2 = \text{£}6$ Encourage rounding first to estimate an answer. For example: $5.9 \times 7 \approx 6 \times 7 = 42$ <div>$\begin{array}{r} 5.9 \\ \times 7 \\ \hline 41.3 \\ \hline \end{array}$</div>																														
N6.3F	Divide numbers up to and including four digits by 1-digit numbers with remainders written as fractions.	For example: <div>$\begin{array}{r} 248 \text{ r } 1 \\ 3 \overline{) 7425} \\ \underline{312} \\ 425 \\ \underline{375} \\ 50 \end{array}$</div> $745 \div 3 = 248\frac{1}{3}$ Support this with concrete objects such as cakes and pictorial representations.																														
N6.3G	Divide numbers up to and including four digits by 1-digit numbers with remainders written as decimals (up to and including 2 decimal places).	For example: $1058 \div 8$ <div>$\begin{array}{r} 132.25 \\ 8 \overline{) 1058.00} \\ \underline{810} \\ 248 \\ \underline{240} \\ 80 \\ \underline{80} \\ 0 \end{array}$</div> Relate this to sharing money equally.																														
N6.3H	Divide numbers up to four digits by 2 digit whole numbers using a formal written method, with whole number or decimal answers (up to 2 decimal places).	For example: <div><div>$\begin{array}{r} 181 \\ 13 \overline{) 2353} \\ \underline{130} \\ 105 \\ \underline{104} \\ 13 \\ \underline{13} \\ 0 \end{array}$</div><div>$\begin{array}{r} 149 \\ 13 \overline{) 1937} \\ \underline{1300} \\ 637 \\ \underline{520} \\ 117 \\ \underline{117} \\ 0 \end{array}$</div><div>$\begin{array}{r} 18.25 \\ 24 \overline{) 438.00} \\ \underline{240} \\ 198 \\ \underline{192} \\ 60 \\ \underline{48} \\ 120 \\ \underline{120} \\ 0 \end{array}$</div><div>$13 \times 100$ 13×40 13×9</div></div>																														
N6.3I	Interpret remainders by rounding, as appropriate for the context.	Include word problems. For example: A classroom has tables that seat 4 children each. A class has 30 children. How many tables are needed for the class?																														
N6.3J	Multiply and divide whole numbers and decimals by 10, 100 and 1000, with integer and decimal answers (up to and including 2 decimal places).	Use a place-value table. <table><tr><td></td><td>1 000 000s</td><td>100 000s</td><td>10 000s</td><td>1 000s</td><td>100s</td><td>10s</td><td>1s</td><td>$\frac{1}{10}$s/0.1s</td><td>$\frac{1}{100}$s/0.01s</td></tr><tr><td>$\times 100$</td><td>4</td><td>1</td><td>0</td><td>7</td><td>9</td><td>0</td><td>0</td><td></td><td></td></tr><tr><td>$\div 100$</td><td></td><td></td><td></td><td></td><td>4</td><td>1</td><td>0</td><td>7</td><td>9</td></tr></table> Include word problems.		1 000 000s	100 000s	10 000s	1 000s	100s	10s	1s	$\frac{1}{10}$ s/0.1s	$\frac{1}{100}$ s/0.01s	$\times 100$	4	1	0	7	9	0	0			$\div 100$					4	1	0	7	9
	1 000 000s	100 000s	10 000s	1 000s	100s	10s	1s	$\frac{1}{10}$ s/0.1s	$\frac{1}{100}$ s/0.01s																							
$\times 100$	4	1	0	7	9	0	0																									
$\div 100$					4	1	0	7	9																							
N6.3K	Find common factors, common multiples and prime factors.	Find common factors and multiples, including finding the highest common factors and lowest common multiples when solving problems or working with equivalent fractions.																														

THE FOUR OPERATIONS

Reference	Objective	Notes and guidance
N6.4A	Solve problems in contexts, deciding which of the four operations to use.	Include word problems. Encourage students to create their own word problems, using pictures to assist them with language. Begin to solve direct-proportion problems. For example: 5 pencils cost £2. How much do 3 pencils cost?
N6.4B	Use inverse operations and estimation to check calculations.	
N6.4C	Sustain a line of enquiry; make and test a hypothesis.	For example: <ul style="list-style-type: none"> • Write a 2-digit number, where the first digit is larger than the second, such as 41. • Reverse the digits and subtract from the original number: $41 - 14 = 27$. • Repeat this. What do you notice? • Write a hypothesis. • Test the hypothesis.
N6.4D	Look for patterns and write rules; use a systematic approach.	For example: <ul style="list-style-type: none"> • Add pairs of consecutive numbers. What do you notice? • Multiply pairs of consecutive numbers. What do you notice?
N6.4E	Use priority of operations for calculations including simple powers and brackets.	Use BIDMAS to solve problems involving +, −, ×, and ÷, as well as simple powers and brackets.

FRACTIONS AND DECIMALS

Reference	Objective	Notes and guidance
N6.5A	Work out unit and non-unit fractions (with denominators up to and including 10) of 3-digit numbers or quantities.	For example: $\frac{1}{6}$ of 180 g = $180 \text{ g} \div 6 = 30 \text{ g}$, so $\frac{5}{6}$ of 180 g = $5 \times 30 \text{ g} = 150$.
N6.5B	Identify, name and write equivalent fractions of a given fraction (with denominators up to and including 10).	<p>Multiply or divide the numerator and denominator by the same number. For example:</p> <div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;"> $\frac{2}{3} = \frac{8}{12}$ $\times 4$ (top) $\times 4$ (bottom) </div> <div style="text-align: center;">  </div> <div style="text-align: center;"> $\frac{2}{10} = \frac{1}{5}$ $\div 2$ (top) $\div 2$ (bottom) </div> <div style="text-align: center;">  </div> </div> <p>Use pictorial representations as support. Use the term 'simplifying' and 'cancelling' (for dividing).</p>

N6.5C	Identify, name, convert and write common equivalent fractions, including $\frac{1}{4}$ and $\frac{3}{4}$ with denominators up to 100, and write these as decimals.	<p>Multiply the numerator and denominator by the same number. For example:</p> $\frac{1}{4} = \frac{25}{100} = 0.25 \quad \frac{3}{4} = \frac{75}{100} = 0.75 \quad \frac{1}{20} = \frac{5}{100} = 0.05$ <p>Use the pictorial representation of a 100-square.</p>
N6.5D	Simplify fractions using common factors and be able to write fractions in the same denomination using common multiples.	<p>For example:</p> <ul style="list-style-type: none"> Be able to write $\frac{4}{8}$ as $\frac{2}{4}$ and $\frac{1}{2}$. Be able to write $\frac{2}{4} + \frac{6}{8}$ as $\frac{4}{8} + \frac{6}{8}$ or $\frac{2}{4} + \frac{3}{4}$.
N6.5E	Compare and order fractions whose denominators are all multiples of the same number (including fractions > 1) and write statements using inequality signs $<$ or $>$.	<p>Convert to equivalent fractions to make comparisons and place fractions in order.</p> <p>Use the pictorial representation of fraction bars.</p>
N6.5F	Add and subtract fractions with different denominators and mixed numbers, simplifying and using equivalent fractions as needed.	
N6.5G	Multiply proper fractions and mixed numbers by whole numbers.	Use materials and diagrams to support multiplication.
N6.5H	Multiply simple pairs of proper fractions.	For example: $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$, $\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$
N6.5I	Divide proper fractions by whole numbers.	For example: $\frac{1}{3} \div 2 = \frac{1}{6}$, $\frac{1}{2} \div 4 = \frac{1}{8}$
N6.5J	Read, write, order and compare numbers with a different number of decimal places, up to and including 2 decimal places.	<p>Use a place-value table and a 100-square.</p> <p>For example: Which is greatest, 0.45 or 0.8?</p> <p>Make connections to decimal measures (including a metre ruler and relevant coins).</p>
N6.5K	Add and subtract 0.01, 0.02, 0.03 ... 0.09 to and from a number with 2 decimal places.	Use a number line.
N6.5L	Solve missing number, fraction and decimal problems.	

PERCENTAGES

Reference	Objective	Notes and guidance
N6.6A	Recognise the per cent symbol (%), understand that per cent relates to 'number of parts per hundred' and write percentages as a fraction with denominator 100 and as a decimal.	Use Base-10 cubes and a 100-square with some squares shaded to represent a percentage.

N6.6B	Identify, name and write common equivalent fractions, including $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ with denominators 10 and 100; write these as decimals and percentages.	<p>For example:</p> $\frac{1}{2} = \frac{5}{10} = 0.5$ $\frac{1}{2} = \frac{50}{100} = 0.50 = 50\%$ $\frac{1}{4} = \frac{25}{100} = 0.25 = 25\%$ <p>Support this with a 100-square.</p>
N6.6C	Recall and use equivalences between $\frac{1}{4}$ and 25%, and between $\frac{1}{2}$ and 50% to find percentages of quantities.	For example: Work out 50% of 24 m by finding $\frac{1}{2}$ of 24. Support this with fraction bars.
N6.6D	Find percentages (multiples of 5% and 10%) of quantities in multiples of 5 and 10 only.	For example: Find 35% of 60.
N6.6E	Solve 1- and 2-step problems in contexts, choosing the appropriate operation, working with numbers and fractions (with denominators up to and including 10, and with 100 as a denominator), decimals and simple percentages.	Encourage decisions about which operations and methods to use. For example: A man is 185.6 m tall. His brother is 0.8 m shorter. His younger sister is 50% the height of his brother. How tall is his younger sister?

RATIO AND PROPORTION

Reference	Objective	Notes and guidance
N6.7A	Use integer multiplication and division facts to solve simple ratio and proportion problems involving equivalent ratios.	For example: In a class of 27 children, $\frac{2}{3}$ of the children are aged 10, and $\frac{1}{3}$ of the children are aged 11. How many are 10 years old? What is the ratio of 11-year-old children to 10-year-old children?
N6.7B	Calculate percentages to solve problems and use percentages for comparison.	<p>For example:</p> <ul style="list-style-type: none"> In a survey of 240 people, 20% of the people said that they recycle. How many people is this? A girl ran 40% of 20 km while training for a race. How far did she run?
N6.7C	Understand the difference between ratio and proportion and use ratio notation.	<p>Explain that the 'ratio' tells you how much of one thing there is compared to another. For example: The ratio of men to women in a country might be 52:48, meaning that for every 52 men there are 48 women.</p> <p>Explain that 'proportion' is an equation that can be solved and is used to find out the quantity of one category out of a total. For example: The proportion of men in a city is 52 out of 100, $\frac{52}{100}$ or 52%.</p>
N6.7D	Use knowledge of multiples and fractions to solve problems involving unequal sharing and grouping.	<p>Solve everyday problems that involve unequal quantities. For example:</p> <ul style="list-style-type: none"> For every 1 litre of milk you need 5 spoonfuls of flour. How much flour do you need if you use 6 litres of milk? There are 40 children in the class. $\frac{3}{5}$ of the children play football. How many children do not play football?

ALGEBRA

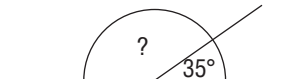
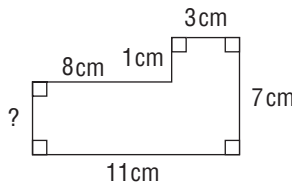
Reference	Objective	Notes and guidance
N6.8A	Use formal algebraic notation to express missing number problems.	Use formal notation to represent unknowns in, for example, understood mathematical situations, including problems of shape, number and measure; puzzles; mathematical scientific formulae; generalisations of number patterns.
N6.8B	Solve problems by using simple formulae.	For example: Calculate the area of rectangle by $l \times w$ (length \times width) or the volume of a cuboid by $l \times h \times w$ (length \times height \times width).
N6.8C	Use formal algebraic notation to express a linear sequence.	Use n to represent the position of a number in a sequence. For example: $3 \times n + 2$ generates the sequence 5, 8, 11, 14 ... The 100th term would be 302 ($3 \times 100 + 2$).
N6.8D	Solve equations with two unknowns.	For example: Find five different solutions to this equation: $m + n = 3$. Find all the solutions to this equation, using positive integers: $u + v = 6$.
N6.8E	Use knowledge of number, including commutativity, to find possible combinations of two variables.	Arrive at a total by grouping or combining or by using number properties efficiently. For example: <ul style="list-style-type: none"> • $c = a \times b$, and therefore $c = b \times a$. • $(2 \times g) + w = 10$. From this statement, we know w must be greater than g (and at least 4).
N6.8F	Solve simple equations with one variable.	For example: $3x + 1 = 7$
N6.8G	Simplify expressions by collecting like terms or expanding those involving brackets.	Collect like terms. For example: $y + y + x + x + x = 2y + 3x$ Simplify and expand a simple equation involving brackets. For example: $3(2 + a) = 6 + 3a$, $4(2x - 5) = 8x - 20$
N6.8H	Be able to substitute values into simple algebraic expressions.	For example: Find the value of $4a + 2b$ when $a = 2$ and $b = 3$.

GEOMETRY AND MEASURE

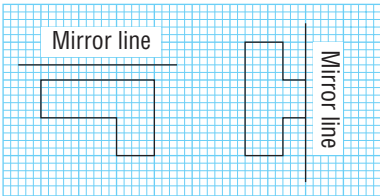
MEASURE

Reference	Objective	Notes and guidance
G6.1A	Solve problems involving money calculations, using all four operations, including rounding answers to the nearest integer denomination and interpreting answers with 1 decimal place.	Use this as an opportunity to reinforce Year 6 Number. For example: <ul style="list-style-type: none"> • Multiply decimals with 2 decimal places by whole numbers. • Divide whole numbers that give answers up to 2 decimal places.
G6.1B	Convert between different metric units of measure (answers up to and including 2 decimal places).	Convert between mm and cm, cm and m, m and km, g and kg or ml and l. For example: <ul style="list-style-type: none"> • Write 79cm in m. • How many ml are there in 4.56 litres?
G6.1C	Read and record times in different units.	For example: In hours, minutes and seconds, such as 1:35:26
G6.1D	Solve problems involving converting between units of time (giving answers as mixed units, not decimals).	For example: It takes 20 minutes to travel to the shops from home. You spend 45 minutes shopping, and then you go home again. How long are you away from home? Give your answer in hours and minutes.
G6.1E	Solve problems involving measure, using all four operations.	For example: A taxi makes two journeys. The first journey is 5.4 km and the second journey is 3.8 km. How far does the taxi travel in total? Give your answer to the nearest km.
G6.1F	Find perimeters of regular and irregular polygons by measuring and by calculating.	For example: Recognise that, to find the perimeter of a regular hexagon, you can multiply the side length by 6.
G6.1G	Recognise and use the formula for area of a rectangle, triangle and parallelogram.	Find areas by measuring length and width in mm, cm or m and using the formula. Use mm^2 and m^2 . Relate this to finding area by counting squares.
G6.1H	Recognise and use the formula for volume of a cuboid.	Find volumes of cuboids by measuring side lengths and using the formula. Use cm^3 . Relate this to finding volume by counting cubes.
G6.1I	Solve perimeter and area problems involving rectangles, squares and triangles.	For example: Find a missing side length given the perimeter or area.

SHAPE

Reference	Objective	Notes and guidance
G6.2A	Know that angles on a straight line add to 180° , and find one missing angle on a straight line; recognise that angles where they meet at a point are on a straight line and use this to find missing angles; recognise vertically opposite angles.	For example: 
G6.2B	Measure and draw angles up to 180° .	
G6.2C	Know that angles inside a triangle add up to 180° , and angles in a quadrilateral add up to 360° and find unknown angles using this knowledge.	Explain how unknown angles in a triangle or quadrilateral can be found using known measurements and find missing angles using calculation rather than measurement.
G6.2D	Use the properties of rectangles to find missing lengths.	For example: 
G6.2E	Distinguish between irregular and regular polygons.	Use the terms 'polygon', 'regular', 'irregular', 'equal sides' and 'equal angles'.
G6.2F	Recognise and name regular polygons with up to eight sides.	Include regular and irregular pentagons, hexagons and octagons.
G6.2G	Make and recognise simple 3D solids from a net.	Include cubes, cuboids, regular tetrahedrons, square-based pyramids and triangular prisms.
G6.2H	Draw and name parts of a circle: radius and diameter; know the relationship between the diameter and radius.	Use compasses to draw a circle of a given radius or diameter.
G6.2I	Recognise symmetry in regular and irregular polygons; draw the lines of symmetry.	Draw lines of symmetry in equilateral triangles, pentagons and hexagons in different orientations.
G6.2J	Identify, describe and compare simple properties of common 2D shapes; sort the shapes accordingly.	Sort shapes by their side and angle properties and their symmetries, including regular polygons.
G6.2K	Estimate the size of angles.	Estimate the size of unknown angles of 360° or less.
G6.2L	Draw accurate triangles using practical equipment, given specific details and using knowledge of the properties of triangles to complete missing angles or lengths.	Use a ruler and protractor to construct a triangle given two lengths and an angle or one length and two angles.

POSITION AND DIRECTION

Reference	Objective	Notes and guidance
G6.3A	Read, write and use coordinates in all four quadrants.	Describe the position of a point using coordinates and plot a point given its coordinates. Give students drawn axes. Use the terms 'axes', 'axis', 'horizontal', 'vertical', 'x-axis' and 'y-axis'. Relate this to positive and negative numbers on a number line. Include the use of ICT tools.
G6.3B	Draw reflections of simple shapes (where all edges meet at right angles) in a horizontal or vertical mirror line, on squared paper.	Include shapes on or to the side of a mirror line, but not crossing the mirror line. For example: 
G6.3C	Describe and draw translations of points and simple shapes, on squared paper.	Use the language of movement. For example: squares up or down and left or right.
G6.3D	Use knowledge of other operations, including fractions, to convert between miles and kilometres.	Know that 1 km is $\frac{5}{8}$ of a mile and use this to be able to convert between the two units of distance.

STATISTICS

STATISTICS

Reference	Objective	Notes and guidance
S6.1A	Interpret and construct simple dual bar charts.	Record, interpret and compare information in a simple dual bar chart for given data or raw data that has been collected in the classroom.
S6.1B	Interpret and construct simple line graphs for more than one set of data.	Record, interpret and compare simple line graphs with two graph lines for given data or raw data collected in the classroom. For example: <ul style="list-style-type: none"> • Compare temperatures in two different places. • Compare heights of two different plants as they grow.
S6.1C	Solve problems by organising data into a table or reading and interpreting data from tables.	Use data from a range of contexts, such as timetables, real-life tables from newspapers and information leaflets.
S6.1D	Solve problems using data presented in line graphs for two variables and dual bar charts.	Find the sum of quantities and the difference between quantities and compare quantities from a line graph. Use the terms 'How many altogether/in total?', 'How many more ____ than ____?', 'find the difference between' and so on.
S6.1E	Be able to interpret data present in pie charts and construct pie charts to show data appropriately.	Connect work on angles, fractions and percentages to the interpretation of pie charts and use pie charts to solve problems.
S6.1F	Find the mean of a data set.	Calculate the mean of a data set and know when it is appropriate to do so.
S6.1G	Find the median of a data set.	Work out the median number of a simple set of integers by listing the numbers in numerical order.
S6.1H	Find the range of a data set.	Calculate the range of a simple set of integers by subtracting the lowest value from the highest.