Welholme Academy

Maths Workshop

Year 2

Year 2 Expectations

Number and Place Value

To add, subtract, multiply and divide successfully, pupils need to:

- read and write numbers to at least 100 in numerals and in words
- count in steps of 2, 3, and 5 from 0, and in tens from any number, forwards and backwards
- recognise the place value of each digit in a two-digit number (tens, ones)
- identify, represent and estimate numbers using different representations, including the number line
- compare and order numbers from 0 up to 100; use <, > and = signs

Addition

Conceptual understanding and procedural fluency

To add successfully, pupils need to:

- recall and use addition facts to 20 fluently, and derive and use related facts up to 100, including adding two multiples of 10, e.g. 30 + 50
- add numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - three one-digit numbers
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
- record addition in columns to support place value and prepare for the formal written method with larger numbers

Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, addition to:

- solve problems with addition:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods

Subtraction

Conceptual understanding and procedural fluency

To subtract successfully, pupils need to:

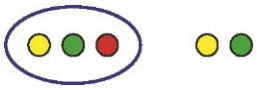
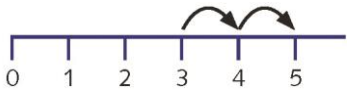
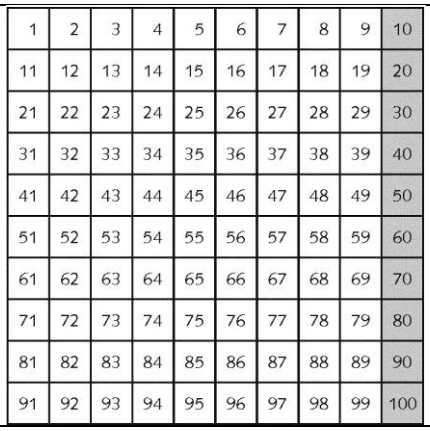
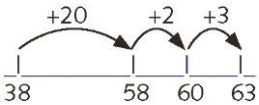
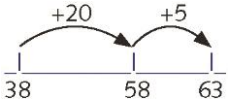
- recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100, including subtracting two multiples of 10, e.g. 80 – 30
- subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
- record subtraction in columns to support place value and prepare for the formal written method with larger numbers

Reason mathematically and solve problems

Pupils need to use and apply their understanding of, and fluency in, subtraction to:

- solve problems with subtraction:
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
  - applying their increasing knowledge of mental and written methods

Year 2 Addition Strategies

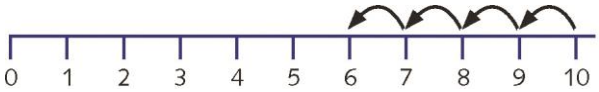
Mental Strategies	Your notes and examples
concrete objects/pictorial representations 	7 + 3 =
number tracks and number lines finding the difference' (counting on) 	16 + 3 =
1–100 number square	 22 + 3 =
Use of calculation families (trios). If I know 5 + 2 = 7, Then I can use it to work out 2 + 5, 7 – 2, 7 – 5	
The empty number line 38 + 25 =  leading to: 	36 + 27 =
Use knowledge that addition can be done in any order (commutative) - put the larger number first and count on in tens or ones - add three small numbers by putting the largest number first and/or find a pair totalling 10 e.g. 13 + 97 = would become 97 + 13 =	16 + 84 =

Partition additions into tens and ones, then recombine, e.g. 38 + 25 = 38 + 20 + 5 = 50 + 13 = 63	29 + 34 =
Identify near doubles, using doubles already known e.g. 7 + 8, 30 + 31	6 + 7 = 40 + 41 =
Add a 'near multiple of 10' to a two-digit number by adding 10, 20, 30 and adjusting e.g. 10 + 9 = 19 20 + 19 = 39	20 + 9 = 40 + 19 =
Recognise and use patterns of similar calculations (e.g. 10 + 0 = 10, 9 + 1 = 10, 8 + 2 = 10 ...)	
Understand and use the inverse relationship between addition and subtraction (e.g. 8 + 2 = 10 so 10 – 2 = 8)	7 + 3 = 10 so

Written Method	Your notes and examples
Add two two-digit numbers: TO + TO (where answers do not exceed 100) **Expanded written method** 38 + 25 38 + 25 13 50 63	Record addition calculations in columns to support place value and prepare for the formal written method of columnar addition with larger numbers. The first stage in the written method shows separately the addition of the ones to the ones and the tens to the tens. To find the partial sums either the ones or the tens can be added first, and the total of the partial sums can be found by adding them in any order. Children should be encouraged to start by adding the ones digits first (the least significant digits), as this echoes the formal written method. The addition of the tens in the calculation 38 + 25 is described in the words 'thirty add twenty equals fifty', stressing the link to the related fact 'three add two equals five'. Where appropriate, place value columns are labelled, e.g. TO, to remind children of the value of each of the digits.

	29 + 35

Year 2 Subtraction Methods

<table>
<tr><th>Mental Strategies</th><th>Your notes and examples</th></tr>
<tr><td>concrete objects/pictorial representations
  </td><td>10 – 6 =</td></tr>
<tr><td>number tracks and number lines:
‘take away’ (counting back)
 
</td><td>18 – 7 =</td></tr>
<tr><td>1–100 number square</td><td>39 – 7 =
<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>
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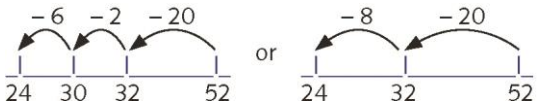
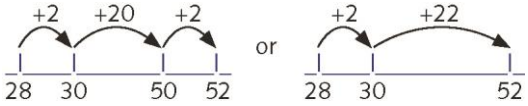
If I know 5 + 2 = 7,
Then I can use it to work out 2 + 5, 7 – 2, 7 – 5</td><td></td></tr>
<tr><td>The empty number line: ‘take away’ (counting back)
E.g. 52 – 28 =
 
</td><td>68 – 26 =</td></tr>
<tr><td>‘finding the difference’ (counting up)
e.g. 52 – 24 =
 
</td><td>68 – 24 =</td></tr>
</table>

Find a small difference by counting up from the smaller to the larger number E.g. 69 - 51	
Subtract a 'near multiple of 10' from a two-digit number by subtracting 10, 20, 30 and adjusting e.g. 50 – 19 = 31	70 – 29 =
Recognise and use patterns of similar calculations (e.g. 10 – 0 = 10, 10 – 1 = 9, 10 – 2 = 8 ...)	
Understand and use the inverse relationship between addition and subtraction e.g. 8 - 2 = 6 so 6 + 2 = 8	7 – 4 = 3 so
Use partitioning, e.g. 52 – 28 = 52 – 20 – 8 = 32 – 8 = 24	72 – 38 =

Written Methods	Your notes and examples
Subtract two two-digit numbers: TO – TO (that do not require decomposition) e.g. 87 – 32 87 – 32 55	Record subtraction calculations that do not require decomposition in columns to support place value and prepare for formal written methods of columnar subtraction with larger numbers. Where appropriate, place value columns are labelled, e.g. TO, to remind children of the value of each of the digits. 74 – 21 =