

Mastering Number – Securing Additive Facts beyond Key Stage 1

| Block | Title | Pupils will: | Links to Ready-to-Progress Criteria | Use this with: | Number of sessions |
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| 1 | Securing understanding of the additive relationship | <ul style="list-style-type: none"> Use the language of 'part' and 'whole' when describing the numbers in a part-part-whole diagram Secure the language related to addition and subtraction equations: <i>addend; sum; minuend; subtrahend</i>' <i>difference</i> and relate this to <i>wholes and parts</i> Write the full set of 8 addition and subtraction equations to match a part-part-whole diagram or bar model Vary the position of the equals symbol, understanding this as a symbol of <i>equality</i> Compare part-part-whole diagrams and bar models, understanding that both of these represent the additive relationship between the whole and the parts Rearrange equations to find missing sums, addends, differences, subtrahends or minuends | 3AS-3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both these relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction. | All pupils in Year 3 | 12 |
| 2 | Composition and securing additive facts: within 5 | <ul style="list-style-type: none"> Secure their understanding that addition is commutative Secure their understanding of the composition of 3, 4 and 5, working systematically to find all the ways that these numbers can be composed | 2NF-1 Secure fluency in addition and subtraction | Pupils who: <ul style="list-style-type: none"> are not yet secure in their understanding that addition is commutative and use this | 12 |

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| | | <ul style="list-style-type: none"> Explore the relationship between the addends in a set of facts with the same sum, identifying and explaining the '1 more/1 less' pattern Apply knowledge of the composition of 3, 4 and 5 to identify when a pair of addends has a given sum Identify missing addends in addition equations Identify the difference in subtraction equations, relating this to a missing part/missing addend Practise recalling addition and subtraction facts within 5 to develop automaticity | facts within 10, through continued practice. | <p>to recall facts with addends in either order</p> <ul style="list-style-type: none"> do not link their understanding of how numbers can be composed with addition and subtraction facts cannot yet automatically recall addition and subtraction facts within 5 revert to counting strategies when calculating | |
| 3 | Structures within 10 | <ul style="list-style-type: none"> Explore the addition table of facts within 10 Practise recalling previously-learnt facts (within 5) Identify odd and even numbers Identify that even numbers can be composed of EITHER a pair of even numbers or a pair of odd numbers and reason that the sum of pairs of odd/even number must be even Connect the composition of even numbers to doubles Identify that odd numbers can be composed of one odd part or one even part, and reason that the sum of an odd or even number must be odd Identify that the numbers 6 to 9 all have 5 as a part, and connect this to addition and subtraction facts | <p>2NF-1</p> <p>Secure fluency in addition and subtraction facts within 10, through continued practice.</p> | <p>Pupils who:</p> <ul style="list-style-type: none"> are not yet secure in their understanding that 2 odd numbers/ 2 even numbers sum to an even number, and an odd number plus an even number sum to an odd number cannot yet automatically recall doubles and halves within 10, and use this to subtract when the minuend is double the value of the subtrahend recall the composition of each of 6, 7, 8, 9 and 10, when 5 is a part, and connect this to related addition and subtraction facts. | 9 |

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| 4 | Composition and securing additive facts: 6 to 10 | <ul style="list-style-type: none"> Explore the addition table of facts within 10 Secure their understanding of the composition of each of the numbers 6 to 10 Connect the composition of 6 to 10 with both addition and subtraction facts Practise recalling sums and differences to develop automaticity within 10 Apply additive facts within 10 to addition and subtraction calculations to 100, working <i>within 10s</i> boundaries Apply additive facts within 10 to addition and subtraction calculations to 100, working with multiples of 10 | <p>2NF-1 Secure fluency in addition and subtraction facts within 10, through continued practice.</p> <p>2AS-3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.</p> <p>3NF-3 Apply place-value knowledge to known additive [and multiplicative] number facts (scaling facts by 10).</p> | <p>Pupils who:</p> <ul style="list-style-type: none"> cannot yet automatically recall all 36 addition facts within 10, and their corresponding subtraction facts cannot confidently apply known facts within 10 to addition and subtraction calculations within 10s boundaries, e.g. $5 + 3 = 8$, so $25 + 3 = 28$, or $8 - 3 = 5$, so $28 - 3 = 25$ cannot confidently apply known facts within 10 to addition and subtraction calculations within 100 using scaled facts, e.g. $5 + 3 = 8$, so $50 + 30 = 80$, and $80 - 50 = 30$ | 22 |
| 5 | Securing additive facts within 10 – strategies | <ul style="list-style-type: none"> Apply a range of generalisation to secure additive facts within 10, then within 20, including: <ul style="list-style-type: none"> adding 1 gives 1 more, subtracting 1 gives 1 less consecutive numbers have a difference of 1 adding 2 to an even number gives the next even number subtracting 2 from an even number gives the previous even number | <p>2NF-1 Secure fluency in addition and subtraction facts within 10, through continued practice.</p> | <p>Pupils who:</p> <ul style="list-style-type: none"> cannot yet automatically recall all 36 addition facts within 10, and their corresponding subtraction facts are not secure with generalisations about adding 1 or 2 to or from odd/even numbers, and | 10 |

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| | | <ul style="list-style-type: none"> ○ adding 2 to an odd number gives the next odd number ○ subtracting 2 from an odd number gives the previous odd number ○ consecutive even numbers have a difference of 2 ○ consecutive odd numbers have a difference of 2 ○ when zero is an addend, the sum is equal to the other addend ○ when zero is the subtrahend, the difference is equal to the minuend | | differences of 1 or 2, when working within and beyond 10 | |
| 6 | Doubles and near doubles | <ul style="list-style-type: none"> ● Explore the addition table of facts across 10 ● Secure their understanding of the composition of the numbers 11 to 19 and apply this to addition and subtraction calculations ● Use the '5 and a bit' structure to calculate doubles to double 10 ● Relate doubles to halves ● Practise to develop automaticity with doubles facts, and use these to subtract when the minuend is double the value of the subtrahend ● Calculate near doubles by doubling the smaller and adding 1 ● Calculate near doubles by adding the larger addend and subtracting 1 ● Transform pairs of odd numbers and pairs of even numbers into doubles | 3NF-1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice. | All pupils in Year 3. | 15 |

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| 7 | Addition across 10 | <ul style="list-style-type: none"> • Explore the addition table of facts across 10 • Practise adding 3 numbers when 2 addends sum to 10 • Develop fluency with the strategy of 'making 10' for addition calculations across 10 (adding <i>through</i> 10) • Add 5 to each of 6, 7, 8, and 9, by partitioning the larger addend into '5 and a bit' and 'making 10' with $5 + 5$. • Consider different addition strategies for the same calculations, e.g. $7 + 5 = 7 + 3 + 2$ (addition through 10) or $7 + 5 = 6 + 6$ | 3NF-1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice. | All pupils in Year 3. | 10 TBC |
| 8 | Subtraction across 10 | <ul style="list-style-type: none"> • Identify the subtraction facts which relate to addition facts across 10 • Subtract by identifying missing addends • Develop fluency with the strategy of 'subtracting <i>through</i> 10' for subtraction calculations across 10 (partition the <i>subtrahend</i>, subtract one part to <i>reach</i> 10, then subtract the other part <i>from</i> 10) • Develop fluency with the strategy of 'subtracting <i>from</i> 10' for subtraction calculations across 10 (partition the <i>minuend</i>, subtract the subtrahend from 10, then add the difference between the minuend and 10) • Check subtraction calculations by applying understanding of the additive relationship (checking that the sum of the subtrahend and difference is equal to the minuend) | 3NF-1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice. | All pupils in Year 3. | 15 TBC |

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| | | <ul style="list-style-type: none">Compare different subtraction strategies and consider which may be more efficient given the numbers in a calculation | | | |
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