## Addition

| Written <br> Methods | Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs | Add and subtract two two-digit numbers using concrete objects, pictorial representations progressing to formal written methods $\begin{array}{r} 46 \\ +27 \\ \hline \frac{73}{1} \end{array}$ | Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction $\begin{array}{r} 423 \\ +\quad 88 \\ \hline \frac{511}{11} \end{array}$ | Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition where appropriate $\begin{array}{r} 2458 \\ +\quad 596 \\ \hline 3054 \\ \hline 111 \end{array}$ | Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) <br> 23454 | Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Developing conceptual understanding | Use bonds of 10 to calculate bonds of 20 <br> 0000010000 <br> Count all <br> Count on $8$ <br> Count on, on number track, in 1 s | Number track / Number line - jumps of 1 then efficient jumps using number bonds $18+5=23$ <br> $46+27=73$ Count in tens then bridge. <br> $25+29$ by +30 then -1 (Round and adjust) | Number line: 264 + 158 efficient jumps $40+80=120 \text { using } 4+8=12$ <br> So $400+800=1200$ <br> $243+198$ <br> by +200 then -2 <br> (Round and adjust) <br> Pairs that make 100 <br> $23+77$ <br> Place value counters, $100 \mathrm{~s}, 10 \mathrm{~s}$, 1 s $264+158$ |  | $\begin{array}{r} +\quad 596 \\ +24050 \\ \hline 111 \end{array}$ |  |
| With jottings <br> ... or in your head | Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7=\square-9$ | Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <br> * a two-digit number and ones <br> * a two-digit number and tens <br> * two two-digit numbers <br> * adding three one-digit numbers | Add and subtract numbers mentally, including: <br> * a three-digit number and ones <br> * a three-digit number and tens <br> * a three-digit number and hundreds | Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | Add and subtract numbers mentally with increasingly large numbers | Perform mental calculations, including with mixed operations and large numbers |
| Just know it! | Represent \& use number bonds and related subtraction facts within 20 Add and subtract one-digit and twodigit numbers to 20 , including zero | Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 |  |  |  |  |
| Stage | 1 | 2 | 3 | 4 | 5 | 6 |
| Foundations | 1 more | 10 more Number bonds: $20,12,13$ | Add multiples of 10, 100 | Add multiples of 10s, 100s, 1000s | Add multiples of $10 \mathrm{~s}, 100 \mathrm{~s}$, 1000 s, tenths, | Add multiples of $10 \mathrm{~s}, 100 \mathrm{~s}$, 1000s, tenths, hundredths |
|  | Number bonds: 5, 6 | Number bonds: 14,15 Add 1 digit to 2 digit by bridging. | Add single digit bridging through boundaries | Fluency of 2 digit +2 digit | Fluency of 2 digit +2 digit including with decimals | Fluency of 2 digit + 2 digit including with decimals |
|  | Largest number first. Number bonds: 7, 8 | Partition second number, add tens then ones | Partition second number to add Pairs of 100 | Partition second number to add Decimal pairs of 10 and 1 | Partition second number to add | Partition second number to add |
|  | Add 10. Number bonds: 9,10 | Add 10 and multiples. Number bonds: 16 and 17 | Use near doubles to add | Use near doubles to add | Use number facts, bridging and place value | Use number facts, bridging and place value |
|  | Ten plus ones. Doubles up to 10 | Doubles up to 20 and multiples of 5 Add near multiples of 10 . | Add near multiples of 10 and 100 by rounding and adjusting | Adjust both numbers before adding Add near multiples | Adjust numbers to add | Adjust numbers to add |
|  | Use number bonds of 10 to derive bonds of 11 | Number bonds: 18, 19 Partition and recombine | Partition and recombine | Partition and recombine | Partition and recombine | Partition and recombine |

Subtraction


Multiplication


Division

| Written <br> Methods |  | Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication（ $\times$ ），division（ $\div$ ）and equals（＝）signs | Write and calculate mathematical statements for $\div$ using the x tables they know progressing to formal written methods． |  | Divide numbers up to <br> 4 digits by a one－digit $\quad 194 \div 6$ number using the formal written method of short division and interpret remainders $\quad 192 \div 6$ appropriately for the $=32$ context | Divide numbers up to 4 －digits by a two－digit whole number using the formal written method of short division where appropriate for the context |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Developing conceptual understanding | $6 \div 2=3$ by sharing into 2 groups and by grabbing groups of 2 <br> How many 2 s ？ | $15 \div 3=5$ in each group（sharing） <br> Link to fractions <br> $15 \div 3=5$ groups of 3 （grouping） <br> － <br> $10 \div 2=5$ <br> Use language of division linked to tables $\square$ <br> How many 2s？ | Grouping using partitioning $43 \div 3$ If I know $10 \times 3 \ldots$ <br> Use language of division linked to tables $\square$ <br> How many 3s？ $\bullet \cdot \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet$ <br>  | Grouping using partitioning $196 \div 6$ If $\mathrm{know} 3 \times 6 \ldots$ then $30 \times 6 \ldots$ <br> ＇Chunking up＇on a number line $196 \div 6=32 \mathrm{r} 4$ <br> Use language of division linked to tables． $\square$ | $192 \div 6$ using place value counters to support written method <br> 3 groups so that is $30 \times 6$ ， exchange remaining 10 for ten 1 s <br> So $192 \div 6=32$ | $\begin{aligned} & 564 \div 13=43 \text { r } 5=43!\frac{!}{!"}=43.38 \ldots \\ & \frac{43.38}{13} \begin{array}{l} 564.0 \end{array} \end{aligned}$ <br> Divide numbers up to 4 digits by a two－digit whole number using the formal written method of long division，and interpret remainders as whole number remainders，fractions，or by rounding，as appropriate for the context |
| With jottings <br> ．．．or in your head ．．．． | Solve one－step problems involving multiplication and division，by calculating the answer using concrete objects， pictorial representations and arrays with the support of the teacher | Show that multiplication of two numbers can be done in any order（commutative） and division of one number by another cannot <br> Solve problems involving multiplication and division，using materials，arrays， repeated addition，mental methods，and multiplication and division facts， including problems in contexts | Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know，including for two－digit numbers times one－digit numbers，using mental methods | Use place value，known and derived facts to multiply and divide mentally， including：multiplying by 0 and 1 ；dividing by 1 ；multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculations | Multiply and divide numbers mentally drawing upon known facts Multiply and divide whole numbers and those involving decimals by 10， 100 and 1000 | Perform mental calculations，including with mixed operations and large numbers |
| Just know it！ | Count in multiples of twos，fives and tens | Recall and use x and $\div$ facts for the 2,5 and $10 \times$ tables，including recognising odd and even numbers． | Recall and use x and $\div$ facts for the 3,4 and 8 times tables． | Recall x and $\div$ facts for x tables up to 12 x 12. | Recall prime numbers up to 19 know and use the vocabulary of prime numbers，prime factors and composite （non－prime）numbers |  |
| Stage | 1 | 2 | 3 | 4 | 5 | 6 |
| Foundations | Count back in 2 s | Division facts（ $2 \times$ table） | Review division facts（2x，5x，10x table） | Division facts（ $4 \mathrm{x}, 8 \mathrm{x}$ tables） 10 times smaller | Division facts（ $4 \mathrm{x}, 8 \mathrm{x}$ tables） 100， 1000 times smaller | Division facts（up to $12 \times 12$ ） |
|  | Count back in 10s | Division facts（10 x table） | Division facts（ $4 \times$ table） | Division facts（ $3 \mathrm{x}, 6 \mathrm{x}, 12 \mathrm{x}$ tables） | Division facts（ $3 \mathrm{x}, 6 \mathrm{x}, 12 \mathrm{x}$ tables） Partition to divide mentally | Partition to divide mentally |
|  | Halves up to 10 | Halves up to 20 | Halve two digit numbers | Halve larger numbers and decimals | Halve larger numbers and decimals | Halve larger numbers and decimals |
|  | Count back in 5 s | Division facts（ $5 \times$ table） | Division facts（ $8 \times \mathrm{table}$ ） | Division facts（ $3 \mathrm{x}, 9 \mathrm{x}$ tables） | Division facts（ $3 \mathrm{x}, 9 \mathrm{x}$ tables） 100,1000 times smaller | Division facts（up to $12 \times 12$ ） |
|  | Halve multiples of 10 | Count back in 3 s | Division facts（ $3 \times$ table） | Division facts（11x，7x tables） | Review division facts（11x， $7 \times$ tables） Partition decimals to divide mentally | Partition to divide mentally |
|  | How many 2s？5s？10s？ | Review division facts（ $2 \mathrm{x}, 5 \mathrm{x}, 10 \mathrm{x}$ table） | Division facts（ 6 x table）or review others | Division facts（ $6 \mathrm{x}, 12 \mathrm{x}$ tables） | Review division facts（ $6 x, 12 x$ tables） Halve larger numbers and decimals | Halve larger numbers and decimals |

