

Skill: Add 1-digit numbers within 10 **Year: 1**

When adding numbers to 10, children can explore both aggregation and augmentation.

The part-whole model, discrete and continuous bar models, number shapes and ten frame support aggregation.

The combination bar model, ten frames, bead string and number track all support augmentation.

$4 + 3 = 7$

$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10$

Number - declarative
 Read and write numbers from 1 to 20 in numerals and words.
 Identify one more or one less than a given number.
 Count to and across 100 forwards and backwards.

Number - procedural
 Identify and represent numbers using objects and pictorial representations including the number line.
 Use the language of: equal to, more than, less than, most, least.

Calculation - declarative
 Represent and use number bonds and related subtraction facts within 20.
 Develop fluency in addition and subtraction facts within 10.

Calculation - procedural
 Add and subtract one-digit and two-digit numbers to 20, including zero.
 Read, write and interpret mathematical statements involving addition, subtraction and equals signs.
 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts.

Skill: Solve 1-step problems using multiplication (sharing) **Year: 1/2**

Children solve problems by sharing amounts into equal groups.

In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally.

In Year 2, children are introduced to the division symbol.

There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?

$20 \div 5 = 4$

Number - declarative
 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.

Calculation - procedural
 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.

Calculation - conditional
 Solve one-step problems involving multiplication and division, using concrete objects, pictorial representations and arrays with support.

Skill: Add 1 and 2-digit numbers to 20 **Year: 1/2**

When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

Different manipulatives can be used to represent this exchange: base concrete resources alongside number lines to support children in understanding how to partition their jumps.

$8 + 7 = 15$

$10 + 5 = 15$

$10 + 7 = 17$

Skill: Subtract 1-digit numbers within 10 **Year: 1**

Part-whole models, bar models, ten frames and number shapes support partitioning.

Ten frames, number tracks, single bar models and bead strings support reduction.

Cubes and bar models with two bars can support finding the difference.

$7 - 3 = 4$

$10 - 3 = 7$

$10 - 7 = 3$

$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10$

Skill: Subtract 1 and 2-digit numbers to 20 **Year: 1/2**

When subtracting one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

Children should be encouraged to find the number bond to 10 when partitioning the subtracted number. Ten frames, number shapes and number lines are particularly useful for this.

$14 - 6 = 8$

$10 - 6 = 4$

$10 + 4 = 14$

Skill: Solve 1-step problems using division (grouping) **Year: 1/2**

Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in real groups such as number disks which helps to show the link between multiplication and division.

There are 20 apples altogether. They are put in bags of 5. How many bags are there?

$20 \div 5 = 4$

Skill: Divide 2-digits by 1-digit (sharing with no exchange) **Year: 1/2**

When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones.

Sticks, Base 10 and place value counters can all be used to share numbers into equal groups.

Part-whole models can provide children with a clear written method that matches the concrete representation.

$48 \div 2 = 24$

Skill: Solve 1-step problems using multiplication **Year: 1/2**

Children represent multiplication as repeated addition in many different ways.

In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally.

In Year 2, children are introduced to the multiplication symbol.

One bag holds 5 apples. How many apples do 4 bags hold?

$5 + 5 + 5 + 5 = 20$
 $4 \times 5 = 20$
 $5 \times 4 = 20$

Skill: Add 1 and 2-digit numbers to 20 **Year: 1/2**

When adding one-digit numbers that cross 10, it is important to highlight the importance of highlighting the importance of ten ones equalling one ten.

Different manipulatives can be used to represent this exchange. Use concrete resources alongside number lines to support children in understanding how to partition their jumps.

$8 + 7 = 15$

Number - declarative
Identify numbers using different representations, including the number line.
Recognise the place value of each digit in a two-digit number.

Number - procedural
Represent and estimate numbers using different representations, including the number line.
Represent and estimate numbers using different representations, including the number line.

Calculation - declarative
Secure fluency in addition and subtraction facts within 10.
Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
Recall (to 10) and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Calculation - procedural
Add and 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; adding three one-digit numbers.
Add and subtract across 10.
Add and subtract within 100 by applying related 1-digit facts.
Recognise the subtraction structure of 'difference' and answer questions of the form, "how many more...?"

Skill: Add three 1-digit numbers **Year: 2**

When adding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently.

This supports children in their understanding of commutativity.

Manipulatives that highlight number bonds to 10 are effective when adding three 1-digit numbers.

$7 + 6 + 3 = 16$

Number - declarative
Identify numbers using different representations, including the number line.
Recognise the place value of each digit in a two-digit number.

Number - procedural
Represent and estimate numbers using different representations, including the number line.
Represent and estimate numbers using different representations, including the number line.

Calculation - declarative
Secure fluency in addition and subtraction facts within 10.
Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
Recall (to 10) and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Calculation - procedural
Add and 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; adding three one-digit numbers.
Add and subtract across 10.
Add and subtract within 100 by applying related 1-digit facts.
Recognise the subtraction structure of 'difference' and answer questions of the form, "how many more...?"

Skill: Add 1-digit and 2-digit numbers to 100 **Year: 2/3**

When adding single digits to a two-digit number, children should be encouraged to count on from the larger number.

They should also apply their knowledge of number bonds to add more efficiently eg. $8 + 5 = 13$ so $38 + 5 = 43$.

Hundred squares and straws can support children to find the number bond to 10.

$38 + 5 = 43$

Number - declarative
Identify numbers using different representations, including the number line.
Recognise the place value of each digit in a two-digit number.

Number - procedural
Represent and estimate numbers using different representations, including the number line.
Represent and estimate numbers using different representations, including the number line.

Calculation - declarative
Secure fluency in addition and subtraction facts within 10.
Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
Recall (to 10) and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Calculation - procedural
Add and 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; adding three one-digit numbers.
Add and subtract across 10.
Add and subtract within 100 by applying related 1-digit facts.
Recognise the subtraction structure of 'difference' and answer questions of the form, "how many more...?"

Skill: Add two 2-digit numbers to 100 **Year: 2/3**

At this stage, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

Children can also use a blank number line to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient.

$38 + 23 = 61$

Number - declarative
Identify numbers using different representations, including the number line.
Recognise the place value of each digit in a two-digit number.

Number - procedural
Represent and estimate numbers using different representations, including the number line.
Represent and estimate numbers using different representations, including the number line.

Calculation - declarative
Secure fluency in addition and subtraction facts within 10.
Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
Recall (to 10) and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Calculation - procedural
Add and 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; adding three one-digit numbers.
Add and subtract across 10.
Add and subtract within 100 by applying related 1-digit facts.
Recognise the subtraction structure of 'difference' and answer questions of the form, "how many more...?"

Skill: Subtract 1 and 2-digit numbers to 100 **Year: 2**

At this stage, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

Children can also use a blank number line to count on to find the difference. Encourage them to jump to multiples of 10 to become more efficient.

$65 - 28 = 37$

Number - declarative
Identify numbers using different representations, including the number line.
Recognise the place value of each digit in a two-digit number.

Number - procedural
Represent and estimate numbers using different representations, including the number line.
Represent and estimate numbers using different representations, including the number line.

Calculation - declarative
Secure fluency in addition and subtraction facts within 10.
Secure fluency in addition and subtraction facts that bridge 10, through continued practice.
Recall (to 10) and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Calculation - procedural
Add and 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; adding three one-digit numbers.
Add and subtract across 10.
Add and subtract within 100 by applying related 1-digit facts.
Recognise the subtraction structure of 'difference' and answer questions of the form, "how many more...?"

Skill: 2 times table **Year: 2**

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones.

Use different models to develop fluency.

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: 5 times table **Year: 2**

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the five times table, using concrete manipulatives to support. Notice the pattern in the ones as well as highlighting the odd/even, odd/even pattern.

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: 10 times table **Year: 2**

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the ten times table, using concrete manipulatives to support. Notice the pattern in the digits: the ones are always 0, and the tens increase by 1 ten each time.

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: Solve 1-step problems using multiplication (sharing) **Year: 1/2**

Children solve problems by sharing amounts into equal groups.

In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally.

In Year 2, children are introduced to the division symbol.

There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?

$20 \div 5 = 4$

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: Solve 1-step problems using division (grouping) **Year: 1/2**

Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as number shapes which helps to show the link between multiplication and division.

There are 20 apples altogether. They are put in bags of 5. How many bags are there?

$20 \div 5 = 4$

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: Divide 2-digits by 1-digit (sharing with no exchange) **Year: 1/2**

When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones.

Straws, Base 10 and place value counters can all be used to share numbers into equal groups.

Part-whole models can provide children with a clear written method that matches the concrete representation.

$48 \div 2 = 24$

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: Solve 1-step problems using multiplication **Year: 1/2**

Children represent multiplication as repeated addition in many different ways.

In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally.

In Year 2, children are introduced to the multiplication symbol.

One bag holds 5 apples. How many apples do 4 bags hold?

$5 + 5 + 5 + 5 = 20$
 $4 \times 5 = 20$
 $5 \times 4 = 20$

Number - declarative
Count in steps of 10 from any number, forward and backward.

Calculation - declarative
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Procedural
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs.

Skill: Add 1-digit and 2-digit numbers to 100

$38 + 5 = 43$

Year: 2/3

Number - declarative
Read and write numbers up to 1000 in numerals and in words.
Recognise the place value of each digit in a three-digit number.
Identify numbers using different representations.

When adding single digits to a two-digit number, children should be encouraged to count on from the larger number.

Number - procedural
Compose and decompose 3-digit numbers using standard and non-standard partitioning.

Calculation - declarative
Calculate complements to 100.
Understand and use the commutative property of addition, and understand the related property for subtraction.

Calculation - procedural
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.

They should also apply their knowledge of number bonds to add more efficiently e.g. $8 + 5 = 13$ so $38 + 5 = 43$.

Hundred squares and straws can support children to find the number bond to 10.

Skill: 3 times table

$3 \quad 6 \quad 9 \quad 12$

Year: 3

Number - declarative
Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.

Calculation - declarative
Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.
Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.

Calculation - procedural
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 and progressing to formal written methods.

Encourage daily counting in multiples both forwards and backwards. This can be supported using a hundred square.

Look for patterns in the three times table, using concrete manipulatives to support. Notice the odd/even/odd/even pattern using number shapes to support. Highlight the pattern in the ones using a hundred square.

Skill: Add two 2-digit numbers to 100

$38 + 23 = 61$

Year: 2/3

At this stage, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

Children can also use a blank number line to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient.

Skill: 4 times table

$4 \quad 8 \quad 12 \quad 16 \quad 20$

Year: 3

Encourage daily counting in multiples, supported by a number line or a hundred square.

Look for patterns in the four times table, using manipulatives to support. Make links to the 2 times table, seeing how each multiple is double the two. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: Add numbers with up to 3 digits

$265 + 164 = 429$

Year: 3

Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

Plain counters on a place value grid can also be used to support learning.

Skill: 8 times table

$8 \quad 16 \quad 24 \quad 32 \quad 40$

Year: 3

Encourage daily counting in multiples, supported by a number line or a hundred square.

Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the four. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: Subtract numbers with up to 3 digits

$435 - 273 = 162$

Year: 3

Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 3 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

Plain counters on a place value grid can also be used to support learning.

Skill: Multiply 2-digit numbers by 1-digit numbers

$34 \times 5 = 170$

Year: 3/4

Teachers may decide to first look at the expanded column method before moving on to the short multiplication method.

The place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.

Skill: Divide 2-digits by 1-digit (sharing with exchange)

$52 \div 4 = 13$

Year: 3/4

When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones.

Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows.

Flexible partitioning in a part-whole model supports this method.

Skill: Divide 2-digits by 1-digit (sharing with remainders)

$53 \div 4 = 13 \text{ r}1$

Year: 3/4

When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones.

Starting with the equipment outside the place value grid will highlight remainders, as they will be left outside the grid once the equal groups have been made.

Flexible partitioning in a part-whole model supports this method.

Skill: Add numbers with up to 4 digits **Year: 4**

Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits.

Encourage children write out their calculation alongside any concrete resources so they can see the link to the written column method.

Place counters on a place value grid can also be used to support learning.

$1,378 + 2,148 = 3,526$

Skill: Subtract numbers with up to 4 digits **Year: 4**

Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 digits.

Encourage children write out their calculation alongside any concrete resources so they can see the link to the written column method.

Place counters on a place value grid can also be used to support learning.

$4,357 - 2,735 = 1,622$

Number - declarative
Identify and represent numbers using different representations.

Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones).

Find 1000 more or less than a given number.

Know that 10 hundreds are equivalent to 1 thousand, and that 1000 is 10 times the size of 100; apply this identity and work with base ten blocks. There are in other 4-digit multiples of 100.

Number - procedural
Compare and decompose 4-digit numbers using standard and non-standard partitioning.

Calculation - procedural
Add and subtract numbers with up to 4 digits using the formal written method of column addition and subtraction where appropriate.

Skill: 6 times table **Year: 4**

Encourage daily counting in multiples both forwards and backwards, supported by a hundred square. Look for patterns in the six times table. Make links to the 3 times table, using how each multiple is double the three. Notice the pattern in the ones within each group of six multiples. Highlight that all the multiples are even using number shapes to support.

Number - declarative
Know multiples of 6, 9, 12 and 25.

Calculation - declarative
Recall multiplication and division facts for multiplication tables up to 12 x 12, and recognise products in multiplication tables as multiples of the multiplier number.

Divide 1000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1000 with 2, 4, 5 and 10 equal parts.

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: 9 times table **Year: 4**

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the nine times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support as well as using the odd-even pattern within the multiples.

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: 7 times table **Year: 4**

Encourage daily counting in multiples both forwards and backwards, supported by a hundred square. The seven times table can be easier to learn as it is the lack of obvious pattern in the numbers, however they already know several facts due to commutativity. Children can still use the odd-even pattern in the multiples using number shapes to support.

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: 11 times table **Year: 4**

Encourage daily counting in multiples both forwards and backwards. This can be supported using a hundred square. Look for patterns in the eleven times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support. Also consider the pattern after counting 100.

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: 12 times table **Year: 4**

Encourage daily counting in multiples, supported by a hundred square. Look for patterns in the 12 times table, using concrete manipulatives to support. Make links to the 3 times table, using how each multiple is double the six. Notice the pattern in the ones within each group of four multiples. The hundred square can support in highlighting this pattern.

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Multiply 2-digit numbers by 1-digit numbers **Year: 3/4**

Teachers may decide to try look at the expanded column method before moving on to the short multiplication method. The place value counters should be used to support the understanding of the method used. This supporting the multiplication, in children should use their place value knowledge.

$34 \times 5 = 170$

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Multiply 3-digit numbers by 1-digit numbers **Year: 3/4**

When moving to 3-digit to 1-digit multiplication, encourage children to move towards the short formal written method. Base 10 and place value counters, continue to support the understanding of the written method. Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers.

$245 \times 4 = 980$

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Divide 2-digits by 1-digit (sharing with exchange) **Year: 3/4**

When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones. Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the ones. Flexible partitioning in a part-whole model supports this method.

$52 \div 4 = 13$

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Divide 2-digits by 1-digit (sharing with remainders) **Year: 3/4**

When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones. Starting with the equipment outside the place value grid will highlight remainders, as they will not divide the grid once the equal groups have been made. Flexible partitioning in a part-whole model supports this method.

$53 \div 4 = 13 \text{ r}1$

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Divide 3-digits by 1-digit (sharing) **Year: 4**

Children can continue to use place value counters to share 3-digit numbers into equal groups. Children should start with the equipment outside the place value grid before sharing the hundreds, tens and ones equally between the rows. The method can also help to highlight remainders. Flexible partitioning in a part-whole model supports this method.

$844 \div 4 = 211$

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Divide 2-digits by 1-digit (grouping) **Year: 4/5**

When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor.

Language is important here. Children should consider 'how many groups of 4 tens can we make?' and 'how many groups of 4 ones can we make?' Remainders can also be seen as they are left ungrouped.

$52 \div 4 = 13$

Calculation - procedural
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by and dividing by 10; multiplying together three numbers.

Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.

Skill: Add numbers with more than 4 digits **Year: 5/6**

Place value counters or plain counters on a place value grid are the most effective concrete resources when adding numbers with more than 4 digits.

At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.

$104,328 + 61,731 = 166,059$

Number - declarative
Read and write numbers to at least 1 000 000 and determine the value of each digit.
Recognise the place value of each digit in numbers with up to 2 decimal places.
Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1.

Number - procedural
Compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.
Order and compare numbers to at least 1 000 000.

Calculation - procedural
Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
Add and subtract numbers mentally with increasingly large numbers.

Skill: Add with up to 3 decimal places **Year: 5**

Place value counters and plain counters on a place value grid are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places.

Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.

$3.65 + 2.41 = 6.06$

Skill: Subtract numbers with more than 4 digits **Year: 5/6**

Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4 digits.

At this stage, children should be encouraged to work in the abstract using column method to subtract larger numbers efficiently.

$294,382 - 182,501 = 111,881$

Skill: Subtract with up to 3 decimal places **Year: 5**

Place value counters and plain counters on a place value grid are the most effective manipulatives when subtracting decimals with 1, 2 and then 3 decimal places.

Ensure children have experience of subtracting decimals with a variety of decimal places. This includes putting this into context when subtracting money and other measures.

$5.43 - 2.7 = 2.73$

Skill: Multiply 4-digit numbers by 1-digit numbers **Year: 5**

When multiplying 4-digit numbers, place value counters are the best manipulative to use to support children in their understanding of the formal written method.

If children are multiplying larger numbers and struggling with their times tables, encourage the use of multiplication grids so children can focus on the use of the written method.

$1,826 \times 3 = 5,478$

Calculation - declarative
Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.

Calculation - procedural
Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Skill: Multiply 2-digit numbers by 2-digit numbers **Year: 5**

When multiplying a multi-digit number by 2-digits, use the area model to help children understand the size of the numbers they are using. This links to finding the area of a rectangle by finding the space covered by the Base 10.

The grid method matches the area model as an initial written method before moving on to the formal written multiplication method.

$22 \times 31 = 682$

Skill: Multiply 3-digit numbers by 2-digit numbers **Year: 5**

Children can continue to use the area model when multiplying 3-digits by 2-digits.

Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers.

Encourage children to move towards the formal written method, seeing the links with the grid method.

$234 \times 32 = 7,488$

Skill: Multiply 4-digit numbers by 2-digit numbers **Year: 5/6**

When multiplying 4-digits by 2-digits, children should be confident in the written method.

If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method.

Consider where exchanged digits are placed and make sure this is consistent.

$2,739 \times 28 = 76,692$

Skill: Divide 3-digits by 1-digit (grouping) **Year: 5**

Children can continue to use grouping to support their understanding of short division when dividing a 3-digit number by a 1-digit number.

Place value counters or plain counters can be used on a place value grid to support this understanding. Children can also draw their own counters and group them through a more pictorial method.

$856 \div 4 = 214$

Skill: Divide 4-digits by 1-digit (grouping) **Year: 5**

Place value counters or plain counters can be used on a place value grid to support children to divide 4-digits by 1-digit.

Children can also draw their own counters and group them through a more pictorial method.

Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.

$8,532 \div 2 = 4,266$

Skill: Add numbers with more than 4 digits **Year: 5/6**

Place value counters or plain counters on a place value grid are the most effective concrete resources when adding numbers with more than 4 digits.

At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.

$104,328 + 61,731 = 166,059$

Number - declarative

Read and write numbers up to 10 000 000 and determine the value of each digit.

Recognise the place value of each digit in numbers with up to 10 million, including decimal fractions.

Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000).

Number - procedural

Compose and decompose numbers with up to 10 million using standard and non-standard partitioning.

Order and compare numbers up to 10 000 000.

Calculation - procedural

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Multiply 4-digit numbers by 2-digit numbers **Year: 5/6**

When multiplying 4-digits by 2-digits, children should be confident in the written method.

If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method.

Consider where exchanged digits are placed and make sure this is consistent.

$2,739 \times 28 = 76,692$

Calculation - declarative

Sustain fluency in multiplication table facts, and corresponding division facts, through continued practice.

Calculation - procedural

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

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.

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Add with up to 3 decimal places **Year: 5**

Place value counters or plain counters on a place value grid are the most effective concrete resources when adding decimals with 1, 2 and then 3 decimal places.

Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.

$3.65 + 2.41 = 6.06$

Number - declarative

Read and write numbers up to 10 000 000 and determine the value of each digit.

Recognise the place value of each digit in numbers with up to 10 million, including decimal fractions.

Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000).

Number - procedural

Compose and decompose numbers with up to 10 million using standard and non-standard partitioning.

Order and compare numbers up to 10 000 000.

Calculation - procedural

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Divide multi digits by 2-digits (short division) **Year: 6**

When children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective. Children can write out multiples to support their calculations with larger remainders. Children will also solve problems with remainders where the quotient can be rounded as appropriate.

$432 \div 12 = 36$

$7,335 \div 15 = 489$

Calculation - declarative

Sustain fluency in multiplication table facts, and corresponding division facts, through continued practice.

Calculation - procedural

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

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.

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Subtract numbers with more than 4 digits **Year: 5/6**

Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4-digits.

At this stage, children should be encouraged to work in the abstract, using column method to subtract larger numbers efficiently.

$294,382 - 182,501 = 111,881$

Number - declarative

Read and write numbers up to 10 000 000 and determine the value of each digit.

Recognise the place value of each digit in numbers with up to 10 million, including decimal fractions.

Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000).

Number - procedural

Compose and decompose numbers with up to 10 million using standard and non-standard partitioning.

Order and compare numbers up to 10 000 000.

Calculation - procedural

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Divide multi-digits by 2-digits (long division) **Year: 6**

Children can also divide by 2-digit numbers using long division.

Children can write out multiples to support their calculations with larger remainders.

Children will also solve problems with remainders where the quotient can be rounded as appropriate.

$432 \div 12 = 36$

$7,335 \div 15 = 489$

Calculation - declarative

Sustain fluency in multiplication table facts, and corresponding division facts, through continued practice.

Calculation - procedural

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

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.

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Subtract with up to 3 decimal places **Year: 5**

Place value counters and plain counters on a place value grid are the most effective manipulative when subtracting decimals with 1, 2 and then 3 decimal places.

Ensure children have experience of subtracting decimals with a variety of decimal places. This includes putting this into context when subtracting money and other measures.

$5.43 - 2.7 = 2.73$

Number - declarative

Read and write numbers up to 10 000 000 and determine the value of each digit.

Recognise the place value of each digit in numbers with up to 10 million, including decimal fractions.

Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000).

Number - procedural

Compose and decompose numbers with up to 10 million using standard and non-standard partitioning.

Order and compare numbers up to 10 000 000.

Calculation - procedural

Use their knowledge of the order of operations to carry out calculations involving the four operations.

Skill: Divide multi digits by 2-digits (long division) **Year: 6**

When a remainder is left at the end of a calculation, children can either leave it as a remainder or convert it to a fraction. This will depend on the context of the question.

Children can also answer questions where the quotient needs to be rounded according to the context.

$372 \div 15 = 24 \text{ r}12$

$372 \div 15 = 24 \frac{4}{5}$

Calculation - declarative

Sustain fluency in multiplication table facts, and corresponding division facts, through continued practice.

Calculation - procedural

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

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.

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

Use their knowledge of the order of operations to carry out calculations involving the four operations.