

HIAS MOODLE+ RESOURCE

# Year 6 Unit Plan 6.1

**Number and Place Value**

**Addition and Subtraction**

**Autumn Term**

HIAS Maths Team

September 2026

Final version

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# Overview

## This document contains...

Year 6 Unit Plans linked to the Hampshire Medium Term Overview

## Points to consider when using this resource:

These unit plans provide an example of how medium-term planning could be developed into units of work. These unit plans will need to be adapted to meet the needs of pupils. The unit plan provides an outline of a possible learning journey with suggestions of types of tasks that could be used. They also identify required prior learning, some common misconceptions and an indication of key skills pupils need to secure competency. It is assumed that teachers will make use of appropriate mathematical representations (manipulatives, visuals and symbolic) to support conceptual understanding for pupils alongside procedural fluency.

## National Curriculum Links:

### Number and Place Value

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above.

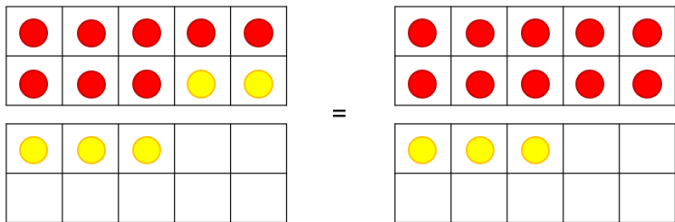
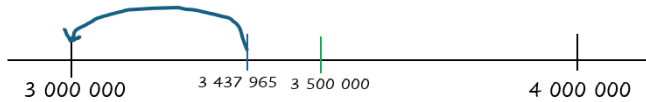
### Number - Addition and Subtraction

- perform mental calculations, including with mixed operations and large numbers
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- solve problems involving addition, subtraction, multiplication and division
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

<p>Unit 6.1 secures and extends pupils' understanding of number, place value, addition, and subtraction up to 10 000 000, while strengthening mental fluency, efficiency, and reasoning in preparation for end of Key Stage 2 assessment. The unit integrates conceptual understanding, mental strategies, and formal methods, with a strong emphasis on representation, strategic choice, and purposeful application, supporting pupils to think flexibly and efficiently rather than relying on procedural methods alone.</p>	<p><b>Notional Time:</b> <b>15 sessions</b></p>	
<p><b>Check and Refresh - skills and knowledge that pupils need to know</b></p>	<p><b>Verbal coding- precise mathematical language to model during worked examples</b></p>	<p><b>Mastering Key Facts in Key Stage 2 –</b> developing fluency and automaticity</p>
<p>Read, write order and compare numbers up to at least 1 000 000. Identify the value of each digit within a number up to 1 000 000. Identifying the previous and next multiples and the midpoint. Fluency with partitioning and using number bonds to add and subtract. Formal written methods of addition and subtraction with at least 4-digit numbers.</p>	<p>The previous multiple of 10/100/1000 is ____. The next multiple of 10/100/1000 is ____. The midpoint is ____. ____ is closer to ____ than ____ ____ rounded to the nearest 10/100/1000 is ____.</p> <p>If I know 5 ones + 3 ones = 8 ones, Then I know 5 thousands + 3 thousands = 8 thousands</p>	<p>Number adjustment</p> <ul style="list-style-type: none"> <li>• <math>329 + 426 = 330 + 425</math></li> <li>• <math>1998 + 2005 = 2000 + 2003</math></li> </ul> <p>Rounding and adjusting Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></p>
<p><b>Mathematical Concepts- important pieces of information learners should take away from the unit</b></p>	<p><b>Watch out for</b></p>	<p><b>DfE Ready -to- progress criteria</b></p>
<p>Secure understanding of place value up to 10 000 000</p> <p>Confident, accurate rounding to any required degree of accuracy</p> <p>Fluent and efficient use of mental calculation strategies</p> <p>Secure and flexible application of formal written methods</p> <p>Ability to select, justify, and explain appropriate strategies when working with numbers</p>	<p>Pupils who confuse digit value with digit position. Misreading large numbers. Weak understanding of magnitude (e.g. assuming 1,200,000 and 1,020, 000 as close in value) Pupils apply rules of rounding without understanding (e.g. “5 or more round up”). Pupils who rely on one familiar strategy only. Pupils who say “add a zero” rather than recognising that numbers are 10, 100 or 1000 times bigger. Pupils who misalign digits when carrying out formal written methods,</p>	<p><b>5NPV-1      6NPV-1</b></p> <p><b>6NPV-2      6NPV-3</b></p> <p><b>Formative assessment questions - key questions to support pupil reasoning and teacher assessment</b></p> <ul style="list-style-type: none"> <li>• What is the same and what is different?</li> <li>• What if I change...?</li> <li>• Can you give me an example of... and another...and another?</li> <li>• Which is harder and which is easier...?</li> <li>• If I know this, then what else do I know?</li> </ul>

## Visual coding: key representations

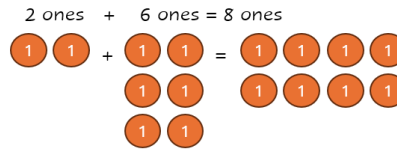
Round 3 437 965 to the nearest 1 000 000.



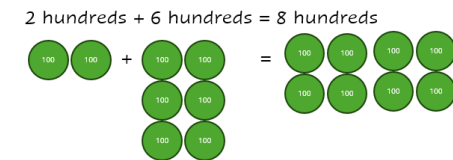
Thousands	Hundreds	Tens	Ones
+			

Thousands	Hundreds	Tens	Ones
+			

If I know...



Then I know...



### Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \phantom{1431} 11 \end{array}$$

Answer: 1431

874 - 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 8 \phantom{0} 12 \phantom{0} 1 \\ 9 \phantom{0} 3 \phantom{0} 2 \\ - 4 \phantom{0} 5 \phantom{0} 7 \\ \hline 4 \phantom{0} 7 \phantom{0} 5 \end{array}$$

Answer: 475

932 - 457 becomes

$$\begin{array}{r} 1 \phantom{0} 1 \\ 9 \phantom{0} 3 \phantom{0} 2 \\ - 4 \phantom{0} 5 \phantom{0} 7 \\ \hline 5 \phantom{0} 6 \\ 4 \phantom{0} 7 \phantom{0} 5 \end{array}$$

Answer: 475

## Learning Journey – Number and Place Value

### Autumn unit 6.1 (2 weeks)

I can count forwards or backwards in steps of powers of 10 for any given number up to 10 000 000.

I can recognise the place value of each digit up to 10 000 000.

I can reason about the location of a six-digit number on a number line.

I can reason about the location of a seven-digit number on a number line.

I can round any number up to 10 000 000 to the nearest 10, 100 and 1000.

I can round any number up to 10 000 000 to the nearest 10 000.

I can round any number up to 10 000 000 to the nearest 100 000.

I can round any number up to 10 000 000 to the nearest 1 000 000.

I can solve number and practical problems.

### Autumn unit 6.5 (1 week)

I can read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.

I can round any whole number to a required degree of accuracy.

I can use negative numbers in context, and calculate intervals across zero.

I can read roman numerals to 1000 and recognise years written in Roman numerals.

I can solve number and practical problems.

## Learning Journey – Addition and Subtraction

Autumn unit 6.1 (1 week)	Spring unit 6.7 (2 weeks)	Spring unit 6.10 (1 week)	Summer unit 6.12 (3 weeks)
<p>I can add and subtract numbers mentally with increasingly large numbers.</p> <ul style="list-style-type: none"> <li>• Partitioning</li> <li>• Number bonds</li> <li>• Reordering</li> <li>• Rounding and adjusting</li> <li>• Counting on</li> </ul> <p>I can add whole numbers with more than 4 digits, including using formal written methods.</p> <p>I can subtract whole numbers with more than 4 digits, including using formal written methods.</p> <p>I can solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.</p>	<p>I can use knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>I can use rounding to check answers to calculations and determine levels of accuracy.</p> <p>I can perform mental calculations, including with mixed operations and large numbers.</p> <ul style="list-style-type: none"> <li>• Partitioning</li> <li>• Number bonds</li> <li>• Reordering</li> <li>• Rounding and adjusting</li> <li>• Counting on</li> </ul> <p>I can add and subtract whole numbers with more than 4 digits, including using formal written methods.</p> <p>I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>	<p><i>Repeated in multiplication and division.</i></p> <p>I can perform mental calculations, including with mixed operations and large numbers.</p> <p>I can add and subtract whole numbers with more than 4 digits, including using formal written methods.</p> <p>I can use knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>I can solve problems involving addition, subtraction, multiplication and division.</p>	<p><i>Repeated in multiplication and division.</i></p> <p>I can perform mental calculations, including with mixed operations and large numbers.</p> <p>I can use knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>I can solve problems involving addition, subtraction, multiplication and division.</p>

**Proposed lesson sequence to support development of mathematical concepts**

**Developing fluency and automaticity – ongoing daily practice**

<b>Mastering Key Facts in Key Stage 2</b>	<b>Autumn Ongoing Mental Fluency Practice</b> <ul style="list-style-type: none"> <li>• I can adjust numbers to add efficiently, e.g. <math>329 + 426 = 330 + 425</math></li> <li>• I can round and adjust</li> <li>• I can recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>• I can read roman numerals to 1000.</li> <li>• I can recognise years written in Roman numerals</li> </ul>
<b>Counting Fluency</b>	<ul style="list-style-type: none"> <li>• I can count forwards or backwards in steps of powers of 10 for any given number up to 10 000 000.</li> </ul>
<b>I can...</b>	<b>Mathematical Concepts, Key Skills and Suggested Tasks</b>

**10 Sessions – Number and Place Value**

<p>I can recognise the place value of each digit up to 10 000 000.</p>	<p>As working with digits beyond 1 000 000 is new learning in Year 6, consider spending additional time securing pupils' place value understanding before moving on. Use assessment of pupils' understanding and confidence in recognising the place value of each digit in a five-digit number to determine whether this is appropriate.</p> <p>Pupils need to understand not only the order of the digits, but also the value each digit represents within the whole number. Use concrete and pictorial representations, such as counters and place-value grids, to make the structure of five-digit numbers explicit.</p> <p>Regular opportunities to represent, partition, and discuss numbers in multiple ways will help pupils develop a secure conceptual understanding, which is essential for later learning such as number lines, rounding, and efficient calculation strategies.</p> <p>Pupils should also be encouraged to talk confidently and precisely about place value, for example by:</p> <ul style="list-style-type: none"> <li>• Explaining the value of a digit based on its position (e.g. 860 712: the 6 represents sixty thousand, not six);</li> <li>• Making comparisons between numbers using place-value language (e.g. greater than, less than, nearest hundred-thousand).</li> </ul>
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I can reason about the location of a six-digit number on a number line.

This step revisits Year 5 learning and should be used to support consolidation. Pupils should be secure in identifying and accurately placing numbers up to 1,000,000 on marked number lines across a range of scales. They should also begin to estimate the value or position of a number on an unmarked number line, using proportional reasoning to make increasingly accurate judgements.

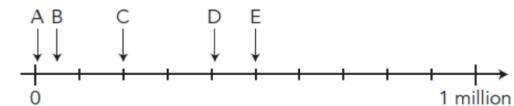
Pupils should be able to identify the multiples of 10,000, 1,000 and 100 that a given number lies between.

**Sentence stems:**

- The previous multiple of 100,000 is \_\_\_\_\_.
- The next multiple of 100,000 is \_\_\_\_\_.

Continue to practise counting forwards and backwards in steps of 100, 1,000 and 10,000 from any given number, up to 1 000 000. This will support pupils' understanding, particularly when bridging across place-value boundaries, for example:

- 59 000, 60 000, 61 000, 62 000
- 18 000, 19 000, 20 000, 21 000...



Write the letter of the arrow that points to the number 50 000

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I can reason about the location of a seven-digit number on a number line.

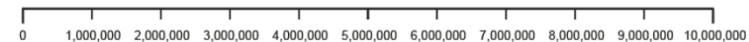
Pupils should be able to identify and place numbers with up to seven digits accurately on marked number lines across a range of scales. They should also be able to estimate the value or position of numbers on unmarked or partially marked number lines, using appropriate proportional reasoning.

Pupils should understand that, when estimating the position of a number with many significant digits on a large-value number line, attention should be given to the leading digits, while smaller place-value digits can be ignored. For example, when estimating the position of 5,192,012 on a number line from 5,100,000 to 5,200,000, it is sufficient to consider only the first four digits.

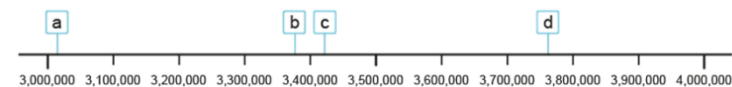
**6NPV-2 Example Assessment Questions**

1. Show roughly where each of these numbers is located on the number line below.

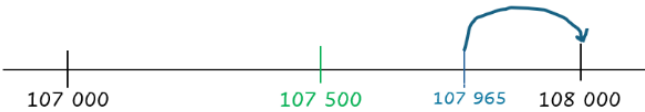

2,783,450      7,000,500      5,250,000      8,192,092      99,000



2. Estimate the values of a, b, c and d.



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<p>I can round any number up to 10 000 000 to the nearest 10, 100 and 1000.</p>	<p>Use assessment of starting points to determine the number of lessons this step will require, as well as the size and range of numbers pupils will be rounding and ensure that this aligns with their security in place-value understanding. It is essential that pupils are confident with the place-value structure of the numbers involved. Where needed, revisit rounding using two-, three- and four-digit numbers before progressing to larger numbers.</p> <p>Begin by ensuring pupils can identify the previous and next multiple of 10, 100 or 1000 for a given number. Represent this visually by drawing a number line and clearly labelling these endpoints. Pupils should then identify and mark the midpoint between the two multiples. From here, they can reason about the position of the number being rounded and decide which multiple it is closer to.</p> <p><b>Sentence stems:</b>  The previous multiple of 10/100/1000 is ____.  The next multiple of 10/100/1000 is ____.  The midpoint is ____.  ____ is closer to ____ than ____  ____ rounded to the nearest 10/100/1000 is ____.</p> <p style="text-align: right;">Round 107 965 to the nearest 1000.</p> 
<p>I can round any number up to 10 000 000 to the nearest 10 000.</p>	<p>Pupils apply their understanding of place value up to 10,000,000, along with their experience of positioning numbers on a number line and rounding, to round larger numbers to the nearest 10,000. This continues to build on their secure understanding of multiples and midpoints.</p> <p>Pupils should be supported to identify the previous and next multiples of 10,000 and to reason about where the given number lies between these two points.</p> <p>Encourage pupils to justify their decisions by referring explicitly to the thousands and hundreds digits, explaining how these determine whether the number is closer to the lower or higher multiple of 10,000. Accurate use of place-value language and clear reasoning at this stage is key to developing confidence with estimation, comparison, and rounding to increasingly larger place values.</p> <p><b>Sentence stems:</b>  The previous multiple of 10 000 is ____.  The next multiple of 10 000 is ____.  The midpoint is ____.  ____ is closer to ____ than ____  ____ rounded to the nearest 10 000 is ____.</p> <p style="text-align: right;">Round 104 965 to the nearest 10 000.</p> 

I can round any number up to 10 000 000 to the nearest 100 000.

Pupils extend their rounding skills to now rounding numbers to the nearest 100,000, continuing to apply the same knowledge and strategies they have already used for smaller place values. Emphasise that while the numbers are larger, the structure of the method remains unchanged.

Ensure pupils are confident identifying the previous and next multiple of 100,000 for a given number. Teachers should model this explicitly, particularly where numbers are close to a midpoint or require bridging across hundred-thousands (for example, moving from 499,000 to 500,000).

Pupils should justify their rounding by referring to the ten-thousands digit, explaining how its value indicates whether the number is closer to the lower or higher multiple of 100,000.

Round 3 437 965 to the nearest 100 000.

**Sentence stems:**

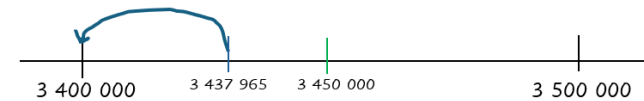
The previous multiple of 100 000 is \_\_\_\_.

The next multiple of 100 000 is \_\_\_\_.

The midpoint is \_\_\_\_.

\_\_\_\_ is closer to \_\_\_\_ than \_\_\_\_.

\_\_\_\_ rounded to the nearest 100 000 is \_\_\_\_.



I can round any number up to 10 000 000 to the nearest 1 000 000.

Once secure with the above skills, pupils apply these strategies to round any number to the nearest 1 000 000.

Pupils should justify their rounding decisions by referring to the hundred-thousands digit, explaining how its value determines whether the number is closer to the lower or higher multiple of 1 000 000.

Round 3 437 965 to the nearest 1 000 000.

**Sentence stems:**

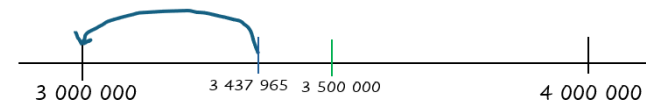
The previous multiple of 1 000 000 is \_\_\_\_.

The next multiple of 1 000 000 is \_\_\_\_.

The midpoint is \_\_\_\_.

\_\_\_\_ is closer to \_\_\_\_ than \_\_\_\_.

\_\_\_\_ rounded to the nearest 1 000 000 is \_\_\_\_.



I can solve number and practical problems.

Encourage pupils to solve problems that apply the skills developed within this unit. The purpose of this step is not to provide an increasing quantity of problems for pupils complete, but to improve the quality of their problem-solving behaviours. Select routine and non-routine problems that allow metacognitive processes to be modelled. This approach shifts attention away from simply finding an answer and towards understanding the pathway through a problem: identifying relevant information, recognising structure, selecting appropriate operations, and justifying methods. By deliberately choosing tasks that expose underlying structure, pupils develop transferable strategies that can be applied across a wide range of contexts. This supports deeper mathematical thinking, stronger metacognition, and greater confidence when approaching unfamiliar problems.

**Routine problem:**

3,576,219

Which digit is in the **ten thousands** place?

Round 3,576,219 to the **nearest million**.

**Deepen:**

- Convince me your answer is correct.
- What if the number was 3,576,999. Would the rounded answer change? Why?
- What is the smallest change you could make so the rounded value does change?
- Always/sometimes/never: a number with a 5 in the hundred-thousands place rounds up to the next million. Explain.

**Routine problem:**

Write a **whole number** in each box to make the statements correct.

One has been done for you.

18

rounded to the nearest ten is 20

rounded to the nearest thousand is 4,000

rounded to the nearest ten thousand is 820,000

**Deepen:**

- How did you choose your number?
- Which box was easiest? Why?
- What is the greatest number you could choose and still get the same rounded result?
- What is the smallest number you could choose and still get the same rounded result?
- Without writing them all down, how many numbers would round to 4,000?
- Always/sometimes/never: a number that rounds to 4,000 must start with a 3. Explain.

**Non-routine problem:**

The **difference** between two numbers is 2

When each number is rounded to the nearest hundred, the difference between them is 100

Write what the two numbers could be.

and

**Deepen:**

- Where must your numbers sit on a number line?
- What is the smallest possible pair that could work?
- What is the largest possible pair?
- How many different pairs do you think are possible?
- What if both numbers were 1 larger – would the statements still be true?

## 5 sessions – Addition and Subtraction

I can add and subtract numbers mentally with increasingly large numbers.

Pupils have been practising the mental methods listed below throughout their Key Stage 2 journey. These skills are fundamental in developing automaticity and efficiency, and they are crucial in building confidence and stamina for the end of Key Stage 2 SATs tests. Time should be spent explicitly practising each skill before encouraging pupils to select the strategy they find most efficient. There is no single 'correct' method, so the focus should be on sharing and discussing strategies rather than solely on arriving at correct answers.

These skills can be taught and embedded within this learning journey or delivered through explicit arithmetic practice. Pupils should also regularly calculate with smaller numbers, including two-digit and three-digit numbers, to ensure security in Lower Key Stage 2 mental strategies before applying them to larger values. The strategies introduced from Year 2 to Year 5 are detailed below to support consistency and progression.

### Partitioning – adding

Calculations should be carefully selected so that no regrouping is required. To support understanding of magnitude and place value, pupils should initially use dienes to represent the numbers involved.

Where pupils demonstrate secure place-value knowledge, place-value counters may be used to support more efficient representation and mental processing.

#### For example:

$$2235 + 1054 = ?$$

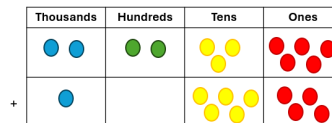
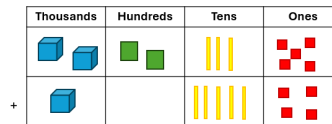
$$2 \text{ thousands} + 1 \text{ thousand} = 3 \text{ thousands}$$

$$2 \text{ hundreds} + 0 \text{ hundreds} = 2 \text{ hundreds}$$

$$3 \text{ tens} + 5 \text{ tens} = 8 \text{ tens}$$

$$5 \text{ ones} + 4 \text{ ones} = 9 \text{ ones}$$

$$\mathbf{3000 + 200 + 80 + 9 = 3289}$$



### Partitioning – subtracting

Pupils should practice and apply the skills of subtracting numbers of up to four digits using partitioning.

Calculations at this stage should be carefully selected so that no exchanging is required.

#### For example:

$$8635 - 4503 =$$

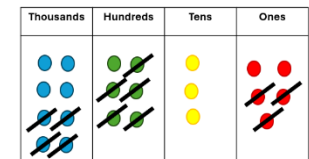
$$8 \text{ thousands} - 4 \text{ thousands} = 4 \text{ thousands}$$

$$6 \text{ hundreds} - 5 \text{ hundreds} = 1 \text{ hundred}$$

$$3 \text{ tens} - 0 \text{ tens} = 3 \text{ tens}$$

$$5 \text{ ones} - 3 \text{ ones} = 2 \text{ ones}$$

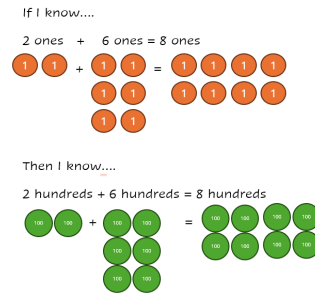
$$\mathbf{4000 + 100 + 30 + 2 = 4132}$$



### Number bonds- adding

If pupils are secure with the additive structure of  $2 + 6 = 8$ , they do not need to recalculate  $20 + 60$  or  $200 + 600$  from scratch. Pupils should recognise that the numbers are 10 times, 100 times, and 1000 times bigger, so the answer will scale in the same way.

Encourage and model language such as “each number is 10 times/100 times/1000 times bigger”. Watch out for pupils who say, “you just add a zero”.



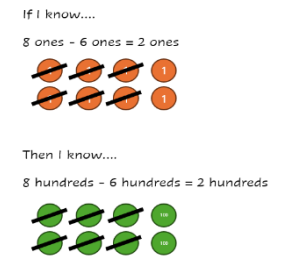
### Number bonds – subtracting

Similarly to addition, subtraction relies on known number bonds within and to 10, place value understanding and scaling not recalculating.

For example:

If I know  $8 \text{ ones} - 6 \text{ ones} = 2 \text{ ones}$ , then I know that  $8 \text{ hundreds} - 6 \text{ hundreds} = 2 \text{ hundreds}$

Encourage pupils to say “the numbers are 10/100/1000 times bigger”, “I am subtracting tens instead of ones” rather than “you just take a zero off”.



### Reordering - adding

Reordering is a mental calculation strategy where numbers in addition or subtraction are rearranged or adjusted to make the calculation easier, without changing the final result.

$$1998 + 2005 =$$

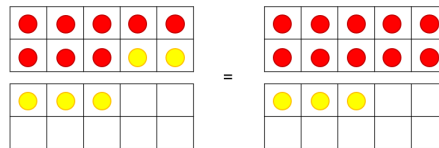
Reorder by adjusting:

- Add 2 to 1998 = 2000
- Subtract 2 from 2005 = 2003

$$1998 + 2005 = 2000 + 2003$$

2000 + 2003 can be calculated mentally using partitioning

Using smaller numbers alongside ten-frames can support pupils in seeing how value is redistributed to make a calculation more efficient, for example:  $8 + 5 = 10 + 3$



### Reordering - subtracting

When subtracting, both numbers are adjusted by the same amount so that the difference stays the same, but the calculation becomes easier.

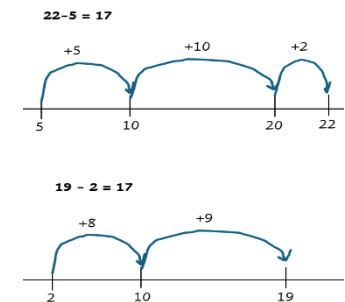
$$1002 - 375 =$$

- Subtract 3 from 1002 = 999
- Subtract 3 from 375 = 372

$$1002 - 375 = 999 - 372$$

999 – 372 can be calculated mentally using partitioning.

Using smaller numbers and number lines to demonstrate that these calculations have the same difference can help pupils to visualise the strategy, for example:  $22 - 5 = 19 - 2$

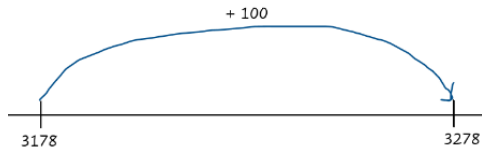


### Rounding and adjusting – adding

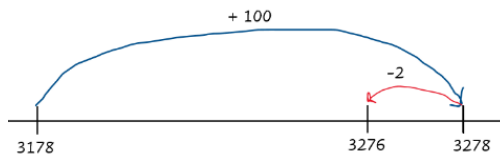
For this strategy, one number is rounded to create a simpler calculation, and the answer is then adjusted accordingly. Although the examples below continue to use four-digit numbers, starting with smaller numbers may help build confidence in the strategy, before progressing to larger numbers of up to six digits once pupils are secure.

$$3178 + 98 =$$

I will round 98 to the nearest 100 by adding 2.  
 $3178 + 100 = 3278$ .



I will then adjust by subtracting 2.  
 $3278 - 2 = 3276$



$$3178 + 98 = 3276$$

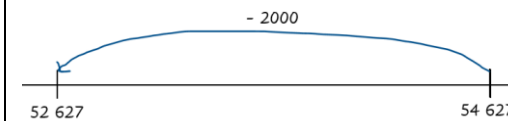
### Rounding and adjusting – subtracting

Rounding and adjusting can also be applied effectively to subtraction by making one number easier to subtract, then compensating to maintain accuracy.

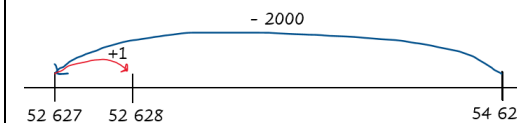
Some pupils may be unsure about the direction of adjustment after rounding. Reinforce that when a number in a subtraction is rounded up, too much has been subtracted, so the adjustment must be to add back. Continue to use number lines or concrete resources where necessary to help pupils secure this understanding

$$54\ 627 - 1999 =$$

I will round 1999 to the nearest 1000 by adding 1.  
 $54\ 627 - 2000 = 52\ 627$



As I subtracted 1 too many, I must adjust by adding 1.  
 $52\ 627 + 1 = 52\ 628$

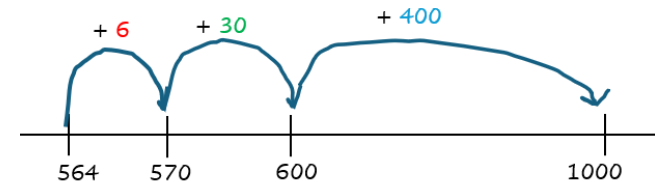


$$54\ 627 - 1999 = 52\ 628$$

### Counting on

Pupils should be able to use their knowledge of number pairs that make 1000 to solve problems efficiently. These are called complements to 1000. When pupils are finding the complement to 1000 for numbers such as 564, encourage them to make 10 first, and then 100, before 1000: e.g.  $564 + ? = 1000$

- $564 + 6 = 570$
- $570 + 30 = 600$
- $600 + 400 = 1000$
- $6 + 30 + 400 = 436$
- So,  $564 + 436 = 1000$



Watch out for pupils who might start adding from the hundreds digit first.

I can add whole numbers with more than 4 digits, including using formal written methods.

Pupils continue to consolidate their formal written addition of whole numbers with more than 4 digits. This step may need to be broken down further depending on the starting points of the cohort. Use assessment to gauge pupils' confidence with:

- Adding where no regrouping is required
- Adding with one regroup
- Adding with two or more regroup

There may be some pupils who benefit from seeing this as the expanded column method alongside concrete resources such as a dienes or place value counters. Further detail around progression of skills can be found in unit 3.10

Ensure pupils are adding or subtracting starting from the ones column and using the language of "3 ones plus 5 ones is equal to 8 ones, 1 ten plus 8 tens is equal to 9 tens and 5 hundreds plus 2 hundreds is equal to 7 hundreds" etc.

When working with larger numbers, continue to provide opportunities for pupils to reason about the structure of the calculation. Ask pupils to explain why regrouping is necessary, which place value is affected, and how the regrouping changes the value of the number. This supports deeper place-value understanding rather than reliance on a procedural method.

It is important that pupils learn to recognise when a calculation can be solved more efficiently using a mental strategy, such as partitioning, particularly when no regrouping is required. Encourage pupils to explain their choice of method and justify why it is efficient, supporting the development of flexible and strategic thinking as numbers increase in size.

Throughout this step, reinforce the relationship between addition and subtraction, and encourage pupils to check the accuracy of their calculations using the inverse operation, especially when working with larger, more complex numbers.

Pupils who have secured procedural fluency should be supported to deepen their learning through application, reasoning, and problem-solving.

I can subtract whole numbers with more than 4 digits, including using formal written methods.

Similarly to addition, this step may need to be broken down into smaller, manageable stages depending on the starting points of the cohort. Use assessment to gauge pupils' confidence with:

- Subtracting where no exchange is required
- Subtracting with one exchange
- Subtracting with two or more exchanges

Alongside procedural accuracy, support pupils to identify the whole and the parts within a subtraction calculation. Pupils should be able to articulate which number represents the whole and how the subtracted amount represents a part of that whole. This understanding supports both written and mental strategies and helps pupils reason about the size of the answer before calculating.

Reinforce the relationship between addition and subtraction throughout, and encourage pupils to check the accuracy of their answers using the inverse operation. This reinforces understanding of the whole–part relationship and supports error detection, particularly when working with larger numbers.

It is important that pupils learn to recognise when a calculation can be solved more efficiently using a mental strategy, such as finding the difference using complements to 10, 100, or 1,000, or through partitioning, particularly where no exchanging is required. Encourage pupils to explain their choice of method and justify why it is efficient, supporting the development of flexible, strategic, and reflective mathematical thinking.

I can solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.

This step is designed to build on pupils' existing calculation strategies, using a range of questions and contexts to further develop problem-solving skills. The focus is not on increasing the number of problems pupils complete, but on improving the depth of their thinking, reasoning, and decision-making, particularly when approaching unfamiliar or more complex tasks.

Similar question types can be used in this step to reinforce and extend these problem-solving approaches, allowing pupils to apply known strategies with increasing independence, flexibility, and confidence.

**Starting Skills**  
Fill in the missing information for each bar model.

?		
500	300	200

1100		
500	?	200

1200		
?	500	200

**Deepen**  
Olivia is travelling from Paris to Munich. If she has completed 3/5 of the section from Metz to Stuttgart, how many kilometres has she travelled altogether? How many kilometres are left to travel?

**Addition and Subtraction**

2025 Key Stage 2: Paper 2 Reasoning, Question 11

**11** The total distance from Paris to Munich by road is 860 kilometres. There are three sections. The distances for the first two sections are shown.

How many kilometres is the last section from Stuttgart to Munich?

**Sentence Stems**  
• If the whole is \_\_\_, one part is \_\_\_, and one part is \_\_\_, then the other part is \_\_\_.

**What strategy can you use to help you?**

- Intelligent Practice**
1. What if the distance between Paris and Metz was 341km?
  2. What if the distance between Paris and Metz was 431km?
  3. What if the distance between Metz and Stuttgart was 305km?
  4. What if the total distance from Paris to Munich by road is 840km?
  5. What if the total distance from Paris to Munich by road is 760km?

**HIAS Resources to support:**

- Reasoning and Intelligent Practice Tasks: [Reasoning and Intelligent Practice Tasks](#)
- Faded Scaffolds and Intelligent Practice: [Faded Scaffolds and Intelligent Practice](#)
- Paired Examples: [Paired Examples](#)
- Entry and Exit tickets: [Entry and Exit Tickets](#)
- Interleaving, Recall and Retrieval: [Interleaving, Recall and Retrieval \(hants.gov.uk\)](#)
- Connect4Maths: [Connect4Maths - Primary](#)
- Moderation Documents: [Moderation Documents](#)
- KS1 Key Facts: [Key Stage 1 Key Facts Document](#)
- Mastering Times Tables: [Mastering Times Tables](#)

**NCETM Resources to support:**

- Exemplification of ready -to -progress criteria (RTPS): [Exemplification of ready-to-progress criteria | NCETM](#)
- NCETM Professional Development materials spine 1: [Number, Addition and Subtraction | NCETM](#) ;
- The NCETM Mastery Task booklets can be used as a source of tasks to support end of year teacher assessment for both EXS and GDS [Teaching for Mastery Booklets Yr1-6](#)

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