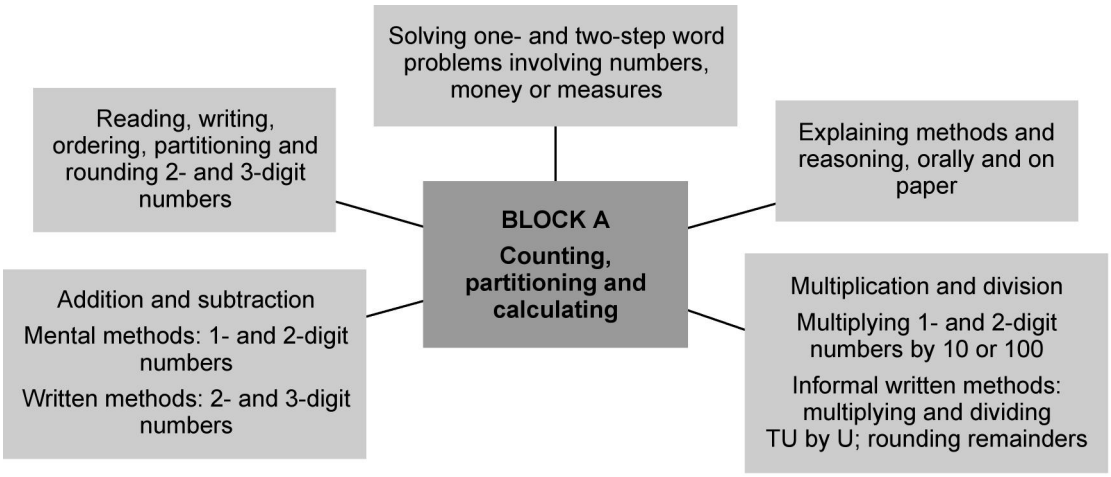
Year 3: Block A — Three 2-week units

Counting, partitioning and calculating



Objectives End-of-year expectations (key objectives) are highlighted	Units		
	1	2	3
• Solve one-step and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations			✓
• Describe and explain methods, choices and solutions to puzzles and problems, orally and in writing, using pictures and diagrams	✓	✓	
• Read, write and order whole numbers to at least 1000 and position them on a number line; count on from and back to zero in single-digit steps or multiples of 10	✓		
• Partition three-digit numbers into multiples of 100, 10 and 1 in different ways	✓	✓	
• Round two-digit or three-digit numbers to the nearest 10 or 100 and give estimates for their sums and differences		✓	✓
• Derive and recall all addition and subtraction facts for each number to 20, sums and differences of multiples of 10 and number pairs that total 100	✓	✓	
• Add or subtract mentally combinations of one-digit and two-digit numbers	✓	✓	✓
• Develop and use written methods to record, support or explain addition and subtraction of two-digit and three-digit numbers			✓
• Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000		✓	✓
• Multiply one-digit and two-digit numbers by 10 or 100, and describe the effect		✓	
• Use practical and informal written methods to multiply and divide two-digit numbers (e.g. 13 × 3, 50 ÷ 4); round remainders up or down, depending on the context			✓

Speaking and listening objectives for the block

Objectives	Units		
	1	2	3
• Explain a process or present information, ensuring items are clearly sequenced, relevant details are included and accounts ended effectively	✓		
• Follow up others' points and show whether they agree or disagree in a whole-class discussion		✓	
• Actively include and respond to all members of the group			✓

Opportunities to apply mathematics in science

Activities		Units		
		1	2	3
3f	Light and shadows: Measure and put in order lengths of shadows at different times of the day. Calculate differences between them.	✓		
3b	Helping plants grow well: When comparing plants grown in the dark and light, use mental subtraction to calculate how many more leaves grew on one plant than another.		✓	
3c	Characteristics of materials: Calculate the difference between the stretched and unstretched length of each pair of tights as a measure of their stretchiness.			✓

Key aspects of learning: focus for the block

Enquiry	**Problem solving**	**Reasoning**	Creative thinking
Information processing	Evaluation	Self-awareness	Managing feeling
Social skills	**Communication**	Motivation	Empathy

Vocabulary

problem, solution, calculate, calculation, answer, method, explain, reasoning, pattern, predict

place value, partition, digit, ones, tens, hundreds, one-digit number, two-digit number, three-digit number, compare, order, equals (=)

count on/back, add, subtract, multiply, times, divide, share, group, sum, total, difference, plus, minus

pound (£), penny/pence (p), note, coin, units of measurement and their abbreviations

Building on previous learning

Check that children can already:

- talk about their methods and solutions to one-step problems, identifying and recording the number sentences involved
- read, write, partition and order two-digit numbers, explaining what each digit represents
- recall all addition and subtraction facts for each number to at least 10, all pairs with totals to 20 and all pairs of multiples of 10 with totals up to 100
- add or subtract mentally pairs of one-digit numbers
- recall multiplication and division facts for the 2, 5 and 10 times-tables

Unit 3A1 2 weeks

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Describe and explain methods, choices and solutions to puzzles and problems, orally and in writing, using pictures and diagrams *I can explain how I solve problems*	Tell me how you solved this problem. Why did you decide to subtract these numbers? Did you do that calculation in your head? Tell me how you did it. Show me how to do that calculation on an empty number line. Suppose the problem had these numbers. Would that change the way you would solve the problem?
• Read, write and order whole numbers to at least 1000 and position them on a number line; count on from and back to zero in single-digit steps or multiples of 10 *I can read and write numbers to 1000 and put them in order*	Here is a number: 472. Read it to me. Write another three-digit number and read it to me. Is it bigger than or smaller than 472? Draw an empty number line and mark the numbers 456, 465 and 516 on it. Tell me where to put these numbers on the number line: 581, 418, 560, 509 and 495. How do you find the smallest number/the largest number? What clues do you use?
• Partition three-digit numbers into multiples of 100, 10 and 1 in different ways *I can split a number into hundreds, tens and ones* *I can explain how the digits in a number change when I count in 10s or 100s*	Here are some ways of partitioning 346. 346 = 300 + 46 346 = 300 + 40 + 6 346 = 300 + 30 + 16 346 = 200 + 120 + 26 Write four more ways of partitioning 346. A number is partitioned like this: 200 + 50 + 13. What is the number? Show me how you to partition it in other ways. How could you partition 408? Show me another way to do it. Use these digit cards. Make the number 346 for me. What does the 3 represent? And the 4? [Remove the 6.] What number do you have now? What does the 3 represent now? And the 4?
• Derive and recall all addition and subtraction facts for each number to 20, sums and differences of multiples of 10 and number pairs that total 100 *I know the sum and difference of any pair of numbers to 20* *I can add and subtract multiples of 10 or 100 in my head*	Look at this number sentence: ○ + □ = 19. What could the two missing numbers be? What else? Can you tell me all the pairs of numbers that make 19? How do you know you have got them all? What is 13 – 8? What other subtractions make 5? Add or subtract these numbers. Tell me how you did it. 30 + 80 70 – 50 800 + 500 900 – 400 38 + 40 80 – 27
• Add or subtract mentally combinations of one-digit and two-digit numbers *I can add and subtract one-digit and two-digit numbers in my head (e.g. 62 + 7, 7 + 45, 48 – 6, 60 – 8)*	Look at this calculation: □5 + 8 = □□. Write a digit in each box so that the calculation is correct. How else can you do it? What patterns do you notice? Repeat with □2 – 7 = □□. What is the largest multiple of 10 you can add to 38 if your answer must be smaller than 100?
• Explain a process or present information, ensuring items are clearly sequenced, relevant details are included and accounts ended effectively *I can explain how I add and subtract numbers in my head* *I can explain how to put three-digit numbers in order*	Explain the relationship between adding 3 to 4 and adding 30 to 40 and 300 to 400. Explain how you can use a number line to add 37 to 56. Now show me how you could use a 100-square to add 37 to 56. Repeat for subtraction. Explain how you would put this set of numbers in order: 162 216 126 621 261

Learning overview

Children **read and write whole numbers** to at least 1000 in figures and words. They identify the **position** of these numbers on a **number line** using their understanding of **place value** to locate the hundreds and tens numbers and to explain their relationships. They know the ordinal numbers to at least 100 and use them in practical contexts, such as describing the position of a team in a league table or the order of quantities or numbers according to size.

Children **count on and back** in steps of 1, 2, 3, 4, 5, 6 and 10 from zero and then from any given number. They use these sequences to count on or back in steps of 10, 20, 30, 40, 50, 60 or 100. They use their counting skills to answer questions such as:

If I keep subtracting 6 from 49, what is the smallest number I will get?

They recognise the relationships between counting in: 2s and 4s; 3s and 6s; 5s and 10s. Children count a large collection of objects by **grouping** them, for example into fives, tens or twenties. They recognise how this helps them to find the total number of objects systematically and accurately and gives a method to use to check the result.

Children **partition** two- and three-digit numbers and use their knowledge of place value to compare and order numbers with up to three digits. They use the vocabulary and symbols associated with **comparing and ordering** of numbers. They compare two 3-digit numbers, such as 456 and 465, and read and record that 456 < 465 or 465 > 456. They **give reasons** for their choice. Children answer questions such as: *What multiples of 10 lie between 256 and 283?* In order to identify missing numbers, they **pose questions** of their own such as:

Does it lie between 50 and 80?

If I count in threes from zero, will it be in my sequence of numbers?

Children say and record numbers that are 1, 10 or 100 more than or less than any number to 1000. They use their knowledge and counting strategies to **add or subtract multiples of 10 or 100**. For example, they work out that 167 minus 30 is 167 by counting back in tens from 167 ('157, 147, 137'), keeping track of the count by recording jumps on a number line. They answer **one- and two-step word problems**, such as: *If you add two 20p coins to £1.35, how much money is that altogether?* They use **notes and diagrams**, including number lines, to support and explain their methods.

Children locate and position **multiples of 10 or 100** on a number line and recognise the relative position of other numbers. They use their knowledge of place value to establish that 374 is closer to 400 than 300 and closer to 370 than 380. They **add or subtract mentally one-digit numbers to or from two-digit numbers**, bridging through a multiple of 10 where appropriate. For example, they calculate 72 – 8 by subtracting 2 to give 70 and then subtracting the remaining 6, using a number line to record the steps if necessary. Children use counting on when adding 5 to 36 or counting back when subtracting 5 from 39.

Children **solve problems** involving counting such as:

How many 5p coins would be needed to pay for an item costing 37p?

How many 3p and 4p stamps might we use for a 19p letter? And a 29p letter?

They also solve n**umber puzzles**, such as:

Complete each of these number sentences in as many different ways as possible:
□5 + 8 = □□, □2 – 7 = □□.

Children **organise their written responses** to problems and puzzles in a **systematic way**, for example in a list or table. This helps them to recognise and continue patterns, and to reason that all solutions have been found. They talk about their methods and compare solutions. They **explain** how they organised their work to find all possibilities.

Unit 3A2 2 weeks

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Describe and explain methods, choices and solutions to puzzles and problems, orally and in writing, using pictures and diagrams *I can explain how I solve problems*	Tell me how you solved this problem. Did you make any notes or drawings to help you? Can you describe them to me? Show me how to solve this problem using practical objects. What is the cost of 12 stamps at 5p each? Draw me a picture to show how to solve the problem. Why is this a good mental method for adding 19? What is the difference between adding 19 and subtracting 19 using this method? Show me why this is, using a 100-square.
• Partition three-digit numbers into multiples of 100, 10 and 1 in different ways *I can split a number into hundreds, tens and ones* *I can explain how the digits in a number change when I count in 10s or 100s*	Start at 93 and count back in tens. What will be the smallest number that you reach on a 100-square? Will 54 be one of the numbers you would say? Why not? What do you look for when finding a number 100 less than (or 100 more than) a given number? Count on in tens from 312. Which digits change? Why does the ones (units) digit not change? When does the hundreds digit change, and what happens to the tens digit in this case? What happens when you count back? If we count in 100s from 1, what is the pattern? Is this the same or different when we count from 11 or 111?
• Round two-digit or three-digit numbers to the nearest 10 or 100 and give estimates for their sums and differences *I can round numbers to the nearest 10 or 100 and estimate a sum or difference*	Why does 76 become 80 when it is rounded to the nearest 10? Why does 249 become 200 when rounded to the nearest 100? Round 249, 243 and 245 to the nearest 10. Explain why you decided to round 249 and 245 up to 250, and 243 down to 240. The answer to 44 + 38 is less than 100. Give me a better estimate. How did you do it? Why is 38 + 24 approximately 60? Why is 51 – 27 approximately 20?
• Derive and recall all addition and subtraction facts for each number to 20, sums and differences of multiples of 10 and number pairs that total 100 *I know the sum and difference of any pair of numbers to 20* *I can add and subtract multiples of 10 or 100 in my head* *I know number pairs that sum to 100*	What is 3 + 4, 30 + 40 and 300 + 400? What is 8 – 5, 80 – 50 and 800 – 500? How do you know? Two numbers add up to 20. They have a difference of 2. What are the numbers? What must you add to 62p to make £1? I cut 53 cm off 1 metre of string. How long is the piece that is left?
• Add or subtract mentally combinations of one-digit and two-digit numbers *I can add or subtract one-digit and two-digit numbers in my head (e.g. 62 + 7, 7 + 45, 48 – 6, 60 – 8)*	What is 46 + 8? Explain how you did it. How would you add 18 to 46? What is 73 – 7? Explain how you did it. How would you subtract 17 from 73? Think of two numbers that have a difference of 9. Write a number sentence to show this. Now find and record some more pairs of numbers with a difference of 9. What is 58 + 30? What is 58 + 29? How do you know? What is 58 – 30? What is 58 – 29? How did you work these out? Show me on an empty number line.
• Multiply one-digit and two-digit numbers by 10 or 100, and describe the effect *I can multiply by 10 or 100 and say what happens to the number I multiply*	Multiply 4 by 10. Multiply the answer by 10. What has happened to the value of the digit 4? Can you explain what happens to the 4 when we multiply 4 by 100? What number is 10 times more than 70 tens? What is 10 times bigger than 23?

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000 *I know my tables for 2, 3, 4, 5, 6 and 10*	Count on in fours from zero. Now count back to zero. This time, count on seven fours from zero. Show me seven hops of four from zero on the number line. How can you work out the 4 times-table from the 2 times-table? The 6 times-table from the 3 times-table? What is the relationship between 4 × 7 = 28, 6 × 7 = 42 and 10 × 7 = 70?
• Follow up others' points and show whether they agree or disagree in a whole-class discussion *In a discussion I can share my views with others in the class and follow up their points*	Is this calculation correct? John thinks that it is wrong. Do you agree or disagree? Why do you think so? Mary has just told us how she subtracted 39 from 76. Use Mary's method to subtract 59 from 92. What diagram did you draw to help you to solve the problem? Did anyone use a different diagram?

Learning overview

Children continue to **count on or back** from any number. They know what each digit in a three-digit number is worth and recognise and explain the effect on the digits as they count in 10s or 100s and the impact of crossing boundaries when moving between 10s and 100s, and between 100s and 1000s. Children use their knowledge of the relationship of numbers on a number line to **round** any two-digit number to the nearest 10 and any three-digit number to the nearest 100.

Children use the vocabulary of estimation and approximation. They **estimate** the number of items in a container with up to 100 items, for example saying that the number of items is **about** 35 or that there are **between** 30 and 40. They use rounding to work out, for example, that to buy four 22p oranges the cost will be a bit more than 80p and count up in 20s and 2s to get the answer.

Children recognise the **significance of each digit** when adding and subtracting. They continue to add and subtract **multiples of 10 and 100** and extend this to adding and subtracting **near-multiples**. They work out, for example, 632 + 200 and 632 – 200, and then use their answers to find 632 + 199 and 632 – 201, making notes or identifying the steps on an empty number line.

Children **derive sequences** in calculations such as 32 – 1 = 31, 32 – 2 = 30, 32 – 3 = 29, … and corresponding sequences such as 320 – 10 = 310, 320 – 20 = 300, 320 – 30 = 290, … They **describe the patterns** they observe and apply them to other sequences.

Children understand that when a one- or two digit-number is **multiplied by 10** the digits move one place to the left and that doing this twice is equivalent to multiplying by 100. Children begin to multiply a one-digit number by a multiple of 10, for example working out 7 × 50 by finding 7 × 5 then multiplying the answer by 10. They use their knowledge of inverse operations to work out, for example, 350 ÷ 50 and 350 ÷ 7.

Children **partition** two-digit numbers in different ways; for example, they recognise that 75 can be partitioned into 70 + 5 or 60 + 15. They use partitioning flexibly to support calculation strategies, for example partitioning 75 into 60 + 15 in order to subtract 28 by subtracting 20 from 60 and 8 from 15. They solve problem involving partitioning, such as:

> *If two people share £38 and one person gets £10 more than the other, how much do they each get?*

They use diagrams to help them solve these problems and record their solutions.

Children understand the term **difference**. They appreciate that *Find the difference between 38 and 52* is equivalent to the question *How much greater is 52 than 38?* and relate these to the subtraction 52 – 38. They find the difference by counting up from 38 to 52. Children use partitioning to add or subtract mentally one- and two-digit numbers. For example, they calculate 37 + 26 by using

37 + 20 + 6 and 37 – 26 by working out 37 – 20 – 6, recording the steps on a number line. Children begin to check their addition and subtraction with a calculation that uses the **inverse operation**. They know that subtracting 18 from 34 to get 16 can be checked by adding 18 to 16.

Children **solve puzzles and problems** that involve all four operations. They **use their knowledge** of multiplication and division to find the cost of boxes of six items where each item costs 40p or the number of boxes of four items that can be filled from 30 items. They develop strategies to solve 'think of a number' problems that involve halving and doubling. They explore numbers, looking for pairs that total 30 and have a difference of 12, by **listing** possible pairs and **testing** to see if the second criterion holds. Children discuss and explain their methods orally and begin to record using pictures or diagrams. They follow the explanations of others, for example how they solved 'think of a number' problems. They compare different approaches and suggest possible modifications.

Unit 3A3 2 weeks

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Solve one-step and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations *I can solve a problem by writing down what calculation I should do*	Tell me how to start to solve this problem. I think of a number and add 12 to it. My total is 38. What is my number? Show me how to solve the problem using an empty number line, or a 100-square. Write down the calculation that you would do. Show me how to solve this problem using an empty number line. Ling got into the swimming pool at 10:30. She got out at 11:20. How long was she in the pool? What is the answer to 20 ÷ 5? Can you make up a problem that means you need to work out 20 ÷ 5 to solve it? Write down the calculations that you need to do to solve this problem. Three buns cost 24 pence. What do two buns cost?
• Round two-digit or three-digit numbers to the nearest 10 or 100 and give estimates for their sums and differences *I can use rounding to estimate a sum or difference*	There are enough pencils in this box for each child in the class to have one each. Approximately how many pencils is that? How many pencils would you estimate we would need for 10 classes? To the nearest 100, there are 400 children in a school. How many children could there be in the school? Explain your answer. Could there be 450 children? Could there be fewer than 350 children? Estimate the answers to these calculations: 167 + 86, 409 – 177. How did you work out your estimate?
• Add or subtract mentally combinations of one-digit and two-digit numbers *I can find the sum of or difference between one-digit and two-digit numbers in my head (e.g. 7 + 45, 45 – 7)* *I can add several one-digit numbers in my head*	Here are some calculations: 52 – 9, 8 + 74, 71 – 68, 4 + 5 + 6 – 8. What strategies did you use to work out the answers? Could you use a different method? How could you check that your answer is correct? Do this calculation in your head: 12 – 11 + 10 – 9. How did you do it? Use this method to work out 13 – 12 + 11 – 10. Now work out 22 – 21 + 20 – 9 and 82 – 81 + 80 – 79. Write down another calculation that you could work out quickly in this way.
• Develop and use written methods to record, support or explain addition and subtraction of two-digit and three-digit numbers *I can add and subtract numbers using an empty number line* *I can add and subtract numbers by writing one number under the other and using partitioning*	Show me how you use counting up on an empty number line to work out 236 + 75 and 236 – 75. Which number did you start with? What are the important landmark numbers to use? [multiples of 10 or 100] What are the sizes of the steps? Can you show me another way you could do this on the number line? Here are two numbers: 654 and 148. Partition 148. What is the answer when you add 8 units to 654? Now add the 40. Now add the 100. How will you record this? What is the answer? Show me this method for two other numbers. Here are two numbers, 514 and 136. Partition 136. What is the answer when you subtract the 6 units from 514? How will you record this? Now subtract the 30. Now subtract the 100. What is the answer? Can you use this method to subtract 263 from 514?

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000 *I can use my tables for 2, 3, 4, 5, 6 and 10 to work out division facts*	Count back in fours from 32 to 0. How many fours did you count? Show me hops of 4 back from 32 on the number line. What is the missing number in this statement: □ × 5 = 35? How do you know? Look at this statement: ○ × □ = 35. What could the missing numbers be? I know that 4 × 7 = 28, so what is 28 ÷ 4? Can you tell me some numbers that will divide exactly by 2? By 5? By 10? How do you know? Which of these numbers are multiples of 2? How do you know? 18 25 40 65 120 375 468 700 Which are multiples of 5? Multiples of 10? How do you know?
• Use practical and informal written methods to multiply and divide two-digit numbers (e.g. 13 × 3, 50 ÷ 4); round remainders up or down, depending on the context *I can use the tables facts that I know to work out division facts* *I can multiply or divide a two-digit number by a one-digit number* *If there is a remainder when I divide, I can work out whether to round the answer up or down*	What is 4 × 2? What is 10 × 2? How could we use these facts to work out 14 × 2? Tell me two multiplication facts we could use to work out 16 × 2. What is the answer? What is 20 ÷ 2? What is 6 ÷ 2? How could we use these facts to work out 26 ÷ 2? Tell me two division facts we could use to work out 28 ÷ 2. What is the answer? What is 70 ÷ 5? Here are 72 cubes. Put them into groups of five. How many groups have you made? How many are left over? If you put the 72 cubes into boxes that hold five cubes, how many boxes would you need? Explain why. If you put the 72 cubes in rows of five, how many rows could you make? Explain why.
• Actively include and respond to all members of the group *I can explain my solutions and methods to everyone in a group*	What do you think of Asif's method of doing that calculation? Is it quicker or slower than your method? Is it easier or more difficult than your method? Why? Tell everyone about the method you used. Explain to the group why you chose that method to use.

Learning overview

Children consolidate their **counting on and back** in steps of 2, 3, 4, 5, 6 and 10. They recognise when the numbers in a counting sequence are **odd or even**. For example, counting in steps of 4 from 3 will generate odd numbers only while counting in steps of 3 from 4 the numbers alternate between odd and even. Children count in steps of 2-digit numbers such as in 12s from 3, using a 10 and 2 count to generate **3**, 13, **15**, 25, **27**, 37, **39**, 49, **51**, … alternately whispering quietly and shouting aloud the numbers involved.

Children solve problems and puzzles involving all four operations. They **identify relevant information** and select the appropriate operations in order to solve word problems such as:

There are 12 stamps in a sheet. Each stamp costs 28p. I buy a quarter of the sheet. How many stamps is this?

I pour out 180 ml and then 270 ml from a one-litre bottle of squash. How much is left?

Children use counting strategies and partitioning to add and subtract combinations of one- and two-digit numbers. They **add two-digit numbers** by partitioning one or both of the numbers. For example, they work out 58 + 74 by partitioning 58 into 50 and 8 then adding 50 and 8 on to the 74. Children use a similar strategy for subtraction, for example working out 94 – 58 or 294 – 58 by partitioning the 58 and subtracting 50 then 8. They use counting-up strategies where appropriate, as in 124 – 68 where they count up from 68 to 70 to 100 to 124, recording and adding the steps 2, 30

and 24. Children use a number line to **note the steps** and to explain how they did the calculation. Children also **subtract by counting on** from the smaller to the larger number in their heads when the difference is small, as in 305 – 297, making notes to support calculation.

Children develop their use of the empty number line to support their calculations. They **begin to record vertically addition and subtraction calculations** that cannot be easily done mentally. They partition one of the numbers and add or subtract the units, tens and hundreds separately:

$$\begin{array}{r} 76 \\ +\ 7 \\ \hline 83 \\ +\ 40 \\ \hline 123 \end{array} \qquad 76 + 47$$

$$\begin{array}{r} 267 \\ -\ 9 \\ \hline 258 \\ -\ 40 \\ \hline 218 \\ -\ 100 \\ \hline 118 \end{array} \qquad 267 - 149$$

Children recognise the relationship between the vertical presentation and the steps on the number line. They begin to use an expanded layout that underpins the standard written method. For example, for 76 + 47 and 83 – 48 children use:

$$\begin{array}{rrr} 76 = & 70 + & 6 \\ +\ \underline{47} = & \underline{40 + } & \underline{7} \\ & 110 + 13 & = 123 \end{array}$$

$$\begin{array}{rrr} 83 = & 80 + & 3 = & 70 + 13 \\ -\ \underline{48} = & \underline{40 + } & \underline{8} = & \underline{40 + \ 8} \\ & & & 30 + \ 5 & = 35 \end{array}$$

Children **round** two-digit and three-digit numbers to the nearest 10 and 100 and use this to give approximate answers to addition and subtraction calculations. For example, they recognise that the answer to 247 + 76 will be just less than 250 + 80 or 330, and 183 – 48 is about 180 – 50 or 130. They understand that finding an approximate answer is a useful strategy for checking a calculation.

Children begin to work **systematically**, using lists or tables to **organise** their solutions to problems such as:

A farmer has cows and chickens on the farm. Altogether the animals have 24 legs. How many cows and chickens could there be on the farm?

Children use their understanding of **place value** to support multiplication and division involving multiples of 10 to answer questions such as:

Three pencils cost 90p altogether. How much does each pencil cost?

Rani picks up seven 50 g weights. How much do these weigh altogether?

Sam is making cards. Each card takes 20 minutes. He starts at 4:30 and makes four cards. What time does he finish?

Children begin to use **partitioning** to multiply and divide two-digit numbers. For example, they calculate 24 × 4 by partitioning 24 into 20 and 4 and working out 20 × 4 + 4 × 4, and 96 ÷ 3 by partitioning 96 into 90 and 6 and dividing each part by 3 to get the answer 32. They identify remainders in related calculations such as 95 ÷ 3, and begin to round the remainder up or down when the context demands it. For example, if cars can each transport up to 4 people, they work out that 12 people would need 4 cars but 13 people require 5 cars.

Children solve problems such as:

Use three of the digits 2, 3, 4, 5 and 6, to create multiplication calculations (e.g. 34 × 6). What products can you make? What is the largest/smallest product?

They work in pairs or groups, with all children in the group contributing to decisions about the methods they use, whether they will use resources and how they will record their work.