Year group:	3
Type of test:	End of Half Term
Term:	Autumn 1
Test content:	Arithmetic
Power Maths topic:	Book 3A, Units 1 and 2

Q	ANSWER	MARK	INCORRECT ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
1	**800**	1	**Possible incorrect answer 503 (An answer like this may suggest children have added 3 onto 500 using a counting on strategy and have not understood the place value of the 3)** **Possible incorrect answer 8 (An answer like this may suggest children have added 3 onto 5 using a counting on strategy and have not understood the place value of the 3 or 5)** Children may use a counting on strategy, where adding the 100 s digits is a more efficient strategy. Children may find it difficult if their understanding of place value above 100 is not secure. This topic is covered in Unit 2 Lessons 1.	Children may demonstrate their deeper understanding of this concept by offering number facts from the same family that support their solution. For example: I know that 5 + 3 = 8 and 50 + 30 = 80 so 500 + 300 = 800.

Q	ANSWER	MARK	INCORRECT ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
2	**410**	1	**Possible incorrect answer 500 or 501 or 50 (An answer like this may suggest children could not identify the place value of the digits 4 and 1)** **Possible incorrect answer 409 (An answer like this may suggest children have added using a counting on strategy and have included 400 when counting 10 more than 400)** Children may resort to counting in 10s, rather than using knowledge of bonds and place value. Children may find it challenging when there is a 0 in the 1s or 10s place of the 3-digit number they are adding to. This topic is covered in Unit 2, Lesson 5.	Children can explain how to add a multiple of 10 to a 3-digit number in terms of the place value of the digits. Children can explain why, for example, when you add 30 to 654, the 10s digit increases by 3.
3	**541**	1	**Possible incorrect answer 640 or 631 (An answer like this may suggest children have not understood the place value of the digit 1 in 100)** This topic is covered in Unit 1, Lesson 7.	Children can find 1, 10, 100 more or less than a given number, including cases that involve an exchange. Children recognise which digit(s) will change. Children can also find the original number following an increase or decrease of 1, 10 and 100 by considering the inverse.

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4	**600**	1	**Possible incorrect answer 590 (An answer like this may suggest children have included 550 when counting on in 10s from 550)** **Possible incorrect answer 650 or 555 (An answer like this may suggest children have not understood the place value of any of the digits)** **Possible incorrect answer 500 (An answer like this may suggest children have added the tens, 50 + 50 = 100, but not included the exchanged hundred in their answer)** Children may find the flexible partitioning of the 10s required to bridge the hundred challenging. Children may have difficulty with exchange when bridging the 100s. For example, they may forget to include the exchanged digit or misconstrue thirteen 10s as 103. This topic is covered in Unit 1, Lesson 11 and Unit 2, Lesson 6.	Children can add multiples of 10 and recognise when they need to exchange ten 10s for one 100.
5	**359**	1	**Possible incorrect answer 358 (An answer like this may suggest children are adding using a counting on strategy and have included 352 when counting 7 more than 352)** Children may use a counting on strategy, where adding the 1s digits is a more efficient strategy. Children may find it difficult if their understanding of place value above 100 is not secure. This topic is covered in Unit 2, Lesson 2.	Children can add a 1-digit number to a 3-digit number by adding the 1s digits of both numbers.

Q	ANSWER	MARK	INCORRECT ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
6	**719**	1	**Possible incorrect answer 729 (An answer like this may suggest children are subtracting using a counting down strategy and have included 749 when counting down three 10s from 749)** **Possible incorrect answer 746 or 449 (An answer like this may suggest children have not understood the place value of the digits)** Children may resort to counting in 10s, rather than using knowledge of bonds and place value. Children may find it challenging when there is a 0 in the 1s or 10s place of the 3-digit number they are adding to. This topic is covered in Unit 2, Lesson 5.	Children can explain how to add or subtract a multiple of 10 to a 3-digit number in terms of the place value of the digits. Children can explain why, for example, when you subtract 30 from 654, the 10s digit decreases by 3.
7	**387**	1	**Possible incorrect answer 377 (An answer like this may suggest children are adding by counting on in 10s and have included 367 when counting two 10s more than 367)** **Possible incorrect answer 369 (An answer like this may suggest children have added two 1s to 367 rather than two 10s)** Children may resort to counting in 10s, rather than using knowledge of bonds and place value. Children may find it challenging when there is a 0 in the 1s or 10s place of the 3-digit number they are adding to. This topic is covered in Unit 2, Lesson 5.	Children can explain how to add a multiple of 10 to a 3-digit number in terms of the place value of the digits. Children can explain why, for example, when you add 30 to 654, the 10s digit increases by 3.

Q	ANSWER	MARK	INCORRECT ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
8	**175**	1	**Possible incorrect answer 174 (An answer like this may suggest children are adding by counting on and have included 167 when counting 8 more than 167)** **Possible incorrect answer 165 (An answer like this may suggest children have added the units, 7 + 8 = 15, but not included the exchanged 10 in their answer)** Children may find it difficult if their understanding of place value above 100 is not secure. This topic is covered in Unit 2, Lesson 3.	Children can add a 1-digit number to a 3-digit number by adding the 1s digits of both numbers.
9	**690**	1	**Possible incorrect answer 710 (An answer like this may suggest children have transposed the 10s digits to work out 30 – 20)** **Possible incorrect answer 700 (An answer like this may suggest children have used a counting strategy and have included 720 when counting down in 10s)** Children may think they can transpose the 10s digits. For example, if asked to find 230 – 70, they may perform 70 – 30 = 40 to give a 10s digit of 4. This topic is covered in Unit 2, Lesson 7.	Children recognise when they need to exchange 10s when subtracting a multiple of 10 from a 3-digit number. Children can perform the calculations accurately and fluently using mental methods, often supported by jottings.

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10	**632**	1	**Possible incorrect answer 622 (An answer like this may suggest children have added by counting in 10s and have included 562 when counting 70 more than 562)** **Possible incorrect answer 532 (An answer like this may suggest children have added the 10s, 60 + 70 = 130, but not included the exchanged hundred in their answer)** Children may find the flexible partitioning of the 10s required to bridge the hundred challenging. Children may have difficulty with exchange when bridging the 100s. For example, they may forget to include the exchanged digit or misconstrue thirteen 10s as 103. This topic is covered in Unit 2, Lesson 6.	Children can add multiples of 10 and recognise when they need to exchange ten 10s for one 100.
11	**398**	1	**Possible incorrect answer 402 (An answer like this may suggest children have subtracted the 1s digits in the wrong order)** **Possible incorrect answer 399 (An answer like this may suggest children have used a counting method and included 407 when counting back 9 from 407)** Children may subtract the digits in the wrong order. For example, when calculating 234 – 7, children may subtract four 1s from seven 1s because they think you have to subtract the smaller digit from the larger one. This is one of the most common errors when learning to subtract. This topic is covered in Unit 2, Lesson 4.	Children can explain how to exchange one 10 for ten 1s to subtract a 1-digit number. Children can justify their reasoning using their knowledge of number bonds within 20.

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12	**60**	1	**Possible incorrect answer 70 (An answer like this may suggest children have added using a counting in 10s strategy and have included 325 when counting on from 325)** Children may resort to counting in 10s, rather than using knowledge of bonds and place value. Children may find it challenging when there is a 0 in the 1s or 10s place of the 3-digit number they are adding to. This topic is covered in Unit 2, Lesson 5.	Children can explain how to add a multiple of 10 to a 3-digit number in terms of the place value of the digits. Children can explain why, for example, when you add 30 to 654, the 10s digit increases by 3.
13	**10**	1	**Possible incorrect answer 11 (An answer like this may suggest children have subtracted using a counting down strategy and have included 407 when counting down from 407)** Children may think they can transpose the 10s digits. For example, in 230 – 70, they may perform 70 – 30 = 40 to give a 10s digit of 4. This topic is covered in Unit 2, Lesson 7.	Children recognise when they need to exchange 10s when subtracting a multiple of 10 from a 3-digit number. Children can perform the calculations accurately and fluently using mental methods, often supported by jottings.
14	**276**	1	**Possible incorrect answer 265 (An answer like this may suggest children have added by counting in 10s and 1s and have included 245 when counting on)** Children are beginning to represent calculations more formally. This abstract jump can cause confusion. This topic is covered in Unit 2, Lesson 8.	Children can add and subtract a 3-digit number and a 2-digit number, and represent the addition using a column method, without the need for exchange.

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15	**444**	1	**Possible incorrect answer 455 (An answer like this may suggest children have used a counting method and included the digits 9 and 7 when counting)** Children are beginning to represent calculations more formally. This abstract jump can cause confusion. When an addition is represented using place value equipment, both numbers are represented. When subtracting, however, only the whole is represented. This can be confusing for children, as the column subtraction shows the whole and the part as separate numbers. This topic is covered in Unit 2, Lesson 8.	Children can add and subtract a 3-digit number and a 2-digit number, and represent the addition using a column method, without the need for exchange.
16	**270**	1	**Possible incorrect answer 260 (An answer like this may suggest children have not added on the 10 they have exchanged)** This topic is covered in Unit 2, Lesson 9.	Children can add a 3-digit number and a 2-digit number accurately using a written column method.
17	**Three different pairs of 3 and 2-digit numbers that total 541**	1	**Possible incorrect answer 401 + 50 (An answer like this may suggest children do not understand the place value of the digits)** This topic is covered in Unit 2, Lesson 9.	Children can give other 3-digit and 2-digit numbers that total 541.
18	**A 3 and 2-digit number that have a difference of 486**	1	**Possible incorrect answer 418 and 92 (An answer like this may suggest children have transposed the 10s digits to work out 90 – 10)** This topic is covered in Unit 2, Lesson 10.	Children can give other 3-digit and 2-digit numbers that have a difference of 486.

Mark range	Level
0 – 5	Below
6 – 8	Towards
9 – 11	Expected
12 – 14	Secure
15 – 16	Towards greater depth
17 – 18	Greater depth