

Year group:	3
Type of test:	End of Half Term
Term:	Autumn 2
Test content:	Arithmetic
Power Maths topic:	Book 3A, Units 2–5

Q	ANSWER	MARK	WRONG ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
1	295	1	Possible incorrect answer 565 (An answer like this may suggest children have incorrectly lined up the digits).	
			Possible incorrect answer 235 (An answer like this may suggest children have subtracted instead of added).	
			Children may resort to the written method, even when a mental method is more appropriate.	
			This revision topic is covered in Unit 2, Lesson 3	
2	243	1	Possible incorrect answer 527 (an answer like this may suggest children have added instead of subtracted).	Children can subtract a 3-digit number from a 3-digit number using a written column method where no exchange is required. Children are increasingly
			Children may have read the question incorrectly or lack understanding of the mathematical sign.	confident in attempting to subtract a 3-digit number from a 3-digit number using a mental method, when
			When tackling a calculation they find challenging, children may instinctively choose to use an operation they are more comfortable with, regardless of that shown in the question.	
			This topic is covered in Unit 3, Lesson 2.	



Q	ANSWER	MARK	WRONG ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
3	6	1	Possible incorrect answer 5 or 7 (An answer like this may suggest children have miscounted the number of 3s).	Children recognise equal groups and write down the correct multiplication sentence for each group. Children recognise groups that are not equal and say why they
			Possible incorrect answer 18 (An answer like this may suggest children have misunderstood the question and worked out 3+3+3+3+3+3).	are not equal.
			Children over-rely on repeated addition to work out multiplication sentences.	
			This topic is covered in Unit 4, Lesson 1.	
4	24	1	Possible incorrect answer 20 or 28 (An answer like this may suggest children have miscounted in the 4 times table).	Children can form a multiplication sentence involving multiplying by 4. Children can work out the answer to a multiplication sentence by recognising its link with
			Possible incorrect answer 10 (An answer like this may suggest children have added instead of multiplying).	repeated addition and using a number line to count up in 4s.
			Some children always start the count from 0. For example, when working out 11 × 4, even if they know 10 × 4 they will still start from 0.	
			This topic is covered in Unit 5, Lesson 6.	
5	396	1	Possible incorrect answer 395 or 397 (An answer like this may suggest children have miscalculated by 1).	Children can add two 3-digit numbers and decide whether there is an exchange in none, one or two
			This topic is covered in Unit 3, Lesson 1.	of the columns. They can explain how the exchange is presented in columnar written methods and demonstrate this using place value equipment.



Q	ANSWER	MARK	WRONG ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
6	33	1	Possible incorrect answer 30 or 36 (An answer like this may suggest children have miscounted in the 3 times table).	Children can recognise a multiplication fact from a given image and begin to develop a rapid recall of multiplication facts and associated division facts from
			Children may lack fluency with their times tables and so make errors when counting using them. They may also lack the fluency needed to recognise where they could use more simple multiplication facts to help them (in this instance, finding 3 x 10 first, then adding one more 3).	the 3 times table.
			Possible incorrect answer 14 (An answer like this may suggest children have added instead of multiplying).	
			Children may have read the question incorrectly or lack understanding of the mathematical sign.	
			When tackling a calculation they find challenging, children may instinctively choose to use an operation they are more comfortable with, regardless of that shown in the question.	
			This topic is covered in Unit 5, Lesson 3.	
7	0	1	Possible incorrect answer 3 (An answer like this may suggest children have added instead of multiplying).	Children can recognise a multiplication fact from a given image and begin to develop a rapid recall of multiplication facts and associated division facts from
			Children may think that $0 \times 3 = 3$. This is a common mistake and is often made when children have not thought about the answer and instead try to recall it too quickly.	the 3 times-table.
			This topic is covered in Unit 5, Lesson 3.	
8	145	1	Possible incorrect answer 545 (An answer like this may suggest children have added instead of subtracting).	Children can subtract a 3-digit number from a 3-digit number using a written column method. Children are increasingly confident in attempting to subtract a 3-digit number from a 3-digit number using a mental
			This topic is covered in Unit 3, Lesson 11.	method, when appropriate.



Q	ANSWER	MARK	WRONG ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
9	382	1	Possible incorrect answer 372 (An answer like this may suggest children have forgotten to carry 1 from the ones column to the tens column).	Children can add two 3-digit numbers and decide whether there is an exchange in none, one or two of the columns. They can explain how the exchange is presented in columnar written methods and demonstrate this using place value equipment.
			Some children may add mentally, starting with adding the 100s, then the 10s and then the 1s. If children do not begin by adding the 1s, then the 10s and then the 100s, adding where exchange is required can be difficult and prone to inaccuracy.	
			This topic is covered in Unit 3, Lesson 3.	
10	9	1	Possible incorrect answer 8 or 10 (An answer like this may suggest children have miscounted in 3s).	Children can form division sentences from a grouping or a sharing situation, and they recognise the
			Possible incorrect answer 24 or 30 (An answer like this may suggest children have subtracted or added instead of dividing).	difference between grouping and sharing. Children can use repeated subtraction and counting back in 3s to work out the result of a division, as well as seeing how an array can belo them
			Children may think that dividing always means sharing. Present children with examples to show that it can also mean grouping.	
			This topic is covered in Unit 5, Lesson 2.	
11	8	1	Possible incorrect answer 7 or 9 (An answer like this may suggest children have miscounted in 4s).	Children can form a division sentence from either a grouping or a sharing situation as they know the
			Possible incorrect answer 28 or 36 (An answer like this may suggest children have subtracted or added instead of divided).	difference between grouping and sharing. Children are able to use repeated subtraction and counting back in 4s to work out the result of a division; and they know that a method for dividing by 6 is to balve and balve again
			Children may think that dividing always means sharing. Present children with examples to show that it can also mean grouping. When dividing by 4, children may lose track of the count and therefore arrive at the wrong answer.	הופנחסט זטר טועוטווואַ שע 4 וג נט המועיפ מווט המועיפ מקמוח.
			This topic is covered in Unit 5, Lesson 5.	



Q	ANSWER	MARK	WRONG ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
12	56	1	Possible incorrect answer 48 or 64 (An answer like this may suggest children have miscounted in the 8 times table).	Children can form a multiplication sentence involving multiplying by 8 and can work out the answer to a multiplication sentence by knowing its link with
			Possible incorrect answer 15 (An answer like this may suggest children have added instead of multiplying).	repeated addition and using a number line to count up in 8s. They will start to remember some of the multiplication facts for multiplying by 8 and they will
			Children often start the counting in 8s from 0 when working out, for example 11×8 , even if they already know 10×8 . Encourage children to start counting on from known facts. Children may lose count when working answers out mentally. They may count too many or too few 8s. This should reinforce the need for them to know their multiplication facts.	know the link between multiplying by 2, by 4 and by 8.
12	100	1	This topic is covered in Unit 5, Lesson 9.	Children een rongeent eelumn subtractions involving
15	108	1	may suggest children have worked out 7 – 9 as 2 instead of exchanging from the tens column).	exchange across one or two columns, and can explain when and why it is necessary.
			Possible incorrect answer 766 (An answer like this may suggest children have added instead of subtracting).	
			There is a danger that children assume you always subtract the smaller digit from the larger digit. This can lead to a misconception when the subtractions require exchange. In this lesson it is important that children understand they are subtracting from a whole.	
			This topic is covered in Unit 3, Lesson 5.	



Q	ANSWER	MARK	WRONG ANSWERS AND MISCONCEPTIONS	EVIDENCE OF GREATER DEPTH
14	48	1	Possible incorrect answer 3 (An answer like this may suggest children have divided instead of multiplying).	Children are able to use key information in a question to draw a bar model and then work out whether they need to multiply or divide.
			Children may find it challenging to solve calculations when presented inversely. In this case they may choose to rearrange the given calculation so that it looks more like a calculation they are more confident with. In this case, rearranging $\square \div 4 = 12$ as $12 \div 4 = \square$	
			Possible incorrect answer 16 (An answer like this may suggest children have added instead of multiplying).	
			Children may have read the question incorrectly or lack understanding of the mathematical sign.	
			When tackling a calculation they find challenging, children may instinctively choose to use an operation they are more comfortable with, regardless of that shown in the question.	
			This topic is covered in Unit 5, Lesson 5.	
15	3	1	Possible incorrect answer 2 or 4 (An answer like this may suggest children have miscounted in 8s).	Children can form a division sentence from either a grouping or a sharing situation and know the
			Possible incorrect answer 16 or 32 (An answer like this may suggest children have subtracted or added instead of divided).	difference between grouping and sharing. Children can use repeated subtraction and counting forwards or backwards in 8s to work out the result of a division, as
			When dividing by 8, children may lose track of the count forwards or backwards.	the number, halve the answer and then halve again.
			This topic is covered in Unit 5, Lesson 8.	
16	13		Possible incorrect answer 36 (An answer like this may suggest children have subtracted not divided).	Children can form a division sentence from either a grouping or a sharing situation and know the
			This topic is covered in Unit 5, Lesson 1.	difference between grouping and sharing. Children can use repeated subtraction and counting forwards or backwards in 3s to work out the result of a division,



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17	3	1	Possible incorrect answer 24 (An answer like this may suggest children have misunderstood the question and just worked out 12 × 2).	Children can solve a range of multiplication and division problems that may involve more than one step. They are able to use key information from a question to
			Children may not be able to work out whether they need to multiply or divide.	draw a bar model and work out whether they need to multiply or divide first.
			This topic is covered in Unit 5, Lesson 9.	
18	275	1	Possible incorrect answer 335 (An answer like this may suggest children have worked out 5 – 8 as 3 instead of exchanging from the hundreds column).	
			Possible incorrect answer 443 (An answer like this may suggest children have added instead of subtracting).	
			This topic is covered in Unit 3, Lesson 11.	

Mark range	Level
0 - 4	Below
5 – 8	Towards
9 – 12	Expected
13 - 14	Secure
15 – 16	Towards greater depth
17 – 18	Greater depth

