



- 1) a) $1 \times 10 \times 10 \times 10$
 b) $1 \times 10 \times 10 \times 10 \times 10 = 10\,000$
- 2) a) 2 342, 3 342, 4 342, 5 342, 6 342
 b) 10, 110, 210, 310, 410
 Count forwards in steps of 100.
 c) 79 019, 89 019, 99 019, 109 019
 Count forwards in steps of 10 000.
 d) 6 990, 7 000, 7 010, 7 020
 Count forwards in steps of 10.

- 3) a)

609 020

619 020

629 020

639 020

649 020

- b) Examples include

659 020

599 020



- 1) a) 11 311 should be 11 301.
 b) 4 252 should be 4 262.
 c) 62 903 should be 61 903.
- 2) C is the false statement. You cannot count forwards from 14 023 and reach 13 923 as it less than 14 203.
- 3) The function machine counts forwards in 1000s.
 626 039 would be the 9th term in the sequence.



- 1) a) Bethany is incorrect. Ron is correct (if negative numbers are considered). For example, counting back in 10s from 3 would produce -7.
 b) A variety of answers acceptable. Zero is a good example. Counting forwards or backwards from zero in 10s will always produce a number that has a zero in the ones place. Numbers ending in 5 will also create sequences of numbers ending in 5 when counting forwards and backwards in tens.
- 2) Jane is correct when the numbers are all positive or all negative. However, when a sequence crosses zero, the last 4 digits will usually change.

3) a)

8 th backward	4 th backward		4 th forward	8 th forward
19	419	819	1 219	1 619
217	617	1 017	1417	1817
3 827	41 827	45 827	94 827	53 827
381 134	381 534	381 934	382 334	382 734

- b) The last 2 digits of every number are the same as the original.
- 4) Variety of possible answers.

Counting Maze

To count in steps of powers of ten.



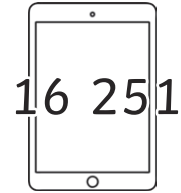
Start at any of the 4 gift boxes and count forwards or backwards in steps of powers of 10 to find out which present is in each box.



Forwards in 10s



Forwards in 1000s



7662	8734	8724	16 571	16 651	8522	8523	16 351	15 351
8744	7672	16 851	16 751	9522	16 551	16 451	16 513	15 513
8754	16 951	7682	7692	7926	10 522	16 541	11 315	10 513
16 591	8764	17 051	7702	11 522	10 255	16 531	16 351	8834
8742	8774	17 151	7712	12 522	13 522	14 525	15 255	88 45
8784	7732	7722	17 251	8824	8834	14 522	15 522	13 255
7742	8794	8804	8814	17 351	8843	8844	8854	16 522



Backwards in 100s



Backwards in 10s



Counting Maze

To count in steps of powers of ten.



Start at any of the 4 gift boxes and count forwards or backwards in steps of powers of 10 to find out which present is in each box.



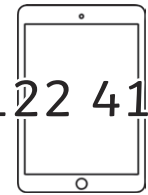
16 734 Forwards in 100s



173 314



12 143 Forwards in 10 000s



122 413

17 734	16 834	163 314	183 314	22 143	33 134	134 413	123 413	123 513
18 734	16 934	193 314	18 134	18 334	32 143	124 413	133 413	133 423
313 314	203 314	17 034	17 134	18 234	42 143	125 413	136 413	136 513
413 314	213 314	223 314	234 314	17 234	52 143	53 134	126 413	137 413
93 143	94 143	82 243	233 314	62 143	17 334	17 434	17 534	127 413
113 143	92 143	82 143	72 143	243 314	130 413	129 413	128 413	17 634
112 143	102 143	103 143	72 243	131 413	253 314	263 314	273 314	17 734



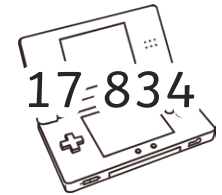
122 143



132 413 Backwards in 1000s



273 314 Backwards in 10 000s



17 834

Counting Maze

To count in steps of powers of ten.



Start at any of the 4 gift boxes and count forwards or backwards in steps of powers of 10 to find out which present is in each box.



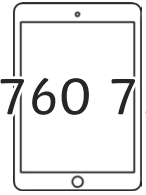
432 761 Forwards in 1000s



451 617



367 671 Forwards in 100 000s



1 760 716

433 761	471 617	461 617	467 671	368 671	377 671	1 761 916	1 760 816	1 761 816
481 617	434 761	435 761	567 671	369 671	1 762 016	1 760 916	1 670 816	1 671 816
491 617	444 761	667 671	436 761	436 861	1 761 016	1 760 016	1 761 016	1 762 016
592 617	501 617	767 671	437 761	1 761 116	449 761	441 761	461 761	1 443 761
977 671	867 671	511 617	1 761 216	438 761	439 761	440 761	451 761	443 761
967 671	877 671	522 617	521 617	1 761 316	1 761 416	442 761	441 761	442 861
1 077 671	1 067 671	532 617	531 617	431 617	331 617	1 761 516	1 761 616	442 761



1 167 671



541 617 Backwards in 10 000s

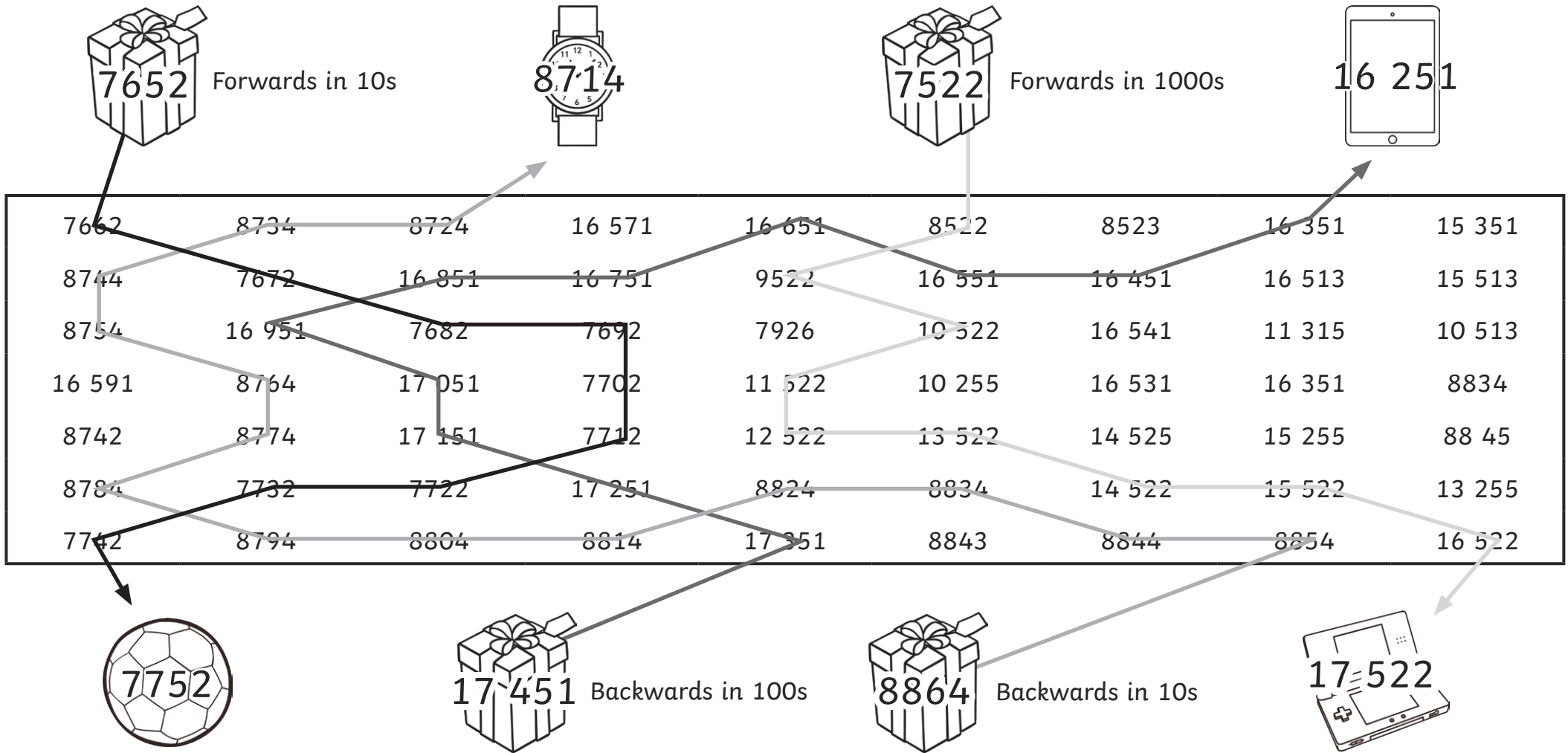


1 761 716 Backwards in 100s



443 761

Counting Maze Answers



Counting Maze Answers



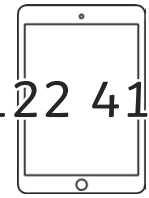
16 734 Forwards in 100s



17 3314



12 143 Forwards in 10 000s



122 413

17 734	16 834	163 314	183 314	22 143	33 134	134 413	123 413	123 513
18 734	16 934	193 314	18 134	18 334	32 143	124 413	133 413	133 423
313 314	203 314	17 034	17 134	18 234	42 143	125 413	136 413	136 513
413 314	213 314	223 314	234 314	17 234	52 143	53 134	126 413	137 413
93 143	94 143	82 243	233 314	62 143	17 334	17 434	17 534	127 413
113 143	92 143	82 143	72 143	243 314	130 413	129 413	128 413	17 634
112 143	102 143	103 143	72 243	131 413	253 314	263 314	273 314	17 734



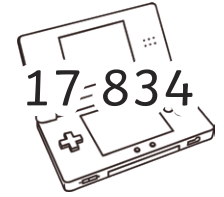
122 143



132 413 Backwards in 1000s



273 314 Backwards in 10 000s



17 834

Counting Maze Answers



432 761

Forwards in 1000s

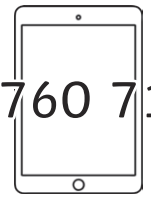


451 617



367 671

Forwards in 100 000s



1 760 716

433 761	471 617	461 617	467 671	368 671	377 671	1 761 916	1 760 816	1 761 816
481 617	434 761	435 761	567 671	369 671	1 762 016	1 760 916	1 670 816	1 671 816
491 617	444 761	667 671	436 761	436 861	1 761 016	1 760 016	1 761 016	1 762 016
592 617	501 617	767 671	437 761	1 761 116	449 761	441 761	461 761	1 443 761
977 671	867 671	511 617	1 761 216	438 761	439 761	440 761	451 761	443 761
967 671	877 671	522 617	521 617	1 761 316	1 761 416	442 761	441 761	442 861
1 077 671	1 067 671	532 617	531 617	431 617	331 617	1 761 516	1 761 616	442 761



1 167 671



541 617

Backwards in 10 000s

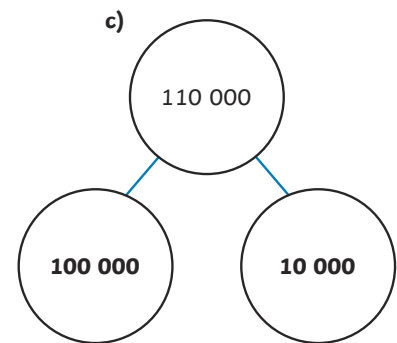
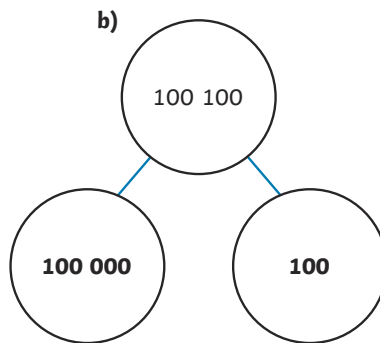
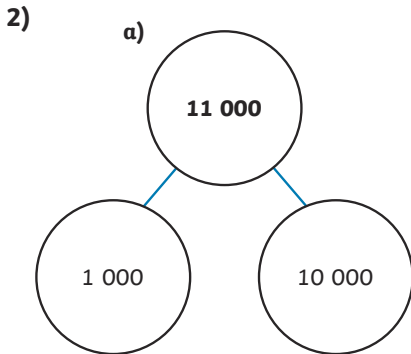
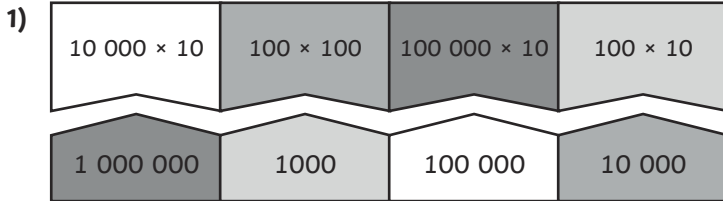


1 761 716

Backwards in 100s



443 761



3)

Starting number	Add 1000	Add 10 000	Add 100 000
14 521	15 521	24 521	114 521
588 321	589 321	598 321	688 321
302 853	303 853	312 853	402 853

- 1) a) False $10\ 000 \times 10 = 100\ 000$
 b) False $1000 \times 100 = 100\ 000$
 c) True



2) a) There are two possible answers:

START	452	100	1000	1000
100	16	100 000	23 109	10 000
10	10 000	100 000	4527	10 000
78	1001	10 000	10 000	FINISH

START	452	100	1000	1000
100	16	100 000	23 109	10 000
10	10 000	100 000	4527	10 000
78	1001	10 000	10 000	FINISH

- b) Children should have found the other possible route shown above.
 c) There are two pathways. The totals are either 130 110 or 232 210.

3) Tommy is incorrect as each square will be worth 100 000. Talia is also incorrect. Some of the numbers shown on the ten-frame will be larger than 500 000 if at least 6 or more of the squares are filled.



1) There are many possible answers.

For a), children need to show that you are adding 10 000, 1000, 100 000 and 100 000.

For b), children need to show that you are adding 100, 1000, 100 000 and 10.

For c), children need to show that you are adding 10, 1000, 100 and 100 000.

An example can be seen below:

a)



b)



c)



- 2) a) Never true – each square will represent 100 000.
 b) Sometimes true - adding 10 000 will change the hundreds digit if the ten thousands digit is a 9.
 c) Never true – there are five powers of ten: 10, 100, 1000, 10 000 and 100 000.
 d) Always true – when adding 100 000, you need to look at the digit in the hundred thousands column.

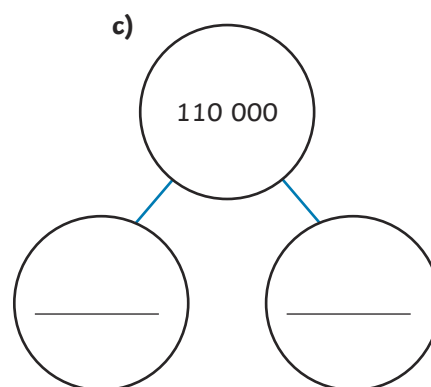
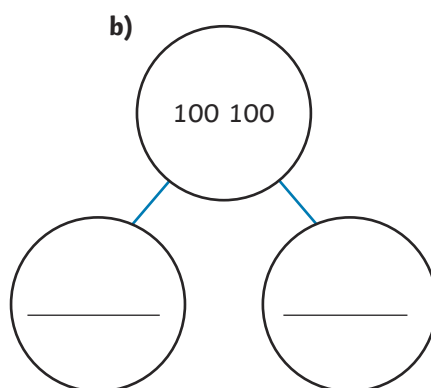
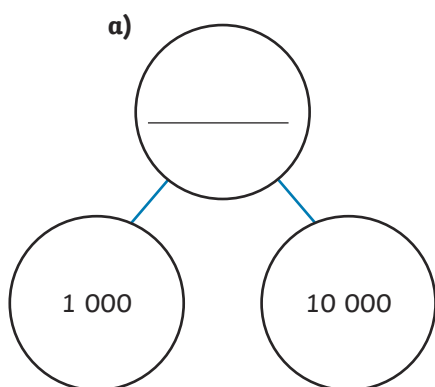


1) Match the calculations to the current product.

$10\ 000 \times 10$	100×100	$100\ 000 \times 10$	100×10
---------------------	------------------	----------------------	-----------------

1 000 000	1000	100 000	10 000
-----------	------	---------	--------

2) Complete the part-whole models by writing the correct power of ten or total in the empty circles.



3) Complete the table.

Starting Number	Add 1000	Add 10 000	Add 100 000
14 521			
588 321			
302 853			



1) Which of these statements are false? Prove it!

a) 10 000 tens are equal to a million.

b) $1000 \times 100 = 1\,000\,000$

c) 100 lots of 100 is equal to 10 000.

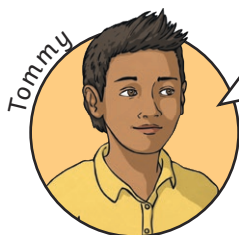
2) a) Moving only left, right, up and down, find a route through the maze that takes you from START to FINISH. You can only land on squares that are powers of ten.

START	452	100	1000	1000
100	16	100 000	23 109	10 000
10	10 000	100 000	4527	10 000
78	1001	10 000	10 000	FINISH

b) Find all possible ways through the maze.

c) Find the total of each pathway.

3) Tommy and Talia are discussing a ten-frame that represents 1 million.



Each square will be worth 10 000.



All numbers shown on the ten-frame will be larger than 500 000.

Do you agree with Tommy and Talia? Explain your answer.



1) For each set of coloured circles, Sami has started on the number on the left and added powers of ten to get to the number on the right. For each set of circles, write a number that could go on the circles.

a)

34 041 _____ _____ _____ 245 041

b)

75 879 _____ _____ _____ 176 089

c)

452 999 _____ _____ _____ 554 109

2) Martin has written sentences about powers of ten. Read the statements and decide whether they are always, sometimes or never true. Explain your choice.

a) When representing a million on a ten-frame, each square will represent 10 000.



b) Adding 10 000 changes the hundred thousands digit.

c) There are four powers of ten between 0 and 1 million.

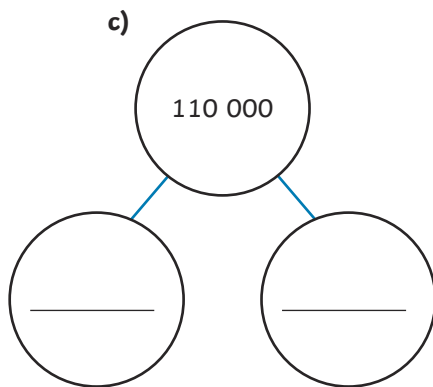
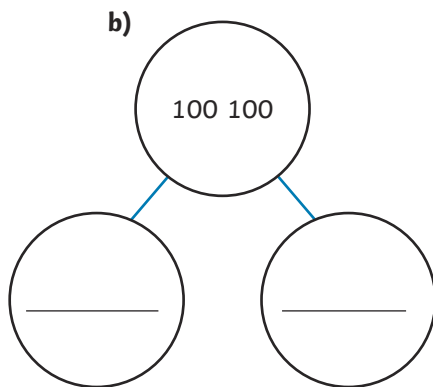
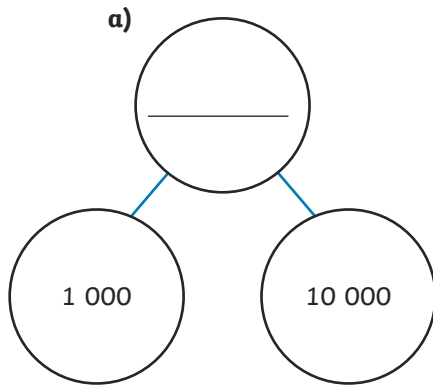
d) To count forward in steps of 100 000, you need to look at the hundred thousands digit and add 1.

1) Match the calculations to the current product.



$10\ 000 \times 10$	100×100	$100\ 000 \times 10$	100×10
1 000 000	1000	100 000	10 000

2) Complete the part-whole models by writing the correct power of ten or total in the empty circles.



3) Complete the table.

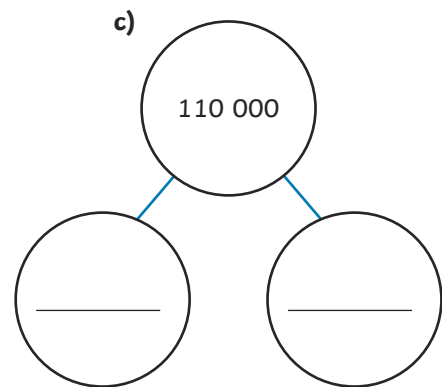
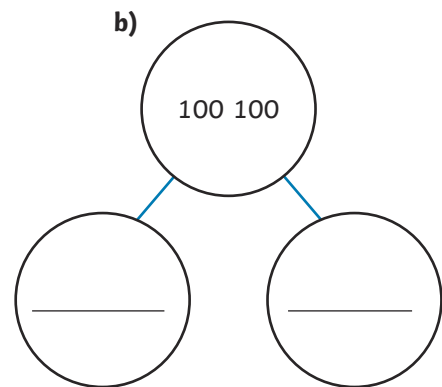
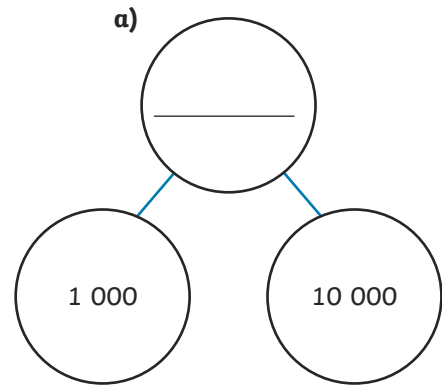
Starting number	Add 1000	Add 10 000	Add 100 000
14 521			
588 321			
302 853			

1) Match the calculations to the current product.



$10\ 000 \times 10$	100×100	$100\ 000 \times 10$	100×10
1 000 000	1000	100 000	10 000

2) Complete the part-whole models by writing the correct power of ten or total in the empty circles.



3) Complete the table.

Starting number	Add 1000	Add 10 000	Add 100 000
14 521			
588 321			
302 853			

- 1) Which of these statements are false?
Prove it!



- a) 10 000 tens are equal to a million.
- b) $1000 \times 100 = 1\,000\,000$
- c) 100 lots of 100 is equal to 10 000.

- 2) a) Moving only left, right, up and down, find a route through the maze that takes you from START to FINISH. You can only land on squares that are powers of ten.

START	452	100	1000	1000
100	16	100 000	23 109	10 000
10	10 000	100 000	4527	10 000
78	1001	10 000	10 000	FINISH

- b) Find all possible ways through the maze.
- c) Find the total of each pathway.

- 3) Tommy and Talia are discussing a ten-frame that represents 1 million.



Each square will be worth 10 000.



All numbers shown on the ten-frame will be larger than 500 000.

Do you agree with Tommy and Talia?
Explain your answer.

- 1) Which of these statements are false?
Prove it!



- a) 10 000 tens are equal to a million.
- b) $1000 \times 100 = 1\,000\,000$
- c) 100 lots of 100 is equal to 10 000.

- 2) a) Moving only left, right, up and down, find a route through the maze that takes you from START to FINISH. You can only land on squares that are powers of ten.

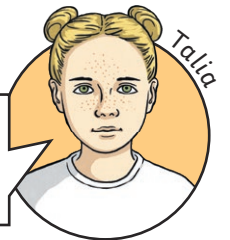
START	452	100	1000	1000
100	16	100 000	23 109	10 000
10	10 000	100 000	4527	10 000
78	1001	10 000	10 000	FINISH

- b) Find all possible ways through the maze.
- c) Find the total of each pathway.

- 3) Tommy and Talia are discussing a ten-frame that represents 1 million.



Each square will be worth 10 000.



All numbers shown on the ten-frame will be larger than 500 000.

Do you agree with Tommy and Talia?
Explain your answer.

- 1) For each set of coloured circles, Sami has started on the number on the left and added powers of ten to get to the number on the right.



For each set of circles, write a number that could go on the circles.

a)

34 041 _____ _____ _____ 245 041

b)

75 879 _____ _____ _____ 176 089

c)

452 999 _____ _____ _____ 554 109

- 2) Martin has written sentences about powers of ten. Read the statements and decide whether they are always, sometimes or never true. Explain your choice.

- a) When representing a million on a ten-frame, each square will represent 10 000.
- b) Adding 10 000 changes the hundred thousands digit.
- c) There are four powers of ten between 0 and 1 million.
- d) To count forward in steps of 100 000, you need to look at the hundred thousands digit and add 1.



- 1) For each set of coloured circles, Sami has started on the number on the left and added powers of ten to get to the number on the right.



For each set of circles, write a number that could go on the circles.

a)

34 041 _____ _____ _____ 245 041

b)

75 879 _____ _____ _____ 176 089

c)

452 999 _____ _____ _____ 554 109

- 2) Martin has written sentences about powers of ten. Read the statements and decide whether they are always, sometimes or never true. Explain your choice.

- a) When representing a million on a ten-frame, each square will represent 10 000.
- b) Adding 10 000 changes the hundred thousands digit.
- c) There are four powers of ten between 0 and 1 million.
- d) To count forward in steps of 100 000, you need to look at the hundred thousands digit and add 1.





4567



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



4667



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



4767



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



4867



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



4967



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



17 642



REGENT STUDIES

Focused education on life's walk

www.regentstudies.com



18 642



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



19 642



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



20 642



21 642



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



4210



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



14 210



REGENT STUDIES

Focused education on life's walk

www.regentstudies.com



24 210



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



34 210



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



44 210



REGENT STUDIES

Focused education on life's walk

www.regentstudies.com



76 198



77 198



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



78 198



79 198



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



80 198



REGENT STUDIES

Focused education on life's walk

www.regentstudies.com



82 981



182 981



282 981



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



382 981



482 981



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



374 819



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



384 819



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



394 819



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



404 819



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



414 819





1 876 349





1 976 349





2 076 349



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



2 176 349





2 276 349





856 349





956 349



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



1 056 349





1 156 349





1 256 349





774 349





784 349



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



794 349



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



804 349



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



814 349



REGENT STUDIES

Focused education on life's walk!

www.regentstudies.com



1) a) Write down a calculation that can be used to work out 10^3 .

b) Calculate 10^4 .

2) a) Count forwards in steps of 1 000.

2 342, _____, 4342, _____ 6 342

b) Count forwards in steps of _____.

10, _____, 210, _____ 410.

c) Count forwards in steps of _____.

79 019, 89 019, _____, _____.

d) Count _____ in steps of _____.

6 990, _____, _____, 7 020.

3) a) Rewrite the numbers in ascending order and describe the power of 10 they have increased by.

639 020

649 020

619 020

609 020

629 020



b) Write an additional number that could also be included.



1) Alexis has been writing his own sequences.

Can you identify and correct the mistake he has made in each sequence?

- a) 11 261, 11 271, 11 281, 11 291, 11 311 _____
- b) 4 562, 4 462, 4 362, 4 252, 4 162 _____
- c) 62 103, 62 003, 62 903, 61 803, 61 703 _____



2) Lucy has the number 14 023. She says two true statements and a false statement about her number.

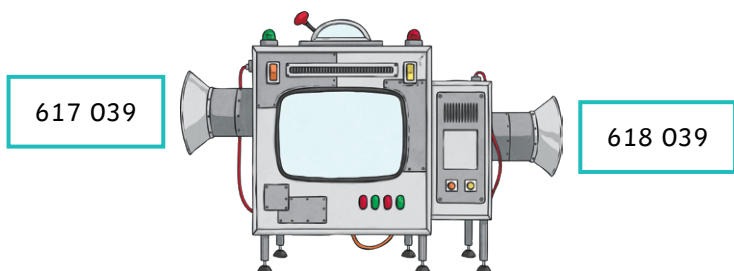
Can you identify the false statement? Explain your thinking.

- a) If I count backwards in 1 000s, I will say the number 9 023.

- b) If I count forwards in 10 000s, I will say 104 023 .

- c) If I count forwards in 100s, I will say the number 13 923.

3) a) What rule does the function machine follow?



- b) Find the 9th term in the sequence.



1) Bethany counts forwards and backwards in 10s from 73.



Bethany

As I count forwards and backwards from 73, all the numbers I say will end in 3.

a) Ron says that she is incorrect. Why did Ron say this?

b) Write a number that you can count from in tens, forwards and backwards, that will always have the same digit in the ones place.

2) Explain when Jane would be correct and when she would be incorrect.



Jane

When you count in ten thousands, the last four digits of a number stay the same.

3) Adam writes some numbers. From each number, he counts forwards and backwards in hundreds.

a) Write down the 4th and 8th number that Adam arrives at each way.

8 th backward	4 th backward		4 th forward	8 th forward
		819		
		1 017		
		45 827		
		381 934		

b) Can you see any relationships between the numbers in each row? Explain what the relationship is.

4) Create your own grid that shows a similar relationship between numbers when counting forwards and backwards in either 10s, 100s, 1000s or 10 000s.

Rolling Powers of Ten

To understand powers of ten up to 1 million.



Work with your partner to play this game. The aim of the game is to complete your table first. Roll the dice and use the key below to see which power of ten you will be adding to your starting number. Fill in your table with the right answer. Each time you roll, you should be adding the power of ten to the original number.

If, for example, you roll a two on the dice (add 100) and you have already added 100 to all of your starting numbers, you will have to miss your go! Who will be the first to fill in their table?

Partner A			
Starting Number	Add 10	Add 100	Add 1000

Partner B			
Starting Number	Add 10	Add 100	Add 1000

Key



add 10



add 100



add 1000



add 10



add 100



add 1000

Rolling Powers of Ten

To understand powers of ten up to 1 million.



Work with your partner to play this game. The aim of the game is to complete your table first. Roll the dice and use the key below to see which power of ten you will be adding to your starting number. Fill in your table with the right answer. Each time you roll, you should be adding the power of ten to the original number.

If, for example, you roll a two on the dice (add 100) and you have already added 100 to all of your starting numbers, you will have to miss your go! Who will be the first to fill in their table?

Partner A					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000

Partner B					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000

Key



add 10



add 100



add 1000



add 10 000



add 100 000



add any power of 10 you like

Rolling Powers of Ten

To understand powers of ten up to 1 million.



Work with your partner to play this game. The aim of the game is to complete your table first. Roll the dice and use the key below to see which power of ten you will be adding to your starting number. Fill in your table with the right answer. Each time you roll, you should be adding the power of ten to the original number.

If, for example, you roll a two on the dice (add 100) and you have already added 100 to all of your starting numbers, you will have to miss your go! Who will be the first to fill in their table?

Partner A					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000

Partner B					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000

Key



add 10



add 100



add 1000



add 10 000



add 100 000



add any power of 10 you like

Rolling Powers of Ten

To understand powers of ten up to 1 million.



Work with your partner to play this game. The aim of the game is to complete your table first. Roll the dice and use the key below to see which power of ten you will be adding to your starting number. Fill in your table with the right answer. Each time you roll, you should be adding the power of ten to the original number.

If, for example, you roll a two on the dice (add 100) and you have already added 100 to all of your starting numbers, you will have to miss your go! Who will be the first to fill in their table?

Partner A			
Starting Number	Add 10	Add 100	Add 1000
462			
3844			
1191			

Partner B			
Starting Number	Add 10	Add 100	Add 1000
341			
4920			
5228			

Key



add 10



add 100



add 1000



add 10



add 100



add 1000

Rolling Powers of Ten

To understand powers of ten up to 1 million.



Work with your partner to play this game. The aim of the game is to complete your table first. Roll the dice and use the key below to see which power of ten you will be adding to your starting number. Fill in your table with the right answer. Each time you roll, you should be adding the power of ten to the original number.

If, for example, you roll a two on the dice (add 100) and you have already added 100 to all of your starting numbers, you will have to miss your go! Who will be the first to fill in their table?

Partner A					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000
2462					
35 844					
10 191					

Partner B					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000
4861					
23 844					
17 653					

Key



add 10



add 100



add 1000



add 10 000



add 100 000



add any power of 10 you like

Rolling Powers of Ten

To understand powers of ten up to 1 million.



Work with your partner to play this game. The aim of the game is to complete your table first. Roll the dice and use the key below to see which power of ten you will be adding to your starting number. Fill in your table with the right answer. Each time you roll, you should be adding the power of ten to the original number.

If, for example, you roll a two on the dice (add 100) and you have already added 100 to all of your starting numbers, you will have to miss your go! Who will be the first to fill in their table?

Partner A					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000
244 962					
350 844					
106 191					

Partner B					
Starting Number	Add 10	Add 100	Add 1000	Add 10 000	Add 100 000
485 045					
723 891					
451 100					

Key



add 10



add 100



add 1000



add 10 000



add 100 000



add any power of 10 you like

1) a) Write down a calculation that can be used to work out 10^3 .



b) Calculate 10^4 .

2) a) Count forwards in steps of 1 000.

2 342, _____, 4342, _____ 6 342

b) Count forwards in steps of _____.

10, _____, 210, _____ 410.

c) Count forwards in steps of _____.

79 019, 89 019, _____, _____.

d) Count _____ in steps of _____.

6 990, _____, _____, 7 020.

3) a) Rewrite the numbers in ascending order and describe the power of 10 they have increased by.

639 020

649 020

619 020

609 020

629 020

b) Write an additional number that could also be included.



1) a) Write down a calculation that can be used to work out 10^3 .



b) Calculate 10^4 .

2) a) Count forwards in steps of 1 000.

2 342, _____, 4342, _____ 6 342

b) Count forwards in steps of _____.

10, _____, 210, _____ 410.

c) Count forwards in steps of _____.

79 019, 89 019, _____, _____.

d) Count _____ in steps of _____.

6 990, _____, _____, 7 020.

3) a) Rewrite the numbers in ascending order and describe the power of 10 they have increased by.

639 020

649 020

619 020

609 020

629 020

b) Write an additional number that could also be included.



- 1) Alexis has been writing his own sequences.



Can you identify and correct the mistake he has made in each sequence?

- a) 11 261, 11 271, 11 281,
11 291, 11 311
- b) 4 562, 4 462, 4 362,
4 252, 4 162
- c) 62 103, 62 003, 62 903,
61 803, 61 703

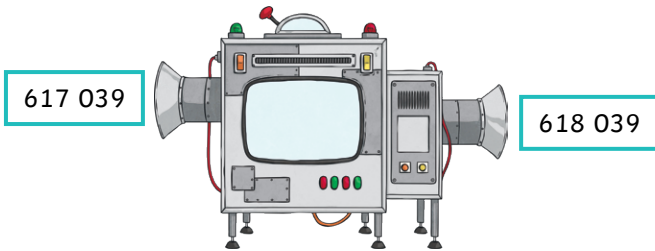


- 2) Lucy has the number 14 023. She says two true statements and a false statement about her number.

Can you identify the false statement?
Explain your thinking.

- a) If I count backwards in 1 000s, I will say the number 9 023.
- b) If I count forwards in 10 000s, I will say 104 023 .
- c) If I count forwards in 100s, I will say the number 13 923.

- 3) a) What rule does the function machine follow?



- b) Find the 9th term in the sequence.

- 1) Alexis has been writing his own sequences.



Can you identify and correct the mistake he has made in each sequence?

- a) 11 261, 11 271, 11 281,
11 291, 11 311
- b) 4 562, 4 462, 4 362,
4 252, 4 162
- c) 62 103, 62 003, 62 903,
61 803, 61 703

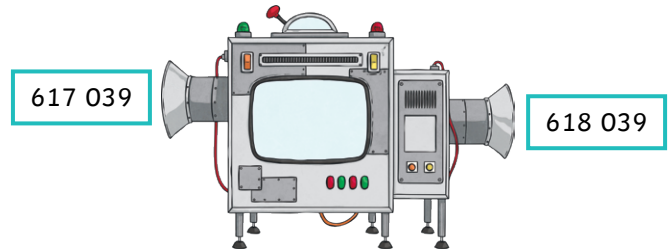


- 2) Lucy has the number 14 023. She says two true statements and a false statement about her number.

Can you identify the false statement?
Explain your thinking.

- a) If I count backwards in 1 000s, I will say the number 9 023.
- b) If I count forwards in 10 000s, I will say 104 023 .
- c) If I count forwards in 100s, I will say the number 13 923.

- 3) a) What rule does the function machine follow?



- b) Find the 9th term in the sequence.

- 1) Bethany counts forwards and backwards in 10s from 73.



As I count forwards and backwards from 73, all the numbers I say will end in 3.

Bethany

- a) Ron says that she is incorrect. Why did Ron say this?
- b) Write a number that you can count from in tens, forwards and backwards, that will always have the same digit in the ones place.
- 2) Explain when Jane would be correct and when she would be incorrect.



When you count in ten thousands, the last four digits of a number stay the same.

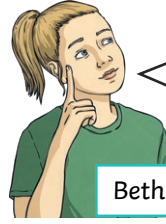
Jane

- 3) Adam writes some numbers. From each number, he counts forwards and backwards in hundreds.
- a) Write down the 4th and 8th number that Adam arrives at each way.

8 th backward	4 th backward		4 th forward	8 th forward
		819		
		1 017		
		45 827		
		381 934		

- b) Can you see any relationships between the numbers in each row? Explain what the relationship is.
- 4) Create your own grid that shows a similar relationship between numbers when counting forwards and backwards in either 10s, 100s, 1000s or 10 000s.

- 1) Bethany counts forwards and backwards in 10s from 73.



As I count forwards and backwards from 73, all the numbers I say will end in 3.

Bethany

- a) Ron says that she is incorrect. Why did Ron say this?
- b) Write a number that you can count from in tens, forwards and backwards, that will always have the same digit in the ones place.
- 2) Explain when Jane would be correct and when she would be incorrect.



When you count in ten thousands, the last four digits of a number stay the same.

Jane

- 3) Adam writes some numbers. From each number, he counts forwards and backwards in hundreds.
- a) Write down the 4th and 8th number that Adam arrives at each way.

8 th backward	4 th backward		4 th forward	8 th forward
		819		
		1 017		
		45 827		
		381 934		

- b) Can you see any relationships between the numbers in each row? Explain what the relationship is.
- 4) Create your own grid that shows a similar relationship between numbers when counting forwards and backwards in either 10s, 100s, 1000s or 10 000s.