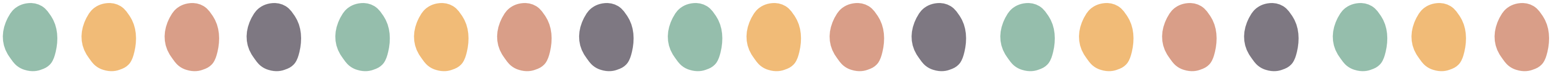


Y4- Overview

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2		
Unit	1	2	3		4	5	6	7	8	9	10	11	12

- Number and place value
- Number facts
- Addition and subtraction
- Multiplication and division
- Fractions
- Geometry
- Other

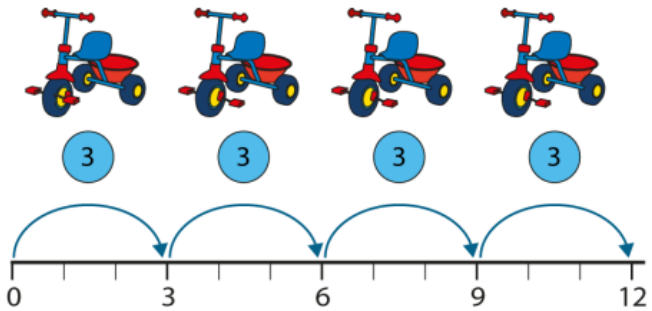
Unit 4	Represent counting in threes and sixes as the 3 and 6 times tables (1 week)
Ready to progress	4NF-1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number. of regular and irregular polygons.
NCETM documents	TEACHING POINT 1 AND 2 https://www.ncetm.org.uk/media/fckpucaj/ncetm_spine2_segment08_y3.pdf#page=39
Small steps	1.To explain the relationship between multiples of three and multiples of nine. 2.To explain the relationship between pairs of 3 and 9 times table facts that have the same product. 3.To solve problems using the relationship between pairs of 3 and 9 times table facts with the same product. 4.To solve problems using divisibility rules for divisors of 3 and 6. 5.To solve problems involving the 3, 6 and 9 times tables.
Links	Classroom Slides TO SLIDE 55 https://www.ncetm.org.uk/media/lxhbnouu/cp-year-4-unit-4-3-6-9-times-tables.pptx Oak- https://www.thenationalacademy/teachers/programmes/maths-primary-ks2/units/relationship-between-the-3-and-9-times-tables/lessons?sid-355bac=IWPQZS7Hya&sm=0&src=3 WhiteRose- https://assets.whiteroseeducation.com/new-schemes/Y4%20Autumn%20Block%204%20SOL%20Multiplication%20and%20division%20A.pdf https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf Greater Depth- https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf
Reasoning	Missing Numbers 72 = × Which pairs of numbers could go in the boxes? Think about different ways of representing multiplication facts using factor pairs. Making Links Eggs are bought in boxes of 12. I need 140 eggs. How many boxes do I need to buy? Use your knowledge of the 12 times table and estimation to solve. Use a Fact If 63 ÷ 9 = 7, what is: 126 ÷ 9? 252 ÷ 7? Explain how the first fact helped you to solve the others using multiplication and division facts. Making Links How can you use factor pairs to help solve this calculation: 13 × 12 Try breaking it up in different ways, like: 13 × 3 × 4 or 13 × 2 × 6 Which way do you find the easiest? Prove It What goes in the missing box? 6 × 4 = + 12 Prove your answer by showing your working out and checking it with the inverse. How Close Can You Get? Using the digits 3, 4 and 6, fill in the boxes: ___ ___ ___ × 7 How close can you get to 4500? What is the largest product you can make? What is the smallest? Explain your strategy. Always, Sometimes, Never? Is it always, sometimes or never true that an even number divisible by 3 is also divisible by 6? Is it always, sometimes or never true that the sum of four even numbers is divisible by 4? Use examples to test your ideas and explain your reasoning. Use the Inverse Use the inverse operation to check if these calculations are correct: 23 × 4 = 92 117 ÷ 9 = 14 Explain how you used the inverse operation for each. Size of an Answer Will the answer be greater or less than 300? 152 × 2 = 78 × 3 = 87 × 3 = 4 × 74 = Estimate each one before solving to check your thinking.



Unit 4	Represent counting in threes and sixes as the 3 and 6 times tableS
Problem solving	CLICK HERE 
Glossary	• Multiple - A multiple is the result of multiplying a number by another whole number. • Triple - To triple means to become three times as many or to multiply by three. • Digit sum - The sum of the digits that comprise a number. • Divisible / divisibility - Divisibility is when division of a number results in another whole number. A number is divisible by another if it can be shared exactly with no remainder. • Double / doubling - Doubling is the act of becoming twice as many. • Halve / halving - Halving means to divide into two equal parts. • Factor - Numbers we can multiply together to get another number are known as factors. • Product - The answer when two or more values are multiplied together • Adjacent - Adjacent means next to each other.
Stem sentences	_____ is a factor. _____ is a factor. The product of _____ and _____ is _____. _____ is the product of _____ and _____.

Representations

'How many wheels are there? Count in groups of three.'



$4 \times 3 = 12$ $3 \times 4 = 12$

Missing-number/symbol problems:
'Fill in the missing numbers.'

$10 \times 3 = 9 \times 3 + \square$ $6 \times 3 = \square \times 3 + 3$

$10 \times 3 - \square = 9 \times 3$ $6 \times 3 - 3 = \square \times 3$

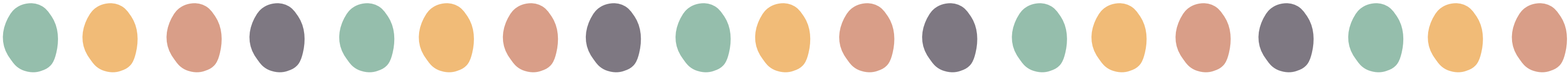
Number line:

0	3	6	9	12	15	18	21	24	27	30	33
---	---	---	---	----	----	----	----	----	----	----	----

Gattegno chart:

1000	2000	3000	4000	5000	6000	7000	8000	9000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

$0 \times 3 = 0$ $1 \times 3 = 3$ $2 \times 3 = 6$ $3 \times 3 = 9$ $4 \times 3 = 12$ $5 \times 3 = 15$ $6 \times 3 = 18$	$3 \times 0 = 0$ $3 \times 1 = 3$ $3 \times 2 = 6$ $3 \times 3 = 9$ $3 \times 4 = 12$ $3 \times 5 = 15$ $3 \times 6 = 18$
---	---



Y4 - Overview

	Autumn 1			Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2			
Unit	1	2	3		4	5		6	7	8	9	10	11	12	

- Number and place value
- Number facts
- Addition and subtraction
- Multiplication and division
- Fractions
- Geometry
- Other

Unit 4	Relationship between the 3 and 6 times tables and tests of divisibility (1 week)
Ready to progress	4NF-1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number of regular and irregular polygons.
NCETM documents	TEACHING POINT 3 https://www.ncetm.org.uk/media/fckpucaj/ncetm_spine2_segment08_y3.pdf#page=39
Small steps	To use knowledge of the 3 and 6 times tables to solve problems. 2. To explain the relationship between multiples of three and six. 3. To use the relationship between the 3 and 6 times tables to solve problems. 4. To use the divisibility rule for 3 with 3- and 4-digit numbers. 5. To use the divisibility rule for 6 to identify multiples of 6.
Links	Classroom Slides SLIDFE 55 TO 73 https://www.ncetm.org.uk/media/lxhbnouu/cp-year-4-unit-4-3-6-9-times-tables.pptx Oak - https://www.thenationalacademy/teachers/programmes/maths-primary-ks2/units/relationship-between-the-3-and-6-times-tables-and-tests-of-divisibility/lessons?sid=7666e1=zs9ayPjxIF&sm=0&src=3 WhiteRose - https://assets.whiteroseeducation.com/new-schemes/Y4%20Autumn%20Block%204%20SOL%20Multiplication%20and%20division%20A.pdf https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf Greater Depth - https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf
Reasoning	Missing Numbers 72 = □ × □ - Find all the factor pairs of 72. - Which of these include 3, 6, or 9 as one of the factors? - How do these factor pairs help you understand multiples and divisibility? Making Links Eggs come in boxes of 12. You need 140 eggs. - How many full boxes will you need? - Will there be any eggs left over? - Use multiplication facts and estimation to explain your method. - How does your knowledge of the 6 and 12 times tables help? Use a Fact If 63 ÷ 9 = 7, what is: 126 ÷ 9 = ? 252 ÷ 7 = ? - Explain how you used what you know about multiplication and division facts to solve these. - Which times tables helped you? Making Links How can you solve 13 × 12 using factor pairs? Try breaking it up: 13 × (3 × 4) 13 × (2 × 6) - Which method feels easiest? - Which method connects best to the 3 and 6 times tables? Prove It What goes in the missing box? 6 × 4 = □ + 12 Prove your answer. Can you use the inverse or a related fact from the 3 or 6 times tables? How Close Can You Get? Using the digits 3, 4, and 6, fill in the boxes: ___ ___ ___ × 7 How close can you get to 4500? What is the largest product? What is the smallest? Did any of your answers involve a multiple of 3, 6, or 9? Always, Sometimes, Never? Is it always, sometimes, or never true that an even number divisible by 3 is also divisible by 6? Is it always, sometimes, or never true that the sum of four even numbers is divisible by 4? Use examples from the 3, 6, and 9 times tables to explain your thinking. Use the Inverse Use the inverse to check: 23 × 4 = 92 117 ÷ 9 = 14 Use multiplication and division to prove if they are correct. Can divisibility rules help? Size of an Answer Will the answer be greater or less than 300? 152 × 2 = 78 × 3 = 87 × 3 = 4 × 74 = Estimate each one. Which questions link to the 3 or 9 times tables?

Problem solving

CLICK HERE

Glossary

- Multiple - A multiple is the result of multiplying a number by another whole number.
- Double / doubling - Doubling is the act of becoming twice as many.
- Halve / halving - Halving means to divide into two equal parts.
- Digit sum - The sum of the digits of a number is called its digit sum.
- Divisible / Divisibility - Divisibility is when division of a number results in another whole number. A number is divisible by another if it can be shared exactly with no remainder.
-

Stem sentences

For every one group of six, there are two groups of three.
Products in the 6x table are also in the 3x table.
The product of an even number and three is a product in the 6x table.
Six is double three, so _____ sixes are double _____ threes.
Three is half of six, so _____ threes are half of _____ sixes.

Number line:

0369121518212427303336

Gattegno chart:

1000	2000	3000	4000	5000	6000	7000	8000	9000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

Comparing counting in multiples of three and six:

Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Counting in 3s	✓			✓			✓			✓			✓			✓			✓			✓			✓
Counting in 6s	✓					✓							✓						✓						✓

12			
3	3	3	3
6		6	

5 × 3 =

15

5 × 6 =

30

half

double

Comparing the three and six times tables:

0 × 3 = 0	0 × 6 = 0
1 × 3 = 3	1 × 6 = 6
2 × 3 = 6	2 × 6 = 12
3 × 3 = 9	3 × 6 = 18
4 × 3 = 12	4 × 6 = 24
5 × 3 = 15	5 × 6 = 30
6 × 3 = 18	6 × 6 = 36
7 × 3 = 21	7 × 6 = 42
8 × 3 = 24	8 × 6 = 48
9 × 3 = 27	9 × 6 = 54
10 × 3 = 30	10 × 6 = 60
11 × 3 = 33	11 × 6 = 66
12 × 3 = 36	12 × 6 = 72

How many sixes are there?

There are five groups of six.'

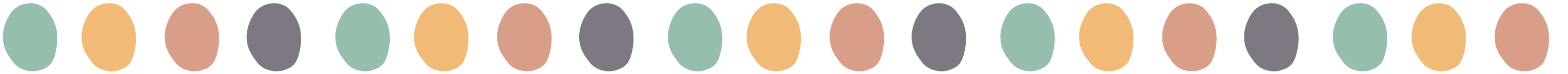
5 × 6 = 30

Five sixes are thirty.'

6 × 5 = 30

Six, five times is thirty.'

Representations

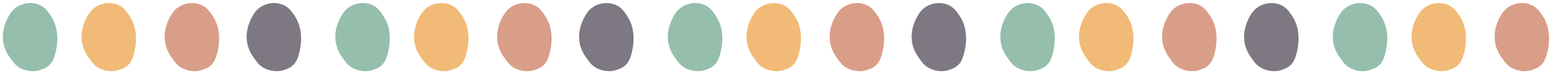


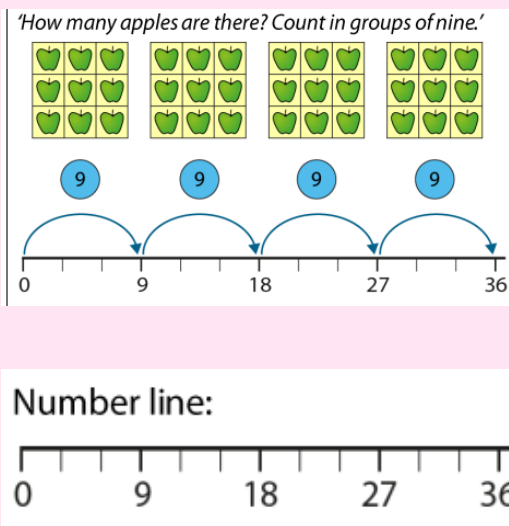
Y4- Overview

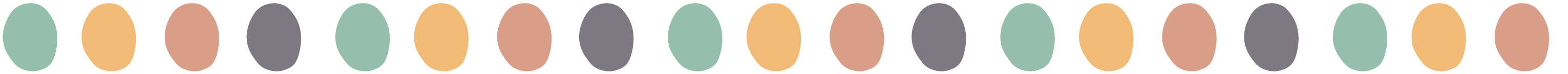
	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2		
Unit	1	2	3		4	5	6	7	8	9	10	11	12

- Number and place value
- Number facts
- Addition and subtraction
- Multiplication and division
- Fractions
- Geometry
- Other

Unit 4	Represent counting in nines as the 9 times table (1 week)
Ready to progress	4NF-1 Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number. of regular and irregular polygons.
NCETM documents	TEACHING POINT 4 https://www.ncetm.org.uk/media/fckpucaj/ncetm_spine2_segment08_y3.pdf#page=39
Small steps	1.To use knowledge of the 3 and 6 times tables to solve problems. 2. To explain the relationship between multiples of three and six. 3. To use the relationship between the 3 and 6 times tables to solve problems. 4. To use the divisibility rule for 3 with 3- and 4-digit numbers. 5. To use the divisibility rule for 6 to identify multiples of 6.
Links	Classroom Slides SLIDFE 73 TO 97 https://www.ncetm.org.uk/media/lxhbnouu/cp-year-4-unit-4-3-6-9-times-tables.pptx Oak- https://www.thenationalacademy/teachers/programmes/maths-primary-ks2/units/represent-counting-in-nines-as-the-9-times-table/lessons?sid-6878ae=bdxCOVRzFe&sm=0&src=3 WhiteRose- https://assets.whiteroseeducation.com/new-schemes/Y4%20Autumn%20Block%204%20SOL%20Multiplication%20and%20division%20A.pdf https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf Greater Depth- https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf
Reasoning	Missing Numbers 72 = × Making Links Eggs come in boxes of 12. You need 140 eggs. How many full boxes will you need? Will there be any eggs left over? Use a Fact If 63 ÷ 9 = 7, what is: 126 ÷ 9 = ? 252 ÷ 7 = ? Making Links How can you solve 13 × 12 using factor pairs? Try: 13 × (3 × 4) or 13 × (2 × 6) Prove It 6 × 4 = + 12 How Close Can You Get? ___ ___ ___ × 7 (using digits 3, 4, and 6) - How close can you get to 4500? Always, Sometimes, Never? Is an even number divisible by 3 also divisible by 6? Is the sum of four even numbers always divisible by 4? Use the Inverse Check: 23 × 4 = 92 Check: 117 ÷ 9 = 14 Size of an Answer Will the answer be greater or less than 300? 152 × 2 = 78 × 3 = 87 × 3 = 4 × 74 =



Unit 4	Represent counting in nines as the 9 times table (1 week)																																					
Problem solving	CLICK HERE 																																					
Glossary	- Factor - Numbers we can multiply together to get another number are known as factors. - Product - The answer when two or more values are multiplied together. - Multiple - A multiple is the result of multiplying a number by another whole number. - Adjacent - Adjacent means next to each other. - Array - An array is the layout of items (such as objects, numbers etc.) arranged in rows and / or columns. - Equation - An equation is used to show that one number or calculation is equal to another. - Operation - An operation is a mathematical process. Examples that you know are addition, subtraction, multiplication and division. Symbols are used to show the operations.																																					
Stem sentences																																						
Representations	'How many apples are there? Count in groups of nine.'  <table><tr><td>$0 \times 9 = 0$</td><td>$9 \times 0 = 0$</td><td><table><tr><th>Number of boxes of 9 apples</th><th>Total number of apples</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>9</td></tr><tr><td>2</td><td>18</td></tr><tr><td>3</td><td>27</td></tr><tr><td>4</td><td>36</td></tr><tr><td>5</td><td>45</td></tr><tr><td>6</td><td>54</td></tr></table></td></tr><tr><td>$1 \times 9 = 9$</td><td>$9 \times 1 = 9$</td><td></td></tr><tr><td>$2 \times 9 = 18$</td><td>$9 \times 2 = 18$</td><td></td></tr><tr><td>$3 \times 9 = 27$</td><td>$9 \times 3 = 27$</td><td></td></tr><tr><td>$4 \times 9 = 36$</td><td>$9 \times 4 = 36$</td><td></td></tr><tr><td>$5 \times 9 = 45$</td><td>$9 \times 5 = 45$</td><td></td></tr><tr><td>$6 \times 9 = 54$</td><td>$9 \times 6 = 54$</td><td></td></tr></table>	$0 \times 9 = 0$	$9 \times 0 = 0$	<table><tr><th>Number of boxes of 9 apples</th><th>Total number of apples</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>9</td></tr><tr><td>2</td><td>18</td></tr><tr><td>3</td><td>27</td></tr><tr><td>4</td><td>36</td></tr><tr><td>5</td><td>45</td></tr><tr><td>6</td><td>54</td></tr></table>	Number of boxes of 9 apples	Total number of apples	0	0	1	9	2	18	3	27	4	36	5	45	6	54	$1 \times 9 = 9$	$9 \times 1 = 9$		$2 \times 9 = 18$	$9 \times 2 = 18$		$3 \times 9 = 27$	$9 \times 3 = 27$		$4 \times 9 = 36$	$9 \times 4 = 36$		$5 \times 9 = 45$	$9 \times 5 = 45$		$6 \times 9 = 54$	$9 \times 6 = 54$	
$0 \times 9 = 0$	$9 \times 0 = 0$	<table><tr><th>Number of boxes of 9 apples</th><th>Total number of apples</th></tr><tr><td>0</td><td>0</td></tr><tr><td>1</td><td>9</td></tr><tr><td>2</td><td>18</td></tr><tr><td>3</td><td>27</td></tr><tr><td>4</td><td>36</td></tr><tr><td>5</td><td>45</td></tr><tr><td>6</td><td>54</td></tr></table>	Number of boxes of 9 apples	Total number of apples	0	0	1	9	2	18	3	27	4	36	5	45	6	54																				
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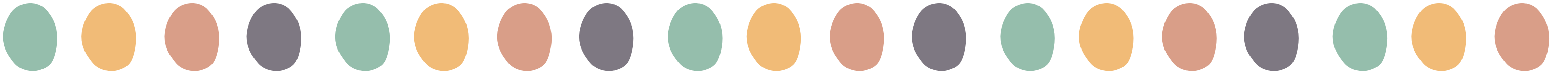


Y4- Overview

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2		
Unit	1	2	3		4	5	6	7	8	9	10	11	12

- Number and place value
- Number facts
- Addition and subtraction
- Multiplication and division
- Fractions
- Geometry
- Other

Unit 4	Relationship between the 3 and 9 times tables (1 week)
Ready to progress	4NF-I Recall multiplication and division facts up to 12×12, and recognise products in multiplication tables as multiples of the corresponding number. of regular and irregular polygons.
NCETM documents	TEACHING POINT 5 and 6 https://www.ncetm.org.uk/media/fckpucaj/ncetm_spine2_segment08_y3.pdf#page=39
Small steps	1.To explain the relationship between multiples of three and multiples of nine. 2.To explain the relationship between pairs of 3 and 9 times table facts that have the same product. 3.To solve problems using the relationship between the 3 and 9 times tables. 4.To solve problems using divisibility rules for divisors of 3, 6 and 9. 5.To solve problems involving the 3, 6 and 9 times tables.
Links	Classroom Slides SLIDFE 98 TO THE END https://www.ncetm.org.uk/media/lxhbnouu/cp-year-4-unit-4-3-6-9-times-tables.pptx Oak- https://www.thenationalacademy/teachers/programmes/maths-primary-ks2/units/relationship-between-the-3-and-9-times-tables/lessons?sid-355bac=IWPQZS7Hya&sm=0&src=3 WhiteRose- https://assets.whiteroseeducation.com/new-schemes/Y4%20Autumn%20Block%204%20SOL%20Multiplication%20and%20division%20A.pdf https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf Greater Depth- https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf
Reasoning	Missing Numbers 72 = × Making Links Eggs come in boxes of 12. You need 140 eggs. How many full boxes will you need? Will there be any eggs left over? Use a Fact If 63 ÷ 9 = 7, what is: 126 ÷ 9 = ? 252 ÷ 7 = ? Making Links How can you solve 13 × 12 using factor pairs? Try: 13 × (3 × 4) or 13 × (2 × 6) Prove It 6 × 4 = + 12 How Close Can You Get? ___ × 7 (using digits 3, 4, and 6) - How close can you get to 4500? Always, Sometimes, Never? Is an even number divisible by 3 also divisible by 6? Is the sum of four even numbers always divisible by 4? Use the Inverse Check: 23 × 4 = 92 Check: 117 ÷ 9 = 14 Size of an Answer Will the answer be greater or less than 300? 152 × 2 = 78 × 3 = 87 × 3 = 4 × 74 =



Unit 4

Represent counting in nines as the 9 times table (1 week)

Problem solving

CLICK HERE



- Glossary
- Multiple - A multiple is the result of multiplying a number by another whole number.
 - Triple - To triple means to become three times as many or to multiply by three.
 - Product - A product is the answer when two or more numbers are multiplied together
 - Digit sum - The sum of the digits that comprise a number.
 - Divisible / divisibility - Divisibility is when division of a number results in another whole number. A number is divisible by another if it can be shared exactly with no remainder.
 -

Stem sentences

For every one group of nine, there are three groups of three

Nine is triple three, so _____ nines is triple threes

or a number to be divisible by three, the sum of the digits of the number must be divisible by three.

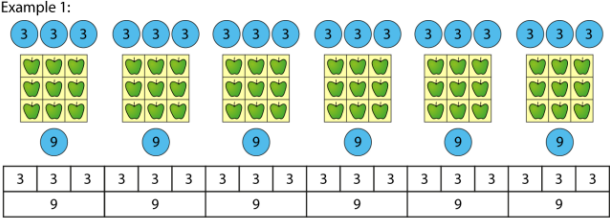
For every one group of six, there are two groups of three.

The product of an even number and three is a product in the six times table.

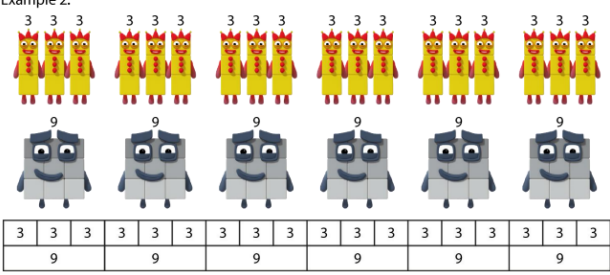
For a number to be divisible by 6, the number must be divisible by both two and three.

Number	Counting in 3s	Counting in 9s
0	✓	✓
1		
2		
3	✓	
4		
5		
6	✓	
7		
8		
9	✓	✓
10		
11		
12	✓	
13		
14		
15	✓	
16		
17		
18	✓	✓
19		
20		
21	✓	
22		
23		
24	✓	
25		
26		
27	✓	✓
28		
29		
30	✓	

Example 1:



Example 2:



2

×

9

=

18

×3

6

×

3

=

18

Representations