



Year 5 White Rose Maths (WRM) Autumn Scheme of Learning, 2017 Alignment with Mathletics

Year 5 – Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number – Place Value			Number – Addition and Subtraction		Statistics		Number – Multiplication and Division		Perimeter and Area		Consolidation
Spring	Number – Multiplication and Division			Number – Fractions						Number – Decimals & Percentages		Consolidation
Summer	Number – Decimals				Geometry- Properties of Shapes		Geometry- Position and Direction	Measurement- Converting Units		Measures Volume	Consolidation	

This alignment document has been based on the White Rose Maths scheme of learning available on the TES website.

www.tes.com/teaching-resource/wrm-schemes-of-learning-years-1-to-6-block-1-place-value-11652624



Year 5 White Rose Maths (WRM) Autumn Scheme of Learning, 2017

Mathletics

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Purpose:

The aim of this document is to support Mathletics teachers, who use the WRM scheme of learning, to make full use of the resources available within Mathletics. Whenever possible, activities, pages from the eBooks or learning experiences on Rainforest Maths have been matched to each of the small steps on the WRM scheme of learning.

In Mathletics, many eBooks are available in the student interface, however all eBooks are available to teachers through the teacher console. These topic-based eBooks contain practice and fluency exercises, along with application questions and games. Only a small selection of the relevant pages has been added to the document.

Links to Rainforest Maths, which can be found in the 'Play' area in the Mathletics student interface, have also been included as this resource has great visuals which work well on interactive whiteboards and give pupils further opportunities to practise their learning online.

Course selection:

A specific Mathletics course has been created in alignment with the WRM scheme of learning. You may wish to set this course for your class/groups.

England Yr 05 WRM Autumn Aligned



Data-Driven
Teaching and
Learning



Differentiation



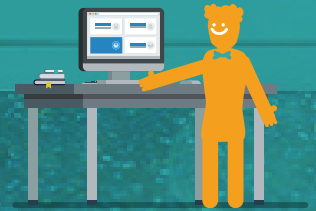
Feedback and
Reflection



Student Growth



Blended
Learning



Examples of alignment to Mathletics
Weeks 1-3 Number: Place Value

National Curriculum Objectives	WRM Small Steps
<ul style="list-style-type: none"> ▶ Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. ▶ Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. ▶ Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. ▶ Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000. ▶ Solve number problems and practical problems that involve all of the above. ▶ Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. 	<ul style="list-style-type: none"> ▶ Number to 10,000 ▶ Roman numerals to 1,000 ▶ Round to the nearest 10, 100 and 1,000 ▶ Number to 100,000 ▶ Compare and order numbers to 100,000 ▶ Round numbers within 100,000 ▶ Numbers to a million ▶ Counting in 10s, 100s, 1,000s, 10,000s and 100,000s ▶ Compare and order numbers to a million ▶ Round numbers to a million ▶ Negative numbers

Small step: Roman numerals to 1,000

<p>Convert to Roman Numerals.</p>	<p>Topic: Number and Place Value Activity: Converting to Roman Numerals to 1000 Support explains the value of symbols for Roman numerals and how the system works. Activity engages pupils in converting to Roman numerals. Adaptive activity begins with 2-digit numbers and progresses to 3-digit numbers. Activity: Converting from Roman Numerals to 1000 Pupils state the number that relates to the Roman numeral shown.</p>
<p>Looking at whole numbers – Roman numerals</p>	<p>eBook, F series: Number and place Value, page 9 Explains and models examples of Roman numerals beyond 1,000. Exercises to convert to and from Roman numerals.</p>
	<p>Rainforest Maths— Level F — Numbers: Roman numerals Explains and models Roman numerals up to 9,999. Click on the Roman numerals quiz for more practice.</p>



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Small steps:

- Round to the nearest 10, 100 and 1,000
- Round numbers within 100,000
- Round numbers to a million

50,834

Number



Nearest thousand

Topic: **Number and Place Value**

Activity: *Rounding Numbers*

Pupils round numbers to the nearest 10, 100 and 1,000.

Round and estimate – estimate

We use estimating when we want an approximate answer to a calculation. Rounding helps us do this. We round numbers so we can work with them more easily in our heads.

Look at $333 + 521$.
Rounded to the nearest 10, they are 330 and 520.
 $330 + 520 = 850$
Therefore $333 + 521$ is approximately 850.

eBook, F series: **Number and Place Value, page 20+**

Explains rounding and the concept of estimating.

Exercises to practise the concept, followed by some trickier problems to explore.

Rainforest Maths- Level F- Number – Rounding to nearest 10, 100 and 1000

Activity to practise rounding to nearest 10, 100 or 1,000.

Small steps:

- Number to 10,000
- Number to 100,000
- Numbers to a million

Topic: **Number and Place Value**

Activity: *Place Value to Millions*

Support shows pupils the value of each digit. The exercise is adaptive and pupils identify the value of digits up to a million.

Express in expanded notation

65,194

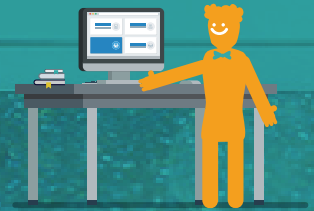
60000 + 5000 + 100 + 90 + 4



Topic: **Number and Place Value**

Activity: *Expanded Notation*

Pupils partition 5-digit numbers into 10,000s, 1000s, 100s, 10s and 1s.



Looking at whole numbers – read and write numbers to 999,999

For five- and six-digit numbers, we say the digits representing the thousands together, followed by the hundreds, tens and units.

100 Thousands	10 Thousands	Thousands	Hundreds	Tens	Ones
5	2	3	7	9	4

five hundred and twenty three thousand seven hundred and ninety four

When writing numbers in the thousands, we usually separate off the thousands digits with a comma. So, the number above would be written: **523,794**

Express the following in numerals:

- thirty two thousand four hundred and one

eBook, F series: [Number and Place Value](#), page 2
Explanation and exercises to secure understanding of place value for numbers to 999,999.

Small steps:

- Compare and order numbers to 100,000
- Compare and order numbers to a million

Looking at whole numbers – create and compare numbers

Use the following digits to make:



- The highest number
- The lowest odd number

eBook, F series: [Number and Place Value](#), page 4
Exercises to practise ordering numbers to 999,999.

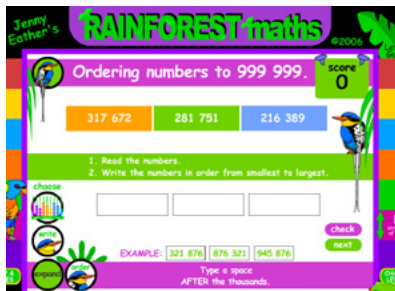
Looking at whole numbers – order numbers to 999,999

When ordering numbers, we need to pay close attention to the position and value of each digit. Which is the largest? 6,093 3,069 3,960 6,039

Circle the larger number:

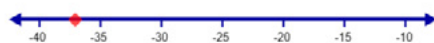
- 8,434 / 8,340
- 5,492 / 5,692
- 17,015 / 17,150

eBook, F series: [Number and Place Value](#), page 6
Exercises to secure understanding of comparing, creating and ordering numbers to 999,999.



Rainforest Maths – Level F: Number to 999 999 – Order
Activities to order three 6-digit numbers.

Small step: Negative numbers



The number shown is **-37** ✓

Topic: [Number and Place Value](#)
Activity: [Integers on a Number Line](#)
Pupils identify positive and negative numbers on a number line.

Looking at whole numbers – negative numbers

Whole numbers don't start from 0. We can also have negative whole numbers.



The most common use of negative numbers in real life is when discussing temperatures. Water freezes at 0°C, so 2 degrees below freezing is -2°C.

Sometimes you will hear negative numbers referred to as 'minus' numbers, but to avoid confusion with subtraction, it is clearer to describe, say, '-4' as negative 4 rather than 'minus 4'.

eBook, F series: [Number and Place Value](#), page 8
Explains and shows negative numbers on a number line.
Includes exercises to reinforce the concept.

The screenshot shows a digital learning interface titled "Positive and negative numbers." It features a central number line from -10 to 10. To the left of zero, the word "negative" is written in a blue box, with a sub-note: "Negative numbers are numbers less than zero. They are written with a - sign." Below this, a blue box says "less than zero". To the right of zero, the word "positive" is written in a green box, with a sub-note: "Positive numbers are numbers greater than zero. They are sometimes written with a + sign." Below this, a green box says "more than zero". In the center, above the zero on the number line, is a box with "0" and the text: "Zero is neither positive or negative." At the bottom left, there is a "choose" button with a plus sign icon, a text input field, and a "show" button.

Rainforest Maths — Level F — Number: Positive and Negative Numbers

Enables pupils to see counting patterns along a number line, going back past zero.



Examples of alignment to Mathletics

Weeks 4-5 Number: Addition and Subtraction

National Curriculum Objectives	WRM Small Steps
<ul style="list-style-type: none"> ▶ Add and subtract numbers mentally with increasingly large numbers. ▶ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ▶ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> ▶ Add whole numbers with more than 4-digits (column method) ▶ Subtract whole numbers with more than 4-digits (column method) ▶ Round to estimate and approximate ▶ Inverse operations (addition and subtraction) ▶ Multi-step addition and subtraction problems

When assigning activities with addition and subtraction calculations that do not have spaces for recording any regroupings, consider getting pupils to record the calculation in their Maths books, then answer the question on Mathletics. Pupils can then self-mark their work after each question, receiving instant feedback to support their learning. If they realise they have made a mistake they can do the correction in their book immediately. In Mathletics, pupils will be shown the correct answer. If they cannot see where they have gone wrong in their calculations they can access the support button in the activity and it will take them through the exact question they have just answered incorrectly.

Encourage students to use the strategies they are being taught in class and to use manipulatives if needed.

If they are not recording in their Maths books, it is necessary that pupils have whiteboards or other means of recording so that they can record their working out and use the strategies they are learning in class.

With most activities, including these calculation activities, questions are generated from a pool of questions allowing students to complete the activities more than once without getting the same set of questions.

Small step: Add whole numbers with more than 4-digits (column method)

$$\begin{array}{r}
 7,955 \\
 + 469 \\
 \hline
 8,424 \quad \checkmark
 \end{array}$$

Topic: **Addition and Subtraction**

Activity: ***Adding Colossal Columns (UK)***

This adaptive activity works through adding 3 digits and moves on to adding 4 digits, with examples that involve exchanging.



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Subtraction ... to 99 999
With regrouping (trading, exchanging or borrowing)

tth	th	h	t	o
		5	14	14
8	7	6	5	4
3	5	5	8	5

Work from right to left.
When the top number is smaller than the bottom number you have to REGROUP. When this happens, subtract from the coloured numbers.
Enter answers here.
check as you go.
next

Rainforest Maths — Level F — Addition

Exercises for pupils to practise addition with numbers up to 5 digits, both with and without regrouping.

Ten Thousands	Thousands	Hundreds	Tens	Ones
1	8	9	8	6
+	5	8	9	7
<hr/>				
<hr/>				

Topic: Addition and Subtraction

Activity: *Add Multi-Digit Numbers 2 (UK)*

Pupils perform addition of two numbers with minimum 4 digits. Exchanges always required.

Small step: Subtract whole numbers with more than 4 digits (column method)

Thousands	hundreds	tens	ones
7	9	7	8
-	6	7	9
<hr/>			
7	2	9	9

Subtract the digits in the thousands column.

Topic: Addition and Subtraction

Activity: *Subtracting Colossal Columns (UK)*

This adaptive activity works through subtraction requiring exchange with two 3-digit numbers before moving on to 4-digit numbers.

Subtraction ... to 99 999
No regrouping (trading, exchanging or borrowing)

tth	th	h	t	o
4	8	5	9	1
-	3	3	5	3
<hr/>				

score 0
check
next

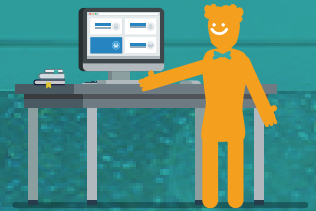
Rainforest Maths — Level F: Subtraction

Exercises for pupils to practise subtraction with numbers up to 99,999 without exchanges and then with exchanges.

Subtraction ... to 99 999
With regrouping (trading, exchanging or borrowing)

tth	th	h	t	o
		5	14	14
8	7	6	5	4
3	5	5	8	5

Work from right to left.
When the top number is smaller than the bottom number you have to REGROUP. When this happens, subtract from the coloured numbers.
Enter answers here.
check as you go.
next



Small step: Round to estimate and approximate

$$782 + 952 \approx$$

1,400	1,800
1,600	1,300

Hint:
Round each number
to the nearest
hundred.

Topic: **Addition and Subtraction**

Activity: **Estimate Sums**

Pupils use rounding to help them estimate the answer to additions with larger numbers.

Further Activities:

Estimate Differences

Estimation: Add and Subtract

Rainforest Maths – Level F – Rounding

Activities for pupils to practise rounding to the nearest 10, 100 and 1,000. Layout reinforces concept of rounding.

Small step: Multi-step addition and subtraction problems

Applying strategies – choosing when to add or subtract

Sometimes we come across problems that require us to both add and subtract or to make a choice between which one to use. Understanding key language terms can help with this decision.

Below are some terms you come across in addition and subtraction word problems. Colour any terms that ask you to add in red. Colour any terms that ask you to subtract in green.

Find the difference between ...	What is the total?	minus
Who has less?	How many altogether?	Who has more?
Find the difference between ...	How many more ... than ...?	plus ...

Stel and Marly's parents give each of them £10 pocket money each week. They must use some of it to buy their lunch from the school canteen every Friday.

eBook, G series: **Addition and Subtraction, page 15**

Explores the vocabulary of word problems that help pupils to decide whether a problem requires addition or subtraction.

Problem solving exercises include putting addition and subtraction into real-life scenarios.

Written methods – word problems

Some word problems have more than one step and may involve more than one type of operation. Look at this problem:

Tarik scored 10,357 points on level 1 of his new game. He then scored 9,321 points on level 2 but had a 3,000 point penalty for being slow. How many points did he have in total on the two levels?

Can you see which operations you need to do to solve this problem?

You need to add the points totals for the two levels, but then subtract the penalty points.

	T	Th	H	T	O	
	1	0	3	5	7	
+	9	3	2	1		
	1	9	6	7	8	

19,678 – 3,000 = 16,678

Solve these 2-step word problems:

- It is a 5,576-kilometre flight from London to New York. From New York to Los Angeles is 3,940 kilometres. If a plane has enough fuel to go 10,000 kilometres, could it get to Los Angeles from London without stopping? If so, how many kilometres-worth of fuel would it have left in its tanks when it lands?

eBook, F series: **Addition and Subtraction, page 25**

Explains and gives examples of two-step problems.

Includes exercises for pupils to practise two-step addition and subtraction problems.



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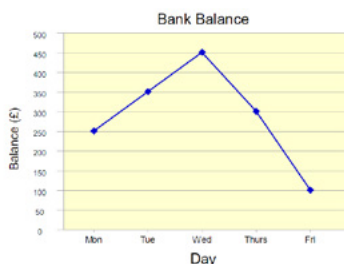
Examples of alignment to Mathletics Weeks 6-7 Statistics

National Curriculum Objectives	WRM Small Steps
<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables. 	<ul style="list-style-type: none"> Read and interpret line graphs Draw line graphs Use line graphs to solve problems Read and interpret tables Two way tables Timetables

Small steps:

- Read and interpret line graphs
- Draw line graphs
- Use line graphs to solve problems

What was the bank balance on Monday?



- £100 £450
 £350 £250

Topic: **Statistics**

Activity: *Line Graphs: Explanation*

Read and interpret information in a line graph. Some of the questions in this activity do include finding the range but it is well scaffolded through the support.

Rainforest Maths – Level F – Data

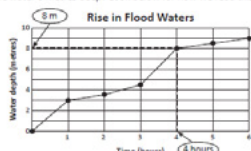
Explores pictograms, bar graphs, pie charts and line graphs.

Pupils can input data to construct a line graph.

Line graphs – reading line graphs

Line graphs show how something changes over time in relation to something else. In this topic, we'll look at different examples of line graphs. Look at the line graph below. See how the more time passed, the higher the water got?

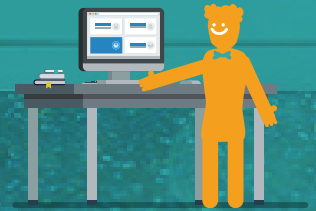
In which hour was the water 8 metres deep? Look below for how we read this information:



eBook, F series: **Statistics, page 9**

Explains how to read and also construct line graphs.

Includes exercises to practise finding information from line graphs and constructing graphs.



Small step: Read and interpret tables

Collecting and analysing data – frequency tables

Raw data is often collected in a frequency table. Tally marks are a quick way to record numbers. When we're finished, we add the marks to find totals:

Car Types in Car Park	Tally	Frequency
4WD		20
Sedan		17
Station wagon		20
Hatchback		14

1 Charlie sold drinks at the beach for an hour each day. He wrote down the drinks he sold each day:

Monday	Coke	Lemonade	Water	Juice			
Tuesday	Juice	Juice	Coke	Coke			
Wednesday	Water	Juice	Juice	Juice	Coke	Lemonade	

eBook, F series: Statistics, page 15

Explains how to read data from a table and gives examples of how tables are used from real-life scenarios. Includes exercises to practise finding information and putting information in a table.

How many children did not choose orange as their favorite color?

Color	Boy	Girl
Red	4	2
Purple	5	2
Yellow	2	5
Blue	4	3
Green	3	5
Orange	3	5

Topic: Statistics

Activity: *Interpreting Data Tables*

This activity includes two-step problems requiring careful reading and interpreting of the table.

Small step: Timetables

How long does it take to travel from Cambridge to Turtle Street?

TIMETABLE	
Cambridge	3:20
St Peter's	3:45
Holden	4:21
Turtle Street	4:58
Richmond	5:22
Davidson	5:34
Willon	5:46
Quedale	6:08
Fog's Gap	6:20
Trinity	6:34

1 hr 34 min

1 hr 36 min

1 hr 38 min ✓

1 hr 40 min

Topic: Statistics

Activity: *Using Timetables*

This adaptive activity begins by asking pupils to locate information on the timetable. It progresses to asking pupils to work out the time that has elapsed between two times on the timetable.



Examples of alignment to Mathletics

Weeks 8–9 Number: Multiplication and Division

National Curriculum Objectives	WRM Small Steps
<ul style="list-style-type: none"> ▶ Multiply and divide numbers mentally drawing upon known facts. ▶ Multiply and divide whole numbers by 10, 100 and 1000. ▶ Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. ▶ Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3). ▶ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ▶ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. ▶ Establish whether a number up to 100 is prime and recall prime numbers up to 19. 	<ul style="list-style-type: none"> ▶ Multiples ▶ Factors ▶ Common factors ▶ Prime numbers ▶ Square numbers ▶ Cube numbers ▶ Inverse operations (Multiplication and Division) ▶ Multiply by 10, 100 and 1,000 ▶ Divide by 10, 100 and 1,000 ▶ Multiply and divide by multiples of 10, 100 and 1,000

Small step: Multiples

Topic: **Multiplication and Division**

Activity: **Multiples**

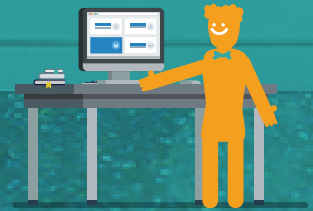
The support area shows pupils how they can place the multiples of a number on a number line and then use this to check against the numbers in the question.

Small step: Factors

Topic: **Multiplication and Division**

Activity: **Factors**

The support area models how to list all the factors of a number and then organise the factors into an ordered list.



Multiplication facts – factors and multiples

Factors are the numbers we multiply together to get to another number:

factor × factor = whole number

How many factors does the number 12 have? $4 \times 3 = 12$, $6 \times 2 = 12$, $1 \times 12 = 12$
4, 3, 6, 2, 1 and 12 are all factors of 12.

1 List the factors of these numbers:

a 18

b 25

c 14

d 9

eBook, F series: [Multiplication and Division](#), page 1
Explains concept of multiples and factors and includes exercises to practise finding multiples and factors.

Small step: Prime numbers

Multiplication facts – prime and composite numbers

A factor is a number that divides equally into another number.

$5 \times 4 = 20$
20 arranged in 5 rows means 4 in each row.
5 and 4 are factors of 20.

1 How many ways can 24 objects be arranged? Use the arrays below to complete the facts:

a × = 24

b × = 24

eBook, F series: [Multiplication and Division](#), page 3
Explains prime and composite numbers and provides exercises to secure understanding.

Is 11 prime or composite?

11 → 1 & 11

Only factors are itself and 1

Composite

More than two factors

2 factors
11 is prime.

Count the factors.

Topic: [Multiplication and Division](#)
Activity: *Prime or Composite?*
Pupils are given a number and asked to decide if it is a prime or composite number.
Includes a video that explains the support area further.

Small step: Square numbers

Multiplication facts – square numbers

A square number is a number multiplied by itself.

$1 \times 1 = 1$ $2 \times 2 = 4$ $3 \times 3 = 9$
 $1^2 = 1$ $2^2 = 4$ $3^2 = 9$

1 Show these square numbers on the grid and write what they are equal to:

a $4^2 =$ b $6^2 =$ c $5^2 =$ d $3^2 =$ e $7^2 =$

eBook, F series: [Multiplication and Division](#), page 5
Explains concept of square numbers with activities designed to practise learning.

$4^2 = 4 \times 4$
 $= 16$

1^2	1
2^2	4
3^2	9
4^2	16
5^2	25
6^2	36
7^2	49
8^2	64
9^2	81
10^2	100
11^2	121
12^2	144

Topic: [Multiplication and Division](#)
Activity: *Square Roots*
Although this activity is focused on finding the square roots, the support uses the square numbers to show the pupils the square root. Also included is a video (see below).



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Area = 5×5
 $= 5^2$
 $= 25$

$25 = \square \times \square$

$2 \times 2 = 4$ ✗
 $6 \times 6 = 36$ ✗

Topic: **Multiplication and Division**

Activity: **Square Roots**

This video explains the relationship between area, square numbers and square roots.

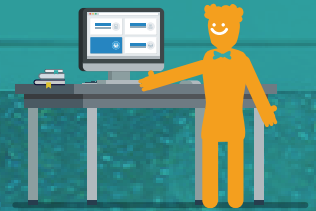
Square numbers. SYMBOLS: \square square, $\sqrt{\quad}$ square root

Score 0

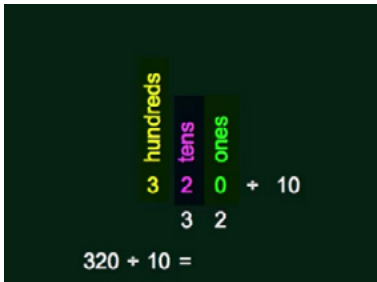
Square numbers
 Square numbers can be represented in the shape of a square. They are made when a number is multiplied by itself.
 $3^2 = 9$ Nine is a square number.
 Or: $9 \div 3 = 3$ The square root of 9 is 3.

Choose square numbers

1	2	3	4	5	6	7	8	9	10	11	12
12	13	14	15	16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31	32	33	34	35
36	37	38	39	40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69	70	71
72	73	74	75	76	77	78	79	80	81	82	83
84	85	86	87	88	89	90	91	92	93	94	95
96	97	98	99	100	101	102	103	104	105	106	107
108	109	110	111	112	113	114	115	116	117	118	119
120	121	122	123	124	125	126	127	128	129	130	131
132	133	134	135	136	137	138	139	140	141	142	143
144	145	146	147	148	149	150	151	152	153	154	155
156	157	158	159	160	161	162	163	164	165	166	167
168	169	170	171	172	173	174	175	176	177	178	179
180	181	182	183	184	185	186	187	188	189	190	191
192	193	194	195	196	197	198	199	200	201	202	203
204	205	206	207	208	209	210	211	212	213	214	215
216	217	218	219	220	221	222	223	224	225	226	227
228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251
252	253	254	255	256	257	258	259	260	261	262	263
264	265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286	287
288	289	290	291	292	293	294	295	296	297	298	299
300	301	302	303	304	305	306	307	308	309	310	311
312	313	314	315	316	317	318	319	320	321	322	323
324	325	326	327	328	329	330	331	332	333	334	335
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1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115
1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127
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1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175
1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187
1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199
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Small step: Divide by 10, 100 and 1,000



Topic: **Multiplication and Division**
Activity: *Dividing by 10, 100 and 1,000*

The video gives a clear explanation and models what happens when a number is divided by 10.
The animated support also models division by 100 and 1,000.

Mental division strategies – divide by 10s, 100s and 1,000s

When we divide by 10 we move the number one place value to the right.
When we divide by 100 we move the number two place values to the right.
When we divide by 1,000 we move the number three place values to the right.
Look what happens to 45,000 when we apply these rules:

Ten Thousands	Thousands	Hundreds	Tens	Ones
4	5	0	0	0
	4	5	0	0
		4	5	0
			4	5

+ 10
+ 100
+ 1,000

1 Divide the following numbers by 10, 100 and 1,000:

a

T	H	T	O
4	5	0	0

b

T	H	T	O
4	3	0	0

eBook, F series: **Multiplication and Division**, page 17
Explains dividing by 10s, 100s and 1,000s.
Activities to practise.

Small step: Multiply and divide by multiples of 10, 100 and 1,000

Multiplication ... by tens. score 1

x	10	100	1000
	one zero	two zeros	three zeros
704			

Practice multiplying by 10s.
Don't forget the zeros.

28 704
x 70 x 70

check next

Enter answers in the green boxes.

Rainforest Maths – Level F – **Multiplication by 10s**
Exercises to practise multiplying by 10, 100 and 1,000 and also by multiples of 10.

Small step: Inverse operations (Multiplication and Division)

Make the multiplication and division facts in the fact family.

7 9 63
7 × 9 = 63
9 × 7 = 63

The three numbers in the fact family make two multiplication facts.

Topic: **Multiplication and Division**
Activity: *Fact Families: Multiply and Divide*
Practise multiplication and division facts through their inverse relationship.

Strategies ... inverse operations. score 0

A way to reverse a multiplication fact to get two division facts.
Multiplication and division are inverse operations.
You can use multiplication facts to check division.

(opposites or reverse operations)

4 × 8 = 32
SO 32 ÷ 4 = check next
AND 32 ÷ 8 =

Enter numbers in the boxes.

Rainforest Maths – Level F: **Multiplication strategies – inverse operations**
Use multiplication facts to find the two related division facts.



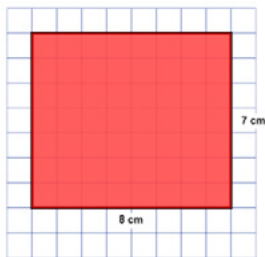
Examples of alignment to Mathletics

Weeks 10-11 Perimeter and Area

National Curriculum Objectives	WRM Small Steps
<ul style="list-style-type: none"> ▶ Measure and calculate the perimeter of composite rectilinear shapes in cm and m. ▶ Calculate and compare the area of rectangles (including squares), and including using standard units, cm^2, m^2 estimate the area of irregular shapes. 	<ul style="list-style-type: none"> ▶ Measure perimeter ▶ Calculate perimeter ▶ Find unknown lengths ▶ Area of rectangles ▶ Area of compound shapes ▶ Estimate and approximate area

Small steps:

- Measure perimeter
- Calculate perimeter



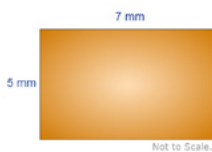
Perimeter = 30 cm ✓

Topic: Length, Perimeter and Area

Activity: *Perimeter of Shapes*

Rectangles and squares are shown on a grid. Pupils calculate the perimeter in metric units.

Calculate the perimeter.



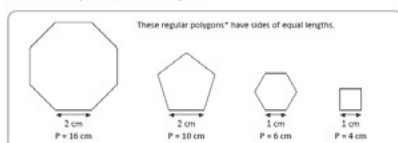
Perimeter = mm

Topic: Length, Perimeter and Area

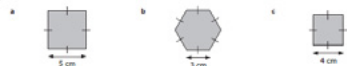
Activity: *Calculate Perimeter of Squares and Rectangles*

No grid used in this activity. Calculate the perimeter in metric units.

Perimeter – perimeter of shapes



Find the perimeter of these regular polygons*



eBook, F series: Length, Perimeter and Area, page 16+

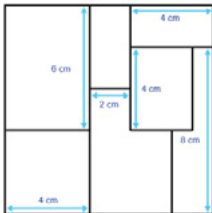
Explains the concept of measuring perimeter.

Includes exercises to measure perimeter of squares and rectangles, then other regular shapes, moving on to irregular shapes.



Small step: Find unknown lengths

Find the perimeter of this rectangle:



- all labels
- only horizontal labels
- only vertical labels

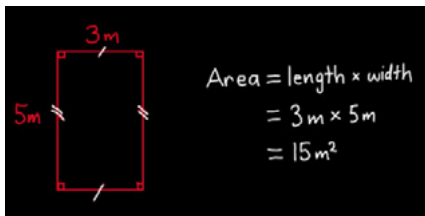
The perimeter is 40 cm ✓

Topic: Length, Perimeter and Area

Activity: *Perimeter Detectives 1*

Students are shown only some of the lengths for a rectangle or square and must calculate the length of each side to work out the perimeter.

Small step: Area of rectangles



Topic: Length, Perimeter and Area

Activity: *Area: Squares and Rectangles*

The video accompanying this activity explains and models how to calculate perimeter and area of squares and rectangles. It also explains how to find the area of a triangle.

Activity: The activity practises the learning covered in the video which calculates the area of squares and rectangles.

Area – square centimetres (cm²) and square metres (m²)

We can use this formula to find the area of rectangles:
Area = length × width
Area = 3 × 5 = 15 cm²

1 Find the areas of these shapes:

a Area = cm²

b Area = cm²

c Area = cm²

eBook, F series: Length, Perimeter and Area, page 25

Explains concept of measuring area of rectangles.

Exercises to practise.

Small step: Area of compound shapes

Area – find area of irregular and composite shapes

Not all shapes are regular rectangles. We have to find ways to measure the areas of composite and other irregular shapes as well. One way is to break the shape into rectangles, find these areas, and then add them together.

1 Find the area of the shaded triangles inside the rectangles:

a Area =

b Area =

eBook, F series: Length, Perimeter and Area, page 26

Explores measuring area of compound shapes and provides more challenging exercises to explore the concept of area.

Find the shaded area.

Area = ft²

Not to scale
All units are in ft.

Topic: Length, Perimeter and Area

Activity: *Area: Compound Figures*

Pupils are encouraged to calculate the area of the compound figures by splitting the overall shape into smaller, familiar shapes (rectangles and squares).

Live Mathletics

What's in level 4?

Addition from 1 - 100 $35 + 30 + 10 = ?$ <input type="text"/> <input type="button" value="Check"/>	Subtraction from 1 - 100 $30 - 6 = ?$ <input type="text"/> <input type="button" value="Check"/>
Times tables to 10×10 $8 \times 6 = ?$ <input type="text"/> <input type="button" value="Check"/>	Doubles and halves up to 100 Half of 96 = ? <input type="text"/> <input type="button" value="Check"/>
2x, 3x, 4x, 5x and 10x division facts $30 \div 3 = ?$ <input type="text"/> <input type="button" value="Check"/>	Addition from 1 - 50 with a missing addend $25 + ? = 50$ <input type="text"/> <input type="button" value="Check"/>
Times tables to 10×10 with a missing factor $7 \times ? = 49$	

Live Mathletics engages pupils in one minute games where they are challenged to recall Maths facts.

To support progress in Year 5, pupils should use Level 4 and possibly Level 5 as a challenge.

Teachers can set minimum levels in Live Mathletics by clicking the switch to old Mathletics button, selecting results, and selecting minimum levels on the left-hand side of the page. Students can still access higher levels once you set a minimum level, so encourage students to challenge themselves and move on to the next level when they are ready.

(Note: Live Mathletics levels are a sliding scale, with no relationship to classes or old National Curriculum levels.)



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For more information about Mathletics,
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