



Year 2 White Rose Maths Hub (WRMH)

Autumn Scheme of Learning, 2017

Alignment with Mathletics

Year 2 – 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					Measurement: Money		Number: <u>Multiplication</u> and Division	
Spring	Number: Multiplication and <u>Division</u>		Statistics		Geometry: Properties of Shape			Number: Fractions			Measurement: length and height	Consolidation
Summer	Position and direction			Problem solving and efficient methods		Measurement: Time		Measurement: Mass, Capacity and Temperature			Investigations	

This alignment document has been based on the White Rose Maths Hub 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 2 White Rose Maths Hub (WRMH) Autumn Scheme of Learning, 2017

Mathletics

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Examples of alignment to Mathletics

Weeks 1–3 Number: Place Value	01
Weeks 4–8 Number: Addition and Subtraction	05
Week 9–10 Measurement: Money	12
Weeks 11 and 12 Multiplication and Division	14

Purpose:

The aim of this document is to support Mathletics teachers, who use the WRMH 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 WRMH 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 WRMH scheme of learning. You may wish to set this course for your class/groups. When assigning activities with 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. Encourage students to use the strategies they are being taught in class and to use manipulatives if needed.

England Yr 02 WRMH Autumn Aligned



Data-Driven
Teaching and
Learning



Differentiation



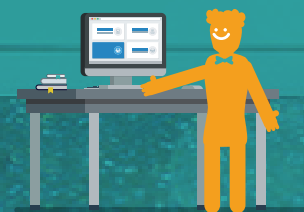
Feedback and
Reflection



Student Growth



Blended
Learning



Examples of alignment to Mathletics

Weeks 1-3 Number: Place Value

National Curriculum Objectives	WRMH Small Steps
<ul style="list-style-type: none"> ▶ Read and write numbers to at least 100 in numerals and in words. ▶ Recognise the place value of each digit in a two-digit number (tens, ones). ▶ Identify, represent and estimate numbers using different representations, including the number line. ▶ Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs. ▶ Use place value and number facts to solve problems. ▶ Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward. 	<ul style="list-style-type: none"> ▶ Count objects to 100 and read and write numbers in numerals and words ▶ Represent numbers to 100 ▶ Tens and ones with a part whole model ▶ Tens and ones using addition ▶ Use a place value chart ▶ Compare objects ▶ Compare numbers ▶ Order objects and numbers ▶ Count in 2s, 5s and 10s ▶ Count in 3s

Small step: Count objects to 100



Rainforest Maths — Level B — Number — How many frogs?

Shows frogs, blocks or counters, arranged in tens and ones. Pupils count the objects and select the correct number.

Small step: Read and write numbers in numerals and words

Write as a number:

twenty-eight

28

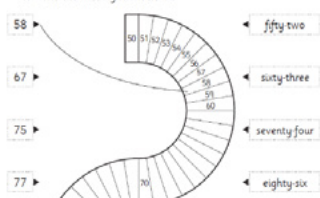
Topic: **Number and Place Value to 100**

Activity: **Reading Numbers to 30**

Pupils write the numeral for the number shown in words (up to 30).

Numbers to 100 – location and order

1 Draw lines to join the number to the right step. It might help to write the missing numbers in.



eBook, B series: **Numbers**, page 54

Use the order of numbers from 50 to 100 to locate a number on the 'ladder' and the matching words for that number.



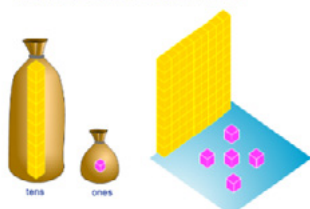
Year 2 White Rose Maths Hub (WRMH) Autumn Scheme of Learning, 2017

Mathletics

Small step: Represent numbers to 100

N - Number and Place Value to 100 (1) - Make Big Numbers Count

Put rods and blocks on the mat to make 95.

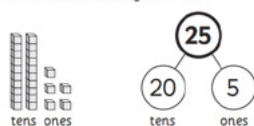


Topic: **Number and Place Value to 100**

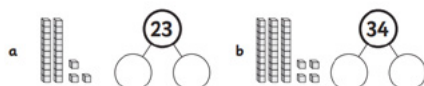
Activity: **Make Big Numbers Count**

This activity is about representing 2-digit numbers as tens and ones rods and cubes. Pupils drag the 10 rods and the one cubes to make the number shown.

Tens and ones can be used showing this model.



1 Count the tens and the ones. Fill in the whole/part model.



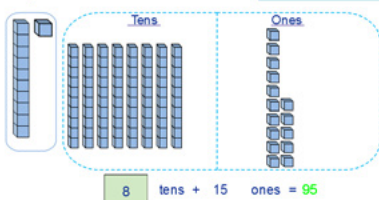
eBook, C series: **Numbers**, page 21

Partition a 2-digit number into tens and ones using a part whole model.

Small step: Tens and ones using addition

Make 95.

You must use 15 ones. How many tens will you need?



Hint

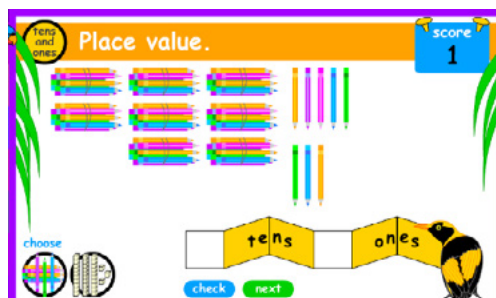
You can repartition tens blocks into ones by dragging them to the ones side of the mat.

Topic: **Number and Place Value to 100**

Activity: **Repartition Two-digit Numbers**

Easier questions require the partitioning of numbers into tens and ones; medium and harder level questions involve the partitioning of numbers in non-standard ways eg, 74 repartitioned as 6 tens and 14 ones. Pupils are able to drag a tens rod into the ones column and see the rod split into 10 ones.

Small step: Use a place value chart



Rainforest Maths — Level B — Place Value

Interpret the place value model, enter the number of tens and ones into a place value chart and click check. The chart then folds to show the 2-digit number.

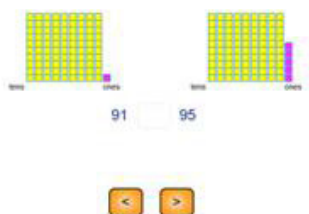


Small steps:

- Compare objects
- Compare numbers

N - Number and Place Value to 100 (1) - Compare

Select: < or >



Topic: **Number and Place Value to 100**

Activity: **Compare Numbers to 100**

Pupils compare 2-digit numbers represented in both numerals and place value blocks. They use greater than and less than symbols to compare.

Similar Activity: **Compare Numbers to 50**

Pupils compare 2-digit numbers represented in both numerals and place value blocks. They use greater than and less than symbols to compare.

4 What could the mystery numbers be?

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| a I am less than 70.
I am more than 65.
I could be <input type="text"/> | b I am less than 95.
I am more than 90.
I could be <input type="text"/> |
| c I am less than 30.
I am more than 20.
I have a 5 in me.
I am <input type="text"/> | d I am less than 100.
I am more than 80.
I have a 9 in me.
I could be <input type="text"/> |

eBook, B series: **Teachers Book, Assessment – Numbers to 100, page 17**

Read the comparative descriptions to find the possibilities for the mystery numbers.

Arrange in order.



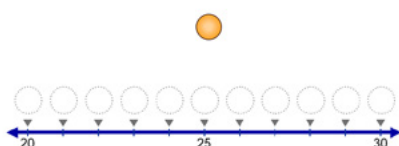
Topic: **Number and Place Value to 100**

Activity: **Arranging Numbers**

Pupils compare two numbers within 100 to decide which is smallest and which is biggest.

Small step: Order objects and numbers

Place the point on the number line to show the number: 26.

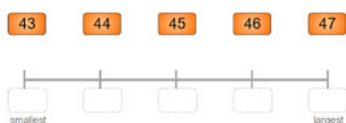


Topic: **Number and Place Value to 100**

Activity: **Number Lines**

In this adaptive activity, the first level has each number labelled on the number line, but then moves to labelling every multiple of 2 and then multiple of 5. This requires the pupils to use their understanding of the order of numbers to place the point on the number line.

Place these numbers in order on the number line.



Topic: **Number and Place Value to 100**

Activity: **Number Line Order**

Pupils place 2-digit numbers in order on a number line from smallest to largest.



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Mathletics

Small step: Count in 2s, 5s and 10s

1 of 10 N - Number and Place Value Counting - Count by Twos

What is the missing number?

13, 15, 17, 21

+2 +2 +2 +2

13, 15, 17, 19, 21

Skip count by twos.

Topic: [Number and Place Value to 100](#)

Activity: [Count by Twos](#)

Pupils count on in 2s from various starting numbers, to identify the missing number.

Similar activities:

[Count by Fives](#)

[Count by Tens](#)

1 of 10 N - Number and Place Value Counting - Count by 2s, 5s and 10s

Count forward by 2s to complete the number line.



Topic: [Number and Place Value to 100](#)

Activity: [Count by 2s, 5s and 10s](#)

This activity shows some numbers on a number line and asks pupils to count in 2s, 5s and 10s in order to enter the missing numbers.

Counts both forward and backward.

Complete the pattern.

60 50 40 30 20 10

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
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



Next

Topic: [Number and Place Value to 100](#)

Activity: [Counting on a 100 Grid](#)

This activity uses a hundred square to support pupils in recognising counting patterns. Pupils can click to shade the numbers on the grid as they count. Once an answer is entered, the correct pattern is shaded on the grid.

The counting patterns are not restricted to multiples of 2, 5 or 10.

123 Butterfly count ... by 5s.



Rainforest Maths — Level B — Counting in 2s, 5s and 10s

The visual model allows you to add or subtract groups to practise counting in 2s, 5s or 10s.

123 Patterns ... 5s forwards.

score

clear

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 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

show 5s

Use the number lines to help.
Draw or trace jumps.

60 65 70 75

check

Rainforest Maths — Level B — Patterns — 2s, 5s and 10s

Illustrates the pattern when counting in 5s or 10s on a number line and for 2s on a hundred square.

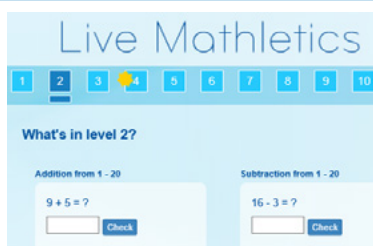


Examples of alignment to Mathletics

Weeks 4–8 Number: Addition and Subtraction

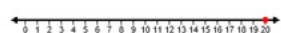
National Curriculum Objectives	WRMH Small Steps
<ul style="list-style-type: none"> ▶ Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. ▶ Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. ▶ Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ▶ Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods. ▶ Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. 	<ul style="list-style-type: none"> ▶ Fact families – Addition and subtraction bonds to 20 ▶ Check calculations ▶ Compare number sentences ▶ Related facts ▶ Bonds to 100 (tens) ▶ Add and subtract 1s ▶ 10 more and 10 less ▶ Add and subtract 10s ▶ Add a 2-digit and 1-digit number – crossing ten ▶ Subtract a 1-digit number from a 2-digit number – crossing ten ▶ Add two 2-digit numbers – not crossing ten – add ones and add tens ▶ Add two 2-digit numbers – crossing ten – add ones and add tens ▶ Subtract a 2-digit number from a 2-digit number – not crossing ten ▶ Subtract a 2-digit number from a 2-digit number – crossing ten – subtract ones and tens ▶ Bonds to 100 (tens and ones) ▶ Add three 1-digit numbers

Small step: Fact families – Addition and subtraction bonds to 20



Live Mathletics: Level 2

In 1-minute bursts, pupils can practise addition and subtraction facts to 20. Develops fluency and accurate recall.



$$20 - 2 = \boxed{}$$



$$12 + \boxed{} = 20$$

Topic: Add and Subtract

Activity: *All about Twenty*

This activity provides addition and subtraction problems with bonds to 20, represented on a number line.

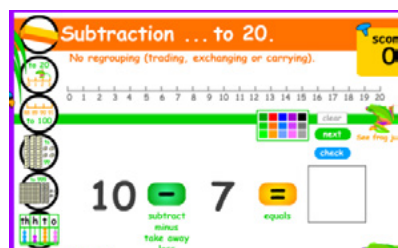


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Mathletics



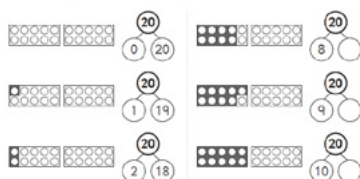
Rainforest Maths — Level D — Addition to 20
Exercises to practise counting on to add.



Rainforest Maths — Level D — Subtraction to 20
Exercises to practise counting back to subtract.

Addition and subtraction facts – number bonds to 10 and 20

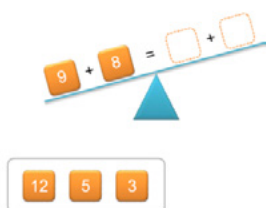
1 Check these part-whole diagrams for number bonds to 20.



eBook: Operations with Number, page 11
Part-whole models showing bonds to 20. Pupils find the missing bond after reading the explanation.

Small step: Compare number sentences

Which numbers balance the scale?

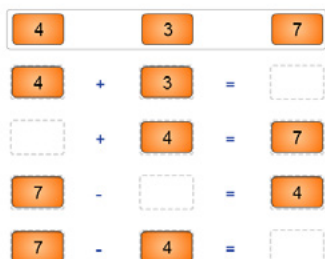


Topic: Add and Subtract
Activity: Balance Additions to 20

This activity explores the use of the equals sign and balanced number sentences.

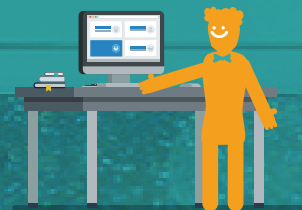
Small step: Related facts

Make the addition and subtraction facts in the fact family.



Topic: Add and Subtract
Activity: Fact families: Add and Subtract

Three numbers are shown and pupils must complete the four related addition and subtraction number sentences for those numbers.



Small step: Bonds to 100 (tens)

Addition and subtraction facts – related facts to 100

When we write down all of the related facts for a number sentence we call it a fact family.

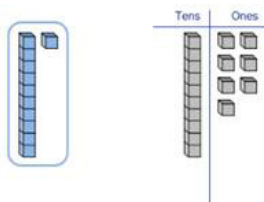
Here's an example:

$100 - 10 = 90$ $100 - 90 = 10$ $90 + 10 = 100$ $10 + 90 = 100$

You will need: a partner, scissors, 10 sticks

eBook, C series: Operations with Numbers, page 26
Games and exercises related to bonds to 100 (in tens).

Small step: Add and subtract 1s



What number is 1 less than 17?

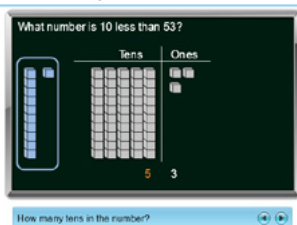
Topic: Add and Subtract

Activity: 1 more, 2 less

Pupils remove ones cubes to find the number 2 less, or drag in a cube to add 1 and find the number 1 more.

Small step: 10 more and 10 less

1 of 10 N – Number and Place Value Counting
– 10 More, 10 Less



How many tens in the number?

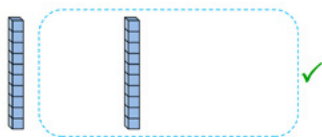
Topic: Add and Subtract

Activity: 10 more, 10 less

Place value models in the support demonstrate how adding or subtracting 10 changes a number.

Small step: Add and subtract 10s

$60 - 50 =$ ✓



Topic: Add and Subtract

Activity: Subtract Tens

Pupils subtract tens with the use of place value models.

Addition – adding tens

If we can count on in ones, then we can count on in tens.
Look at $17 + 20 =$
We start at 17 and jump down the 100 square counting in tens: 17, 27, 37 so, $17 + 20 = 37$

1. Practise counting in 10s by reading down the columns on the 100 square and loud to a partner. Now try doing it without looking at the 100 square. Give yourself a tick for each column you can do.

2. Use the 100 square to help you count on. Finish the facts.

a $14 + 10 =$ b $34 + 20 =$ c $27 + 10 =$
d $25 + 30 =$ e $45 + 20 =$ f $35 + 30 =$

3. Create your own addition facts by writing a number on the left for each fact. Swap with a partner and answer each other's facts.

a $\square + 20 =$ b $\square + 10 =$
c $\square + 10 =$ d $\square + 30 =$

eBook, C series: Operations with Number, page 35 and 36
Use a hundred square as a visual support when adding on tens.

Page 41

Add multiples of ten together.

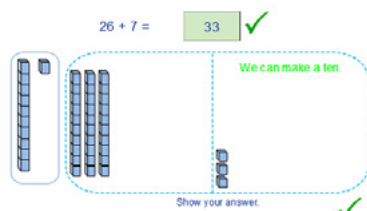


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Mathletics

Small step: Add a 2-digit and 1-digit number – crossing ten

8 of 10 N – Add and Subtract (2) – Adding to 2-digit numbers

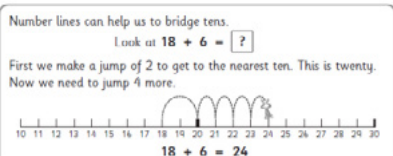


Topic: **Add and Subtract**

Activity: **Adding to 2-digit numbers**

Pupils can use the place value model to add the tens and ones. If 10 ones cubes are created, the model will show those ones being converted into a tens rod.

Addition – bridge to 10

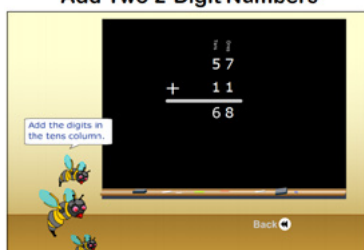


eBook, C series: **Operations with number, page 40**

Explanation and exercises related to bridging 10 on the number line as an addition strategy.

Small step: Add two 2-digit numbers – not crossing ten – add ones and add tens

Add Two 2-Digit Numbers



Topic: **Add and Subtract (Written Method)**

Activity: **Add Two 2-Digit Numbers**

This activity provides column addition with no crossing tens.

Addition – adding two 2-digit numbers

We can use a 100 square to help us add tens and ones. We count **down** the 100 square to add the tens and **across** to the right to add the ones.

$25 + 23 = ?$

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
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

$25 + 23 = ?$

We find 25. We split 23 into 2 tens and 3 ones.

We make 2 jumps of 10 down the 100 square.

Then we make 3 jumps of one across the 100 square.

$25 + 23 = 48$

1 Use the 100 square to help you solve these problems.

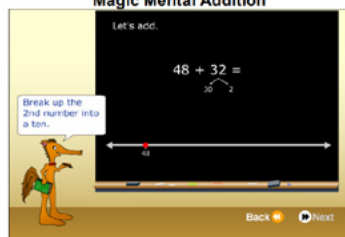
a $33 + 21 =$ b $17 + 13 =$ c $11 + 21 =$

eBook, C series: **Operations with Numbers, page 42**

Illustrates adding 2-digit numbers using a 100 square – followed by exercises and activities for practice.

Small step: Add two 2-digit numbers – crossing ten – add ones and add tens

Magic Mental Addition



Topic: **Add and Subtract**

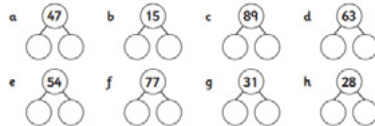
Activity: **Magic Mental Addition**

Addition of two 2-digit numbers using place value. Partition the second number into tens and ones and add to the first number using the number line.

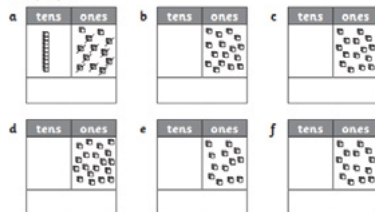


Addition – adding two 2-digit numbers with regrouping

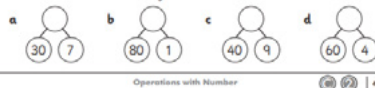
1 Partition these numbers into tens and ones.



2 Regroup the ones and write the total below. The first one has been done for you.



3 Put the tens and the ones together.

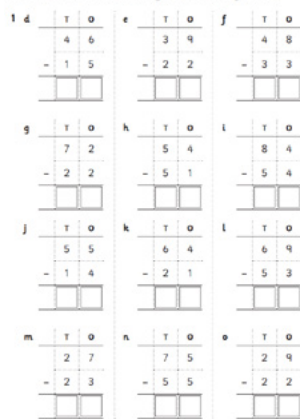


eBook, C series: Operations with Numbers, page 46 and 47

Use place value partitioning to begin to add two 2-digit numbers with regrouping.

Small steps: Subtract a 2-digit number from a 2-digit number – not crossing ten

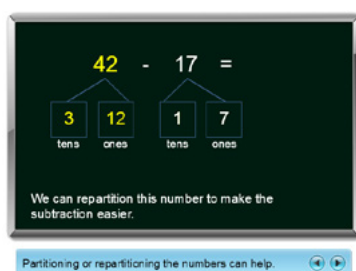
Subtraction – introducing the vertical format



eBook, C series: Operations with Numbers, page 65

Introduction to subtracting 2-digit numbers using the vertical format (no exchanges).

Small step: Subtract a 2-digit number from a 2-digit number – crossing ten – subtract ones and tens



Topic: Add and Subtract

Activity: *Repartition to Subtract*

This activity models partitioning to support subtraction when crossing the 10s boundary.



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Mathletics

Small step: Bonds to 100 (tens and ones)

Addition and subtraction facts – related facts to 100

When we write down all of the related facts for a number sentence we call it a fact family.

Here's an example:

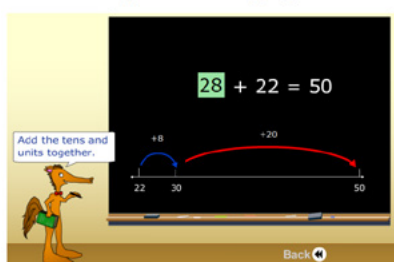
$100 - 10 = 90$ $100 - 90 = 10$ $90 + 10 = 100$ $10 + 90 = 100$

You will need: a partner, scissors, 10 sticks

eBook, C series: Operations with Number, page 26

Example of an activity for developing understanding of related facts for number bonds to 100 – tens.

Complements to 10, 20, 50



Topic: Add and Subtract (Written Method)

Activity: *Complements to 10, 20, 50*

Find the missing number bond to add to 10, 20 or 50. Support shows jumping through a ten as the strategy.

Small step: Add three 1-digit numbers



Topic: Add and Subtract (Written Method)

Activity: *Add Three 1-Digit Numbers*

Support illustrates looking for bonds to 10 first and then adding the 3rd digit.



Topic: Add and Subtract

Activity: *Add 3 Numbers Using Bonds to 10*

In this activity, pupils can move the digits to align two numbers that add up to ten, and then add the third number.

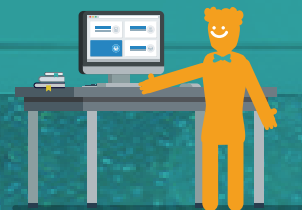
Addition – adding more than 2 numbers

We can add more than 2 numbers at a time and we can add them in any order. Look at $3 + 5 + 7 = ?$
We know that 3 and 7 makes 10 so we can add them together first. Then we add 5 to 10.

$3 + 7 + 5 = 15$ is the same as $3 + 5 + 7 = 15$

eBook, C series: Operations with Numbers, page 31

Following the explanation there is a series of exercises for pupils to practise adding 3 single digit numbers.



Problem solving and reasoning problems: addition and subtraction

47 Judith has 7 dolls and Alice has 6 dolls.

How many dolls do they have altogether?

a) Which number sentence represents this problem?

Dolls = $7 - 6$

Dolls = $7 + 6$

b) Solution

Dolls =



Topic: **Problem Solving**

Activity: **Problems: Add and Subtract**

Pupils need to first decide if the problem is an addition or subtraction problem and then work out the answer.

Sid had 32 stickers. He gave away 15 to his friends. How many does he have left?



Answer:

Use the bar model to help organise the information. Enter numbers directly above and inside the bars. Adjust to show the difference.

Topic: **Problem Solving**

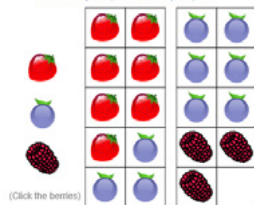
Activity: **Bar Model Problems (1)**

Pupils enter information into a bar model to represent and help them solve the word problem. They can move the slider to resize the bars in proportion to the numbers.

48 You pick 19 berries.

7 are strawberries, 9 are blueberries and some are raspberries.

How many raspberries do you pick?



(Click the berries)

I pick raspberries.

Topic: **Problem Solving**

Activity: **Add and Subtract Problems**

This activity involves addition of three numbers. Many of the questions are part unknown rather than result unknown. Pupils can use the interactive tens frames to model the problem.

3 Ribbons

The screenshot shows an interactive interface for the '3 Ribbons' problem. It includes a number line from 0 to 100 and a text box with the following text:

3 Ribbons

The total length of 3 ribbons is 100 cm.
One ribbon is about 60 cm longer than one of the others.
What might the three lengths be?

eBook, C series: **3 Ribbons (rich task)**

The interactive included in this task is designed to be used by teachers to share with the whole class or small groups. A print out of the problem is available for pupils to work with.

In the 3 Ribbons problem, pupils are asked to find the possible lengths of 3 ribbons with a total length of 100 cm. The problem encourages pupils to apply the knowledge they have learned about addition to 100.



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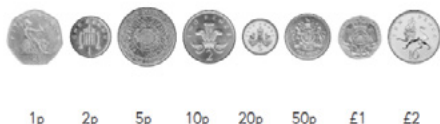
Mathletics

Examples of alignment to Mathletics Week 9-10 Measurement: Money

National Curriculum Objectives	WRMH Small Steps
<ul style="list-style-type: none"> ▶ Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. ▶ Find different combinations of coins that equal the same amounts of money. ▶ Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. 	<ul style="list-style-type: none"> ▶ Count money – pence ▶ Count money – pounds (notes and coins) ▶ Count money – notes and coins ▶ Select money ▶ Make the same amount ▶ Compare money ▶ Find the total ▶ Find the difference ▶ Find change ▶ Two-step problems

Small step: Count money – pence

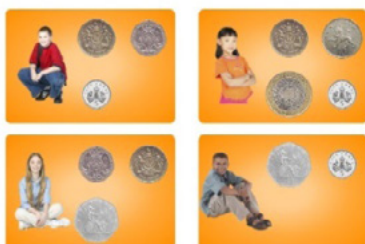
1 Draw lines to match the coins to their values.



eBook, C series: Time and Money, Topic 2 Money, page 18
Identify the value of coins in both pounds and pence.

Small step: Count money – pounds (notes and coins)

Click on the child with £1.70



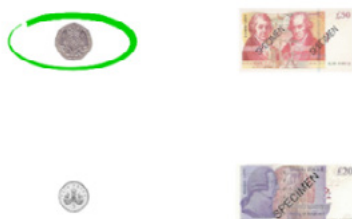
Topic: Money

Activity: *Money – Who's got it? (GBP)*

Pupils add up the value of the coins each child has and find the child who has the given amount.

Small step: Select money

Click on 20p.



Topic: Money

Activity: *Identify Everyday Money (GBP)*

Pupils identify the correct note or coin for the amount shown.



Small step: Find change

How much change?



$$£20 - £8 = £ \quad \square$$

Topic: **Money**

Activity: *How much Change? (GBP)*

Pupils are asked to find the change in pounds (whole numbers only).

Money – change

A cake costs **£2.60**. We pay with a **£5.00** note. How much change should we receive? We can count on to find out.

First we count the pence on to the nearest pound. We start at 60p and make 4 jumps of 10p to 100p. We have jumped **40p** and we are now at **£3.00**.



Then we count the pounds on to **£5.00**.

We make 2 jumps.

$$40p + £2.00 = £2.40$$

We should receive **£2.40** change.



eBook, C series: **Time and Money, Topic 2, page 33**

Find the change in pounds and pence using a number line and a strategy of counting on to the total from the given amount.



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Mathletics

Examples of alignment to Mathletics Week 11-12 Multiplication and Division

National Curriculum Objectives	WRMH Small Steps
<ul style="list-style-type: none"> Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) sign. Solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. 	<ul style="list-style-type: none"> Recognise equal groups Make equal groups Add equal groups Multiplication sentences using the \times symbol Multiplication sentences from pictures Use arrays 2 times-table 5 times-table 10 times-table

Small step: Recognise equal groups

Multiplication – equal groups

When we count in groups, the groups must be **equal** or **the same**.
How many carrots are there? Let's look at these equal groups.

\times means multiply

3 bunches of 3 is 9 altogether.

$3 + 3 + 3 = 9$
 $3 \times 3 = 9$
3 groups of 3 is 9

eBook, C series: Operations with Numbers, page 81

Explanation and exercises related to creating equal groups and then using equal groups to answer multiplication questions.

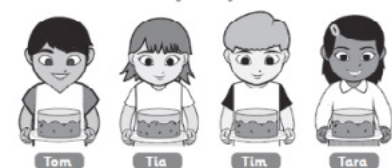
Small step: Make equal groups

Multiplication – equal groups

You will need: pencils

What to do:

These children are all turning 5 today.



a Draw the right number of candles on the cakes.

b How many candles are there altogether?

eBook, B series: Operations with Numbers, page 93

Pupils create equal groups and use their drawings to help solve multiplication problems.



Small step: Add equal groups

$$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = 50$$

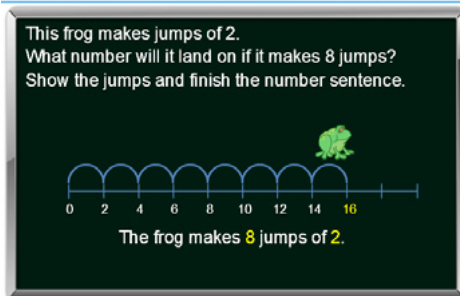
$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10$$

$$10 \times 5 = 50$$

Topic: **Multiply and Divide**

Activity: **Frog Jump Multiplication**

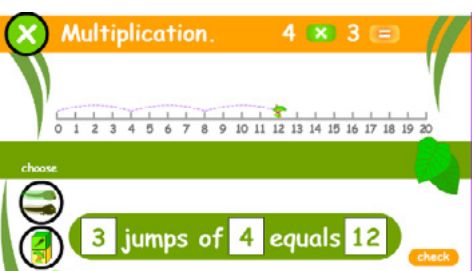
The video associated with this activity clearly illustrates multiplication as the addition of equal groups.



Topic: **Multiply and Divide**

Activity: **Frog Jump Multiplication**

Multiplication as repeated addition using a number line.



Rainforest Maths — Level B — Multiplication

Models multiplication questions is shown using repeated addition on a number line.



Rainforest Maths — Level B — Division

Pupils draw lines to share the butterflies between the flowers equally.

Supports understanding of division as sharing into equal groups.

Small step: Multiplication sentences using the x symbol

Multiplication – meaning of \times symbol

We know that ...
 $+$ means add or join $-$ means subtract $=$ means the same as.
 What does \times mean? It means 'groups of' or 'rows of'.
 2×5
 We have 2 'rows of 5' \leftarrow 5 butterflies
 \leftarrow 2 rows of 5 is 10 altogether. $2 \times 5 = 10$

eBook, B series: Operations with Number, page 96

Explains the use of the multiplication symbol and provides exercises and activities, including games, to develop understanding of multiplication and the use of the symbol.

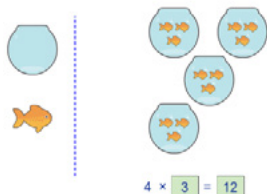


Year 2 White Rose Maths Hub (WRMH) Autumn Scheme of Learning, 2017

Mathletics

Small step: Multiplication sentences from pictures

A bowl holds 3 fish.
If there are 4 bowls, how many fish are there?
Model your thinking and finish the number sentence.



Topic: **Multiply and Divide**

Activity: **Multiplication Problems 1**

Pupils group the objects to reflect the multiplication problem and use this to write the corresponding number sentence.

Small step: Use arrays



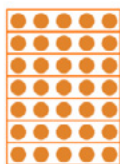
5 rows of 6 = 30

Topic: **Multiply and Divide**

Activity: **Multiplication Arrays**

This activity models multiplication as arrays. Pupils record the amount of objects in each row and how many rows before recording the total.

Use the array to help finish the fact.



7 x 6 = 42

Hint:
Click the rows to reveal the array.

Topic: **Multiply and Divide**

Activity: **Arrays 1**

Pupils click on the rows to reveal the objects in the rows and create the array. This array is then used to find and solve the number sentence.

Use this fact to help you work out the new fact.



10 x 2 = 20

so 10 x 4 = 40

Topic: **Multiply and Divide**

Activity: **Arrays 2**

Pupils solve a multiplication problem using an array. They are then shown a related array and problem. They are encouraged to use the answer to the first problem to find the answer to the second problem.

What two multiplication facts does this model show?



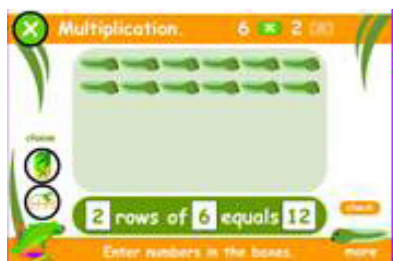
Hint:
Click the model to turn it around.

7 x 10 = 70
10 x 7 = 70

Topic: **Multiply and Divide**

Activity: **Multiplication Turnarounds**

Pupils click on the array and are able to see the array rotate a quarter turn to show the related array. They record the multiplication for both arrays — seeing the relationship between the calculations.



Rainforest Maths — Level B — Multiplication
Uses arrays to model multiplication.

Small step: 2 times-table



16 shared between 2 = each

Topic: **Multiply and Divide**

Activity: *Dividing Twos*

This activity uses the image of the array, combined with the bags, to show that the total in the array is shared into two equal groups. It supports understanding of division as the inverse to multiplication.



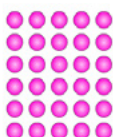
8 groups of 2 = 16 ✓

Topic: **Multiply and Divide**

Activity: *Groups of Two*

This activity uses arrays to support understanding of the 2 times-table.

Small step: 5 times-table

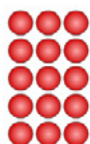


6 groups of 5 = 30

Topic: **Multiply and Divide**

Activity: *Groups of Five*

This activity uses arrays to support understanding of the 5 times-table.



15 shared between 5 = each

Topic: **Multiply and Divide**

Activity: *Dividing Fives*

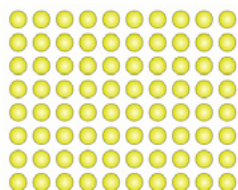
This activity uses the image of the array, combined with the bags, to show that the total in the array is shared into equal groups. It supports understanding of division as the inverse to multiplication.



Year 2 White Rose Maths Hub (WRMH) Autumn Scheme of Learning, 2017

Mathletics

Small step: 10 times-table



4 groups of 10 =

Topic: **Multiply and Divide**

Activity: **Groups of Ten**

This activity uses arrays to support understanding of the 10 times-table.



20 shared between 10 = each



Topic: **Multiply and Divide**

Activity: **Dividing Tens**

This activity uses the image of the array, combined with the bags, to show that the total in the array is shared into ten equal groups. It supports understanding of division as the inverse to multiplication.

Additional multiplication practice



Times Table Toons

Times Tables Toons has catchy songs to support the learning of all the times tables.



Rainforest Maths – Level D – Multiplication

Pupils can select 'Arrays and tables' and then the times-table they are practising to see the arrays and record the totals.



Rainforest Maths – Level D – Multiplication

Pupils can select 'Counting and Multiples' to support counting in groups of 2s, 5s and 10s using visuals.



Live Mathletics

Live Mathletics

1 2 3 4 5 6 7 8 9 10 Results

What's in level 3?

Addition from 1 - 50

$8 + 1 + 1 = ?$

Check

Subtraction from 1 - 50

$50 - 16 = ?$

Check

2s, 3s, 4s, 5s and 10s times tables

$2 \times 7 = ?$

Check

Doubles and halves up to 50

$12 + 12 = ?$

Check

Addition from 1 - 20 with a missing addend

$19 + ? = 20$

Check

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

To support progress in Year 2, challenge pupils to use Level 3 Live Mathletics. At Level 3, questions include those on the recall of the 2, 3, 5 and 10 times-tables.

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.



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For more information about Mathletics,
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