Mathletics

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

Alignment with Mathletics

Year 6 – 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, Subtraction, Multiplication and Division				Fractions				Geometry- Position and Direction	Consolidation
Spring	Number- Decimals		Number- Percentages		Number- Algebra		Measurement Converting units	Measurement Perimeter, Area and Volume		Number- Ratio		Consolidation
Summer	Geometry- Properties of Shapes		Problem solving			Statistics		Investigations				Consolidation

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-learningyears-1-to-6-block-1-place-value-11652624

White Rose Maths

Year 6

Mathletics

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Contents

Examples of alignment to Mathletics

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.

England Yr 06 WRMH Autumn Aligned

| Data-Driven Teaching and Learning | Differentiation | Feedback and Reflection | Student Growth | Blended Learning |

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Examples of alignment to Mathletics
Weeks 1-2 Place Value

National Curriculum Objectives	WRMH Small Steps
▶ Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. ▶ Round any whole number to a required degree of accuracy. ▶ Use negative numbers in context, and calculate intervals across zero. ▶ Solve number and practical problems that involve all of the above.	▶ Numbers to ten million ▶ Compare and order any number ▶ Round any numbers ▶ Negative numbers

Small step: Numbers to ten million

|	
Write the number using digits. nine million nine hundred and eighty-four thousand six hundred and ninety-two 9984692 ✓	**Topic:** Number and Place Value **Activity:** *Numbers from Words to Digits 2* Pupils read numbers in words and rewrite them in digits — up to 10 million.
State the digit in the tens place. 6,518,905 Millions Hundred thousands Ten thousands Thousands Hundreds Tens Ones Start at the ones place and label the place values.	**Topic:** Number and Place Value **Activity:** *Place Value – Millions* Identify the digit in a given place — up to millions.
Read and understand numbers – place value to millions The place of a digit in a number tells us its value. **6,216,085** 6 is worth 6,000,000 or 6 millions 2 is worth 200,000 or 2 hundred thousands 1 is worth 10,000 or 1 ten thousand 6 is worth 6,000 or 6 thousands 0 is worth 0 or 0 hundreds 8 is worth 80 or 8 tens 5 is worth 5 or 5 ones ① Fill in the place value chart for each number. The first one has been done for you. 		Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Ones
---	---	---	---	---	---	---	---
816,958		8	1	6	9	5	8
1,254,958									**eBook, G series: Number and Place Value, page 1+** Explanation of place value to millions. Range of activities to practise key concepts.

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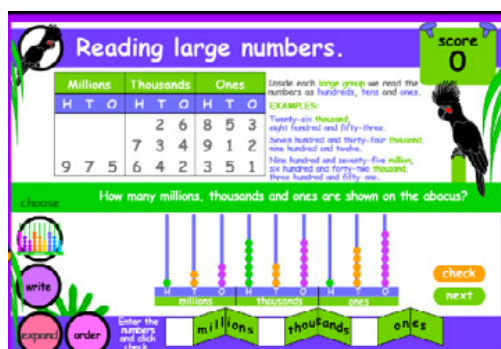
Rainforest Maths — Level G — Reading Large Numbers
Illustrates place value beyond 10 million.

Small step: Compare and order any number

Topic: Number and Place Value
Activity: *Comparing Numbers*
Pupils compare large numbers using symbols.

eBook, G series: Number and Place Value, page 4+
Range of activities, including games to practise ordering numbers up to 7 digits.

Rainforest Maths — Level G — Ordering Large Numbers
Exercises to order numbers beyond a million.

Small step: Round any numbers

Topic: Number and Place Value
Activity: *Rounding Numbers*
Round numbers to the nearest 1,000.

Other Activities:
Nearest Whole Number — rounding decimals.
Nearest 1,000? — rounding to nearest 1,000.

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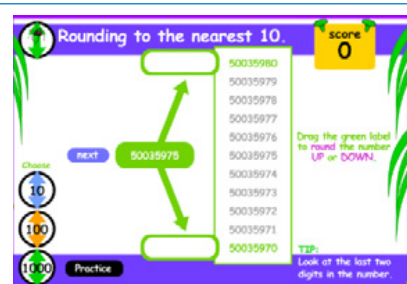Alignment with Mathletics

Mathletics
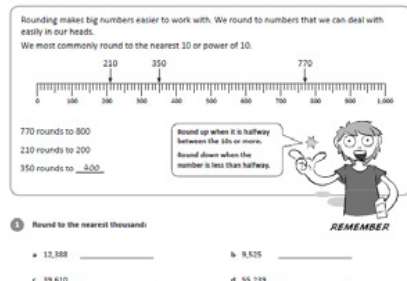
eBook, G series: Number and Place Value, page 16

Explains the rationale behind rounding numbers and how rounding can be used to support estimation.

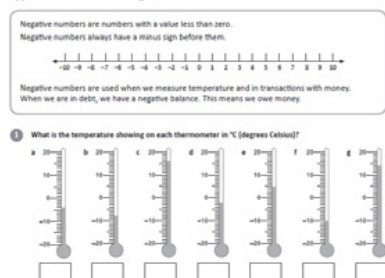Activities to practise rounding and estimation. Word problems also explore rounding and estimation.

Rainforest Maths — Level G — Rounding

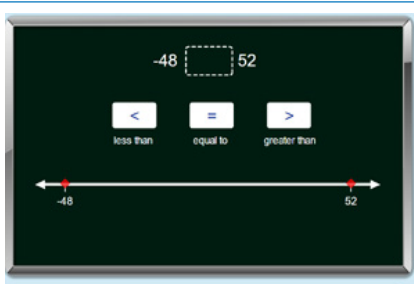Exercises to practise rounding to the nearest 10, 100 and 1,000.

Small step: Negative numbers

eBook, G series: Numbers and Place Value, page 8+

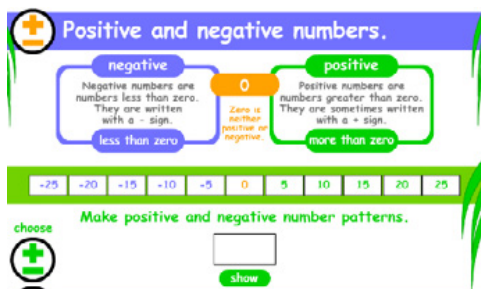Explains negative numbers and shows them in the context of temperature.

Activities to practise working with negative numbers.

Topic: Number and Place Value
Activity: *Comparing Integers (<, =, >)*

Pupils compare integers and select the correct symbol. The support uses the number line to illustrate the number differences.

Rainforest Maths — Level G — Positive and Negative Numbers

Illustrates positive and negative numbers on a number line. Pupils enter a number to create a number pattern that includes negative numbers (e.g. counting from –25 in steps of 5 to 25).

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Examples of alignment to Mathletics
Weeks 3-6 Number: Four Rules

National Curriculum Objectives	WRMH Small Steps
▶ Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why. ▶ Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication. ▶ Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context. ▶ Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context. ▶ Perform mental calculations, including with mixed operations and large numbers. ▶ Identify common factors, common multiples and prime numbers. ▶ Use their knowledge of the order of operations to carry out calculations involving the four operations. ▶ Solve problems involving addition, subtraction, multiplication and division. ▶ Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.	▶ Add and subtract whole numbers ▶ Multiply up to a 4-digit by 1-digit number ▶ Short division ▶ Division using factors ▶ Long division (1) ▶ Long division (2) ▶ Long division (3) ▶ Long division (4) ▶ Common factors ▶ Common multiples ▶ Primes ▶ Squares and cubes ▶ Order of operations ▶ Mental calculations and estimation ▶ Reasoning from known facts

When assigning calculation activities 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.

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.

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Small step: Add and subtract whole numbers	
$$\begin{array}{r} 8\ 7\ 6\ 5 \\ +\ \ 5\ 9\ 5\ 7 \\ \hline 1\ 4\ 7\ 2\ 2\ \checkmark \end{array}$$	**Topic:** Four Operations (Part 1) **Activity:** *Add Multi-Digit Numbers 2 (UK)* Pupils practise adding 4-digit numbers.
	Rainforest Maths — Level G — Addition to 99 999 **Provides practice exercises for students working up to 99,999 — with regrouping.**
	Topic: Four Operations (Part 1) **Activity:** *Subtracting Colossal Columns (UK)* Pupils use the formal written method to practise subtraction, with regroupings.
	Rainforest Maths— Level G — Subtraction to 99 999 **Pupils practise subtraction, working with numbers up to 6 digits. Models how to regroup.**
	eBook, G series: Addition and Subtraction **This eBook works through exercises for pupils to practise addition and subtraction. It includes a range of word problems, 2-step problems and problems where pupils have to decide which operation is needed.**

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Small step: Multiply up to a 4-digit by 1-digit number

Topic: Four Operations (Part 2)

Activity: *Contracted Multiplication*

In this adaptive activity, pupils begin by first multiplying 2-digit numbers by 1-digit numbers and then they move to multiplying 3-digit and 4-digit numbers by 1-digit numbers.

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eBook, G series: Multiplication and Division, page 16

Explains contracted multiplication and moves on to long multiplication.

Gives examples for students to work through — multiplying by 1 digit and then 2 digits.

Rainforest Maths — Level G — Multiplication

Provides exercises to practise long multiplication with 1-digit numbers and then progresses to multiplying by 2-digit numbers.

Topic: Four Operations (Part 2)

Activity: *Long Multiplication*

Pupils use the long multiplication method to multiply two 2-digit numbers.

Small step: Short division

Topic: Four Operations (Part 2)

Activity: *Short Division*

This activity begins with division of 3-digit numbers by 1 digit, with no remainders. It then progresses to 4-digit numbers divided by 1 digit with remainders.

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eBook, G series: Multiplication and Division — Short Division, page 20
Works through an example with an explanation.
Sets out exercises to practise short division.

Rainforest Maths — Level F — Division
Progresses through short division with and without remainders.

Rainforest Maths — Level G — Division
Provides further exercises working with larger numbers and increased difficulty.

Small step: Division using factors

Topic: Four Operations (Part 2)
Activity: *Remainders by Tables*
Pupils use their knowledge of times-tables and factors to answer these questions.

eBook, G series: Multiplication and Division, page 10-11
Explains how to use knowledge of factors to support division.
Also provides a useful recap of the divisibility rules on page 11.

Topic: Four Operations (Part 2)
Activity: *Mental Methods Division 2*
This activity includes the strategy of division using known factors.

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Small steps:
- Long division (1)
- Long division (2)
- Long division (3)
- Long division (4)
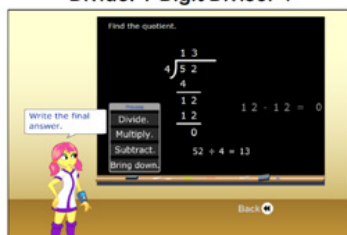
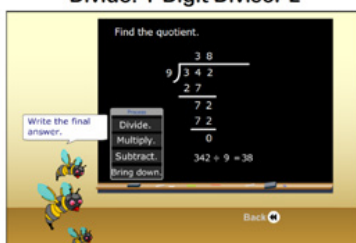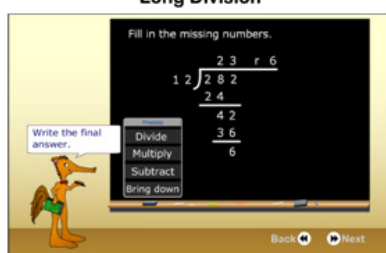|	
Divide: 1-Digit Divisor 1	**Topic:** Four Operations (Part 2) **Activity:** *Divide: 1-Digit Divisor 1* Divide a 2-digit number by a 1-digit divisor using long division; no remainders.
Divide: 1-Digit Divisor 2	**Topic:** Four Operations (Part 2) **Activity:** *Divide: 1-Digit Divisor 2* Divide a 3-digit number by a 1-digit divisor using long division; no remainders.
Fill in the missing numbers:	**Topic:** Four Operations (Part 2) **Activity:** *Long Division by Whole Number* Divide a 3-digit number by a 1-digit divisor using long division; includes remainders.
Long Division	**Topic:** Four Operations (Part 2) **Activity:** *Long Division* Divide a 3-digit number by a 2-digit divisor using long division; includes remainders.

Small step: Common factors

Find the GCF of the given numbers. Factors of 30 = 1, 2, 3, 5, 6, 10, 15, 30 Factors of 50 = 1, 2, 5, 10, 25, 50 GCF = 10	**Topic:** Four Operations (Part 1) **Activity:** *Greatest Common Factor* The conceptual video shows pupils how to work out the greatest common factor of 2 numbers. Activity: Provides activities to practise this concept.

eBook, G series: Multiplication and Division, page 1

Explains concepts — factors, multiples and prime/composite numbers.

Provides exercises to apply learning.

Small step: Common multiples

Topic: Four Operations (Part 1)

Activity: *Lowest Common Multiple*

Support shows pupils how to list the multiples to help find the lowest common multiple.

The activity works through finding the common multiple of 2 numbers and then moves to finding the lowest common multiple of 3 numbers.

Small step: Primes

Topic: Four Operations (Part 1)

Activity: *Prime or Composite?*

The video that accompanies this activity explains the concept of prime and composite numbers.

Pupils practise identifying if a number (up to 3 digit) is prime or composite in the activity.

Rainforest Maths — Level G — Prime and Composite Numbers

Explains the concepts of prime and composite numbers, along with factors, and includes a useful recap on divisibility rules.

Exercises provided to practise the concepts.

Small step: Squares and cubes

Rainforest Maths — Level G — Number — Square and Cubed Numbers

Explains the concepts of square and cubed numbers. Exercises to practise finding square and cubed numbers.

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Multiplication facts – square numbers (worksheet image)	**eBook, F series: Multiplication and Division, page 5** Explains square numbers and provides exercises to practise the concept.
Multiplication facts – cube numbers (worksheet image)	**eBook, F series: Multiplication and Division, page 6** Explains the concept of cube numbers with follow up exercises.
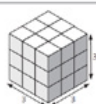
Small step: Order of operations
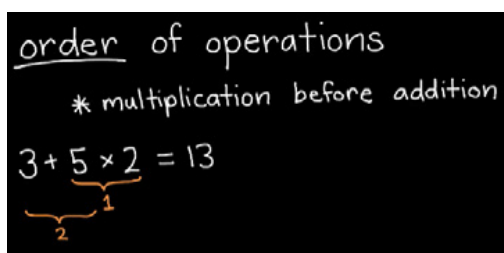
order of operations (board image) * multiplication before addition $3 + 5 \times 2 = 13$	**Topic: Four Operations (Part 2)** **Activity: Order of Operations 1 (BIDMAS)** The video that accompanies this activity clearly explains the rules for order of operations.
$15 + 54 \div 6 = \boxed{24}$ ✓ **Operation order** B — BRACKETS I — INDICES DM — DIVISION or MULTIPLICATION AS — ADDITION or SUBTRACTION	**Topic: Four Operations (Part 2)** **Activity: Order of Operations 1 (BIDMAS)** The activity provides exercises in applying the order of operations rules.
Equations ... order of operations (activity image) $(30 \div 5) + 15 =$	**Rainforest Maths — Level F— Equations: Order of Operations** Shows the order the operations should be completed in and provides exercises to work through. **Rainforest Maths — Level G — Equations: Order of Operations** Provides further examples to work through.
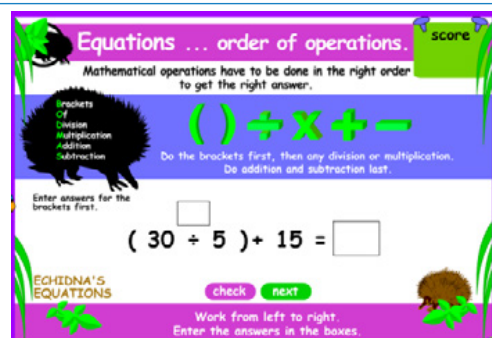
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Small step: Mental calculations and estimation

$1727 - 454 \approx$ 1000 1700 1600 1200 ✓	**Topic:** Four Operations (Part 1) **Activity:** *Estimation: Add and Subtract* Pupils use rounding to estimate the answer to addition and subtraction calculations.
$9 \times 67 \approx$ 330 730 630 ✓ 930	**Topic:** Four Operations (Part 1) **Activity:** *Estimation: Multiply and Divide* Pupils use rounding to support estimation in multiplication and division problems. **Other estimation activities included:** **Activity:** *Estimate Products* **Activity:** *Estimate Quotients*

Small step: Reasoning from known facts

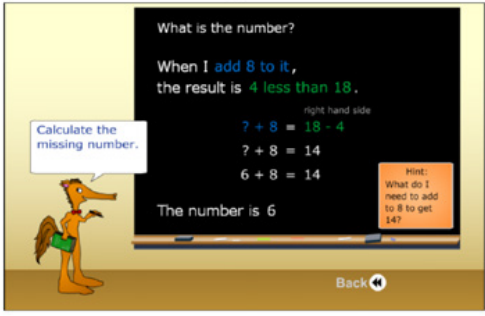|	
Strategies … using place value. A way to multiply larger numbers, by using place value. 1. Split the larger number into tens and ones. EXAMPLE: 2. Multiply the tens, then the ones. $65 \times 6 = 360 + 30$ 3. Add the products together. $= 390$ Splitting may be called partitioning. $98 \times 9 = 810 + 72$ $=$ check next more Enter the answer in the box.	**Rainforest Maths — Level F: Multiplication strategies — split** Use known facts and place value knowledge to solve multiplication problems using mental strategies.
Strategies … extensions. A way to extend known number facts to larger numbers. $72 \div 8 = 9$ SO $720 \div 8 =$ ▢ SO $7200 \div 8 =$ ▢ multiplication × division ÷ check next Enter numbers in the boxes.	**Rainforest Maths — Level F: Multiplication strategies — extensions** Use known facts and place value knowledge to solve division problems using mental strategies.
Use known facts to do more sums in your head. $255 \div 5 = 51$ $200 \div 5 = 40$ $55 \div 5 = 11$ $40 + 11 = 51$ Divide each part by 5 and then add.	**Topic:** Four Operations (Part 2) **Activity:** *Mental Methods Division 2* Pupils use known facts to solve division problems using mental strategies.

Topic: Problem Solving – Something Easier

Activity: *I am Thinking of a Number!*

Although the numbers in this activity are easy, this activity does provide extra practise with reasoning to find answers using known facts.

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Examples of alignment to Mathletics
Weeks 7-10 Number: Fractions

National Curriculum Objectives	WRMH Small Steps
▶ Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ▶ Compare and order fractions, including fractions > 1. ▶ Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions. ▶ Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] ▶ Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] ▶ Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example $\frac{3}{8}$] ▶ Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. ▶ Generate and describe linear number sequences (with fractions).	▶ Simplify fractions ▶ Fractions on a number line ▶ Compare and order fractions by the denominator ▶ Compare and order fractions by the numerator ▶ Add and subtract fractions (1) ▶ Add and subtract fractions (2) ▶ Adding fractions ▶ Subtracting fractions ▶ Mixed addition and subtraction problems ▶ Multiply fractions by whole number ▶ Multiply fractions by fraction ▶ Divide a fraction by a whole number (1) ▶ Divide a fraction by a whole number (2) ▶ Four rules with fractions ▶ Fraction of an amount ▶ Fraction of an amount - finding the whole

Small step: Simplify fractions
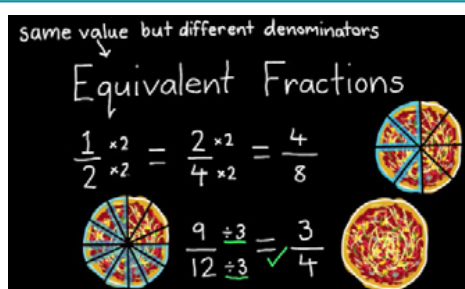
Topic: Fractions

Activity: *Simplifying Fractions*

The video that accompanies this activity provides an introduction to fractions, including equivalent fractions.

Topic: Fractions

Activity: *Simplifying Fractions*

This is an adaptive activity that moves from fractions that can be simplified to $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{1}{3}$ to those with higher denominators.

Rainforest Maths — Level G — Fractions

Reducing fractions — explains how to look for common factors when simplifying fractions.

eBook, G series: Fractions, Decimals and Percentages, page 4

Explains how to simplify fractions and provides exercises for practise.

Small step: Fractions on a number line
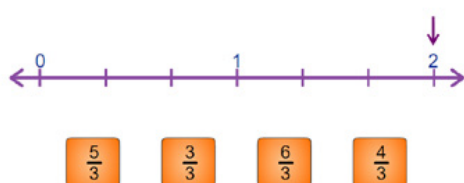
Topic: Fractions

Activity: *Identifying fractions beyond 1*

Pupils identify improper fractions on a number line.

Topic: Fractions

Activity: *Equivalent Fractions on a Number Line 2.*

Using a number line from 0–1, pupils position fractions, using their understanding of equivalent fractions.

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Small steps:
- Compare and order fractions by the denominator
- Compare and order fractions by the numerator

	Rainforest Maths — Level F — Fractions: ordering Models fractions on a number line to support the ordering of fractions with the same denominator.
	Topic: Fractions **Activity:** *Ordering Fractions 1* Pupils order fractions from the smallest to the largest — requires understanding of both denominator and numerator.
	Topic: Fractions **Activity:** *Compare Fractions 2* Pupils shade in the models to show the fractions and then sort the fractions into order. Visual supports understanding.
	Topic: Fractions **Activity:** *Counting with Fractions on a Number Line* This adaptive activity compares improper and mixed fractions using a number line for support. Same denominator.
	eBook, G series: Fractions, Decimals and Percentages, page 6 Explains ordering of fractions with like and unlike denominators. Exercises practise the concepts.

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Small steps:
- Add and subtract fractions (1)
- Add and subtract fractions (2)
- Adding fractions
- Subtracting fractions
- Mixed addition and subtraction problems
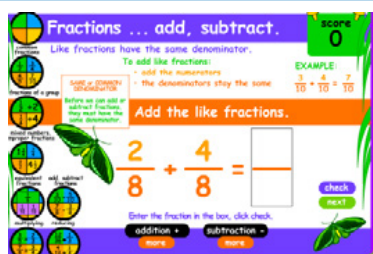
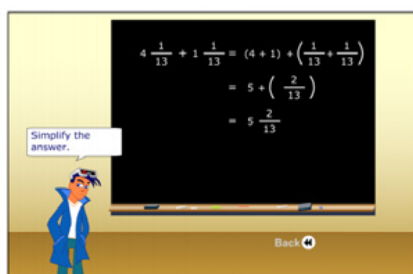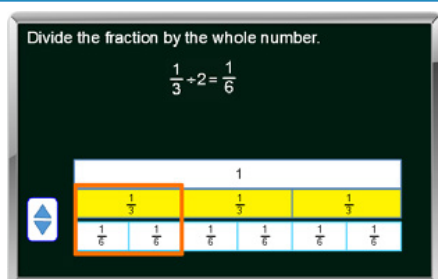|	
Calculating – adding and subtracting common fractions How do we add or subtract fractions? Look at this example: We had a movie marathon on the weekend. On Saturday, we watched movies for $7\frac{1}{4}$ hours and on Sunday we watched for $5\frac{1}{4}$ hours. How many hours did we spend watching movies in total? $7\frac{1}{4} + 5\frac{1}{4} =$ First we add the whole numbers: 7 + 5 = 12. Then we add the fractions: $\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$ Then we add the two answers together: $12 + \frac{1}{2} = 12\frac{1}{2}$ We use the same process to subtract fractions.	**eBook, G series: Fractions, Decimals and Percentages, page 29** Explains adding and subtracting fractions with a common denominator. Provides problems and exercises to work through.
	Rainforest Maths — Level G — Fractions: Add, subtract Add and subtract fractions where the demoninators are the same and then move to subtraction of unlike but related denominators.
	Topic: Add & Subtract Fractions **Activity:** *Add Like Mixed Numbers* Pupils add mixed numbers with the same denominator, then simplify. **Topic:** Add & Subtract Fractions **Activity:** *Subtract Like Mixed Numbers* Pupils subtract mixed numbers with the same denominator, then simplify.
$$\frac{10}{16} + \frac{1}{4} = \frac{7}{8} ✓$$	**Topic:** Add & Subtract Fractions **Activity:** *Add Unlike Fractions* Activites provide addition of unlike but related denominators. Pupils need to find the least common denominator to add the fractions together, then reduce the fraction to its simplest form. **Related activity:** *Add Unlike Mixed Numbers* Add mixed numbers with unlike but related denominators. Find the least common denominator first.
$$\frac{7}{12} - \frac{1}{3} = \frac{1}{4} ✓$$	**Topic:** Add & Subtract Fractions **Activity:** *Subtract Unlike Fractions* Pupils need to find the least common denominator first then subtract the fractions and simplify their answers. **Related activity:** *Subtract Unlike Mixed Numbers* Subtract mixed numbers with unlike but related denominators. Find the least common denominator first.

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In a class, $\frac{1}{5}$ of the students have blue eyes and $\frac{1}{3}$ of the class has green eyes.

If there are 15 students in the class, how many students had either blue or green eyes?

Blue or Green = 8 ✓

Topic: Problem Solving

Activity: *More Fraction Problems*

This activity has a range of fraction word problems — finding answers involves addition and subtraction of fractions and simplifying answers.

Evaluate, giving the answer in simplest form.

$$\frac{1}{6} + \frac{1}{7} = \frac{}{42}$$

6 × 7

Hint:
42 is the lowest common multiple (LCM) of 6 and 7

Topic: Add & Subtract Fractions

Activity: *No Common Denominator*

This activity provides an explanation of the strategy for adding and subtracting fractions without a common denominator.

Evaluate, giving the answer in simplest form.

$$\frac{1}{3} + \frac{1}{4} = \frac{}{}$$

Topic: Add & Subtract Fractions

Activity: *No Common Denominator*

Provides a mix of opportunities to practise addition and subtraction of fractions with no common denominator.

Small step: Multiply fractions by whole number

$$3 \times \frac{3}{4} = \frac{9}{4} ✓$$

Topic: Multiply & Divide Fractions

Activity: *Fraction by Whole Number*

Uses visual models to support the concept of multiplication of fractions by whole numbers. Simplification of answers is not required.

$$7 \times \frac{1}{4} = \frac{7}{4} ✓$$

Topic: Multiply & Divide Fractions

Activity: *Model Fractions to Multiply*

Pupils complete the visual model and then use it to complete the calculation. No simplification of fractions required.

eBook, G series: Fractions, Decimals and Percentages, page 32

Explains how to multiply fractions by a whole number using repeated addition. Provides examples to work through.

eBook, G series: Fractions, Decimals and Percentages, page 33

Explains how to multiply a fraction by a whole number, by multiplying the numerator, but leaving the denominator unchanged. Also works through converting an improper fraction.

Provides exercises to practise the concept.

Rainforest Maths — Level G — Multiplying fractions by a whole number

Multiplication of a whole number and fraction. Answers given in both improper and mixed numeral forms.

Small step: Multiply fractions by fraction

Multiply Two Fractions 1

Topic: Multiply & Divide Fractions

Activity: *Multiply Fraction by Fraction*

The support area shows pupils how to use the visual model to multiply the two fractions and find the answer.

Activity: *Multiply Two Fractions 1*

This activity shows multiplication of two fractions without the use of a visual model for support. Support explains the strategy of multiplying numerator and denominators.

eBook, G series: Fractions, Decimals and Percentages, page 35

Explains how to multiply a fraction by a fraction and gives examples to work through.

Rainforest Maths — Level G — Fractions — Multiplying (click MORE for the 'Multiply the fractions' game)

Multiply two fractions. Simplification not required.

Year 6 White Rose Maths (WRM)
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Alignment with Mathletics

Small step: Divide a fraction by a whole number

Topic: Multiply & Divide Fractions

Activity: *Divide Fractions Visual Model*

Pupils use the interactive model to work through the exercise — this shows the concept of dividing fractions by a whole number.

This is an adaptive activity and some answers require simplification.

eBook, G series: Fractions, Decimals and Percentages, page 34

Explains how to divide a fraction by a whole number and gives examples to practise the concept.

Small steps:
- **Fraction of an amount**
- **Fraction of an amount – finding the whole**

Topic: Problem Solving

Activity: *Fraction Length Models 2*

Pupils have to use fractional relationships to work out the different lengths.

The length of the strips can be altered by pupils to help them to visualise and use reasoning to think through their answers.
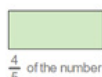

eBook, G series: Fractions, Decimals and Percentages, page 20

Explains how to find a fraction of an amount. Provides examples of problems to solve and exercises to practise the concept.

Topic: Multiply & Divide Fractions

Activity: *Fraction of an Amount*

Pupils use multiplication to find fractions of amounts.

Mathletics

Pete saves $\frac{4}{9}$ of his wages each week.
If he saves £180 per week, how much is his total wage?

Wage = £ ▢

Topic: Multiply & Divide Fractions
Activity: *Fraction Word Problems*
Solve word problems involving fractions of amounts.

Application of fractions in a rich task

THE GUMBALL HEIST

eBook, G series: The Gumball Heist (rich task)
A video takes pupils through a story scenario involving a 'gumball heist'. Solving the problem involves applying their understanding of fractions and finding fractions of amounts. Pupils can also create similar scenarios to challenge each other.

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Alignment with Mathletics

Examples of alignment to Mathletics
Weeks 11 Geometry

National Curriculum Objectives	WRMH Small Steps
▸ Describe positions on the full coordinate grid (all four quadrants). ▸ Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	▸ Coordinates in the first quadrant ▸ Plotting coordinates ▸ Translations ▸ Reflections ▸ Reasoning about shapes with coordinates

Small step: Coordinates in the first quadrant
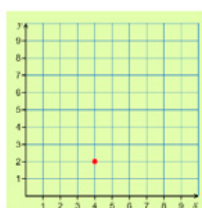
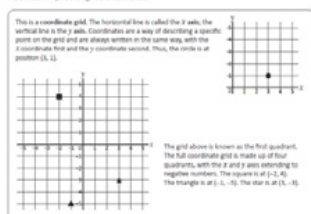|	
	Topic: Position **Activity:** *Coordinate Graphs: 1st Quadrant* Pupils record the coordinates for the marked point.
	Rainforest Maths — Level F and G — Position: Coordinates Provides maps with coordinates in the first quadrant. Pupils find the coordinates of different points on the map.

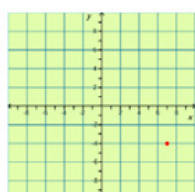### Small step: Plotting coordinates

	eBook, G series: Geometry, page 40 Explains how to plot coordinates on a grid in the first quadrant and then extends to 4 quadrants. Includes exercises to practise plotting coordinates and reading them. Moves on to plotting coordinates in order to create shapes.
	Topic: Position **Activity:** *Coordinate Graphs* Students record the coordinate of a marked point on a 4-quadrant grid.

Year 6 White Rose Maths (WRM)
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Alignment with Mathletics

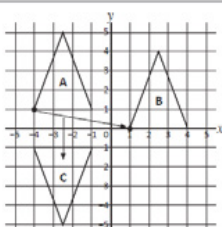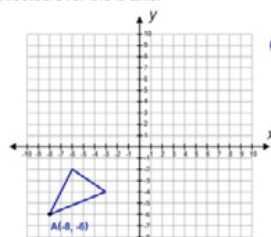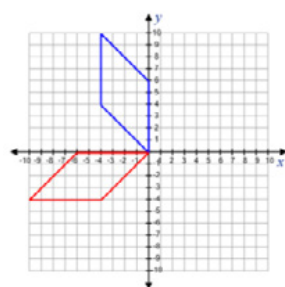|	
Small step: Translations	
What transformation is shown? **H H** Reflection	Translation ✓	Rotation	**Topic:** Position **Activity:** *Transformations* Pupils identify if a shape has been reflected, transformed or rotated.
Position – translating and reflecting shapes We can translate a shape by 'sliding' it to a new position without rotating it or flipping it. The triangle A has been translated to position B. Point (-4, 1) has been translated to point (1, 0). We can also reflect a shape in an axis. Triangle A has also been reflected in the *x* axis to create triangle C.	**eBook, G series: Geometry, page 43** Explains translations of shapes across a grid and how to work out the coordinates after a translation. Exercises to practise translating and reflecting shapes on a 4-quadrant grid.
Write the coordinates of the new point after A is reflected over the x-axis. (-8 , 6) ✓ A(-8, -6)	**Topic:** Position **Activity:** *Transformations: Coordinate Plane* Pupils record the coordinate of a point on a shape after a transformation.
Identify the rotation of the red figure to the blue figure. 180° 90° clockwise ✓ 90° counterclockwise	**Topic:** Position **Activity:** *Rotations: Coordinate Plane* Pupils identify the number of degrees a shape has been rotated to reach a new position on the grid.
Small step: Reflections	
Transformation, tessellation and symmetry – line symmetry Reflective or line symmetry describes mirror image, when one half of a shape or picture matches the other exactly. The middle line that divides the two halves is called the line of symmetry. Shapes may have: no line of symmetry	one line of symmetry	more than one line of symmetry	**eBook, G series: Geometry, page 19** Explains line symmetry and moves on to rotational symmetry and tessellations. Examples and exercises are provided for pupils to explore reflections. See other related activities above, eg '*Transformations*.'

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Small step: Reasoning about shapes with coordinates

What are the new coordinates of (7, -4) if it is shifted 8 units to the left and 5 units downwards?

(-1 , -9) ✓

Topic: Position

Activity: *Horizontal and Vertical Change*

Find the coordinates of a point after it has been translated — both horizontally and vertically. No grid is provided, so pupils will need to visualise the changes or record notes in their Maths books to help them reason and find the new coordinates.

Live Mathletics

What's in level 5?

Addition from 1 - 500

20 + 40 + 35 = ?

[_____] Check

Subtraction from 1 - 100

15 - 3 = ?

[_____] Check

Addition from 1 to 100 with a missing addend

30 + ? = 100

[_____] Check

All multiplication and division facts to 10 × 10

10 × 7 = ?

[_____] Check

Time conversions

How many seconds in 8 minutes ?

[_____] Check

Length conversions

? mm = 98m

[_____] Check

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

To support progress in Year 6, pupils should use Level 5.

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.)

Mathletics

For more information about Mathletics,
contact our friendly team.

www.mathletics.com/contact

A 3P Learning Product