



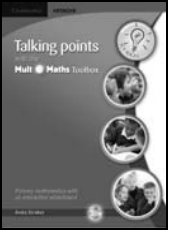
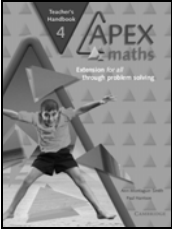

Year 4

Block A: Counting, partitioning and calculating

Unit 1

Objectives for this unit	Mult-e-Maths activities
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	See references on page 2 to <i>Talking points with the Mult-e-Maths Toolbox</i> and <i>Apex Maths 4</i> .
Partition, round and order four-digit whole numbers; use positive and negative numbers in context and position them on a number line; state inequalities using the symbols < and >	<p>CN4S8 What's the largest number? Trying to make the largest 4-digit number using 4 random digits that are revealed one at a time</p> <p>CN4S9 Estimating using a number line Making and justifying estimates of positions of numbers on number lines</p> <p>CN4S11 Comparing temperatures Using a thermometer scale to compare negative numbers in the context of temperature</p> <p>CN4S13 Negative numbers Adding and subtracting to/from positive and negative numbers using a number line</p> <p>CN4L3 Understanding place value Understanding the place value of numbers to at least 10 000</p> <p>CN4L4 Comparing numbers Comparing 4-digit numbers and recording comparisons using < and > symbols</p> <p>CN4L5 Negative numbers Recognising and comparing negative numbers</p>
Recognise and continue number sequences formed by counting on or back in steps of constant size	<p>CN4S2 Counting in 10s, 100s and 100s Counting on and back in tens, hundreds and thousands from numbers with different numbers of digits</p> <p>CN4L1 Steps of 10, 100 and 1000 Counting in repeated steps of 10, 100 and 1000 to solve additions and subtractions</p>
Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000	<p>NF4S1 Make 1000 Finding how many need to be added to a given multiple of 50 to make 1000</p> <p>NF4L1 Using addition and subtraction facts Applying number facts to additions and subtractions involving multiples of 10, 100 and 1000</p>
Add or subtract mentally pairs of two-digit whole numbers	<p>CA4S3 Near doubles Identifying near doubles and using doubles to find their totals</p> <p>CA4S4 Related number facts Using understanding of addition and subtraction and the relationship between them to give related number facts</p> <p>CA4L1 Finding differences Finding differences, focusing on counting up</p>
Derive and recall multiplication facts up to 10 × 10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4L4 Identifying multiples Identifying and investigating multiples of numbers to 10
Multiply and divide numbers to 1000 by 10 and then 100 (whole-number answers), understanding the effect; relate to scaling up or down	CA4L9 Multiplying and dividing by 10 Investigating the effect of multiplying and dividing by 10
Identify the doubles of two-digit numbers; use these to calculate doubles of multiples of 10 and 100 and derive the corresponding halves	<p>NF4S4 Doubles of numbers to 20 and halves Practising giving doubles of whole numbers to 20 and their corresponding halves</p> <p>NF4L2 Doubles of 2-digit numbers and halves Doubling and halving by partitioning first, and using doubles and halves to multiply and divide</p>
Use a calculator to carry out one-step and two-step calculations involving all four operations; recognise negative numbers in the display, correct mistaken entries and interpret the display correctly in the context of money	CA4L16 Using a calculator Using a calculator for a range of 1-step and 2-step calculations, including in the context of money
Use knowledge of rounding, number operations and inverses to estimate and check calculations	CA4L16 (above) also links to this objective.

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculate, calculation, equation, operation, answer, method, explain, predict, reason, reasoning, pattern, relationship, rule, sequence, place value, partition, thousands, digit, four-digit number, decimal point, decimal place, tenths, hundredths, positive, negative, above/below zero, compare, order, greater than (>), less than (<), equal to (=), round, estimate, approximately, add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, calculator, display, key, enter, clear, constant, pound (£), penny/pence (p), units of measurement and their abbreviations, degrees Celsius (°C)</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Place value chart • Place value mat • Number lines • Number grids • Multiplication grid from number grid tool • Function machine • Multiplication grid from number grid tool • Calculator 		<p>Use activity N4.7 Addition tables from <i>Talking points with the Mult-e-Maths Toolbox</i> to develop reporting of solutions for problems based on the knowledge of addition and subtraction facts.</p> 	<p>Use activity 1 What are we?, activity 2 Sum puzzle or activity 21 Grid totals from <i>Apex Maths 4</i> to practise mental addition strategies and reasoning about numbers.</p> 
	<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p> 		



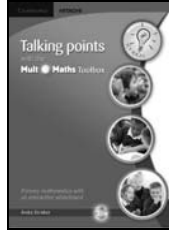
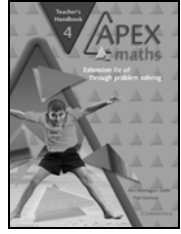

Year 4

Block A: Counting, partitioning and calculating

Unit 2

Objectives for this unit	Mult-e-Maths activities
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	See reference on page 4 to <i>Talking points with the Mult-e-Maths Toolbox</i> .
Recognise and continue number sequences formed by counting on or back in steps of constant size	CN4S3 Odd and even numbers Identifying odd and even numbers up to 1000 from a given description CN4S5 Number sequences Identifying patterns in number sequences and extending the sequences CN4S6 Number sequence puzzles Completing number sequences where no consecutive entries are given CN4L2 Number sequences Recognising and extending number sequences
Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line	CN4S16 Pence to pounds and ordering Converting amounts of money less than £10 from pence to £ notation and ordering them CN4S17 Decimal notation and money Expressing money amounts represented by collections of notes and coins in pounds and in pence CN4L8 One-place decimals Reading, writing and ordering one-place decimals
Add or subtract mentally pairs of two-digit whole numbers	CA4S1 Finding differences Finding small differences by counting up through multiples of 10 CA4S6 Two-digit pairs Choosing and using appropriate mental methods to add and subtract pairs of 2-digit numbers CA4L2 Adding tens first Adding by partitioning 2-digit numbers and adding the tens first CA4L3 Near doubles Using doubles to find near doubles
Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p	CA4L6 Written methods for addition Developing the use of the standard written method for TU + TU and HTU + HTU
Derive and recall multiplication facts up to 10 × 10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4S9 Multiples Recognising multiples and relationships between them NF4S10 Using multiplication facts Using multiplication facts and related division facts, to solve number puzzles
Multiply and divide numbers to 1000 by 10 and then 100 (whole-number answers), understanding the effect; relate to scaling up or down	CA4S11 Multiplying by 10 Applying understanding of the effect of multiplying by 10
Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders (e.g. 15 × 9, 98 ÷ 6)	CA4L10 Informal method for multiplication Approximating answers to multiplications and solving them using the grid method
Use knowledge of rounding, number operations and inverses to estimate and check calculations	CA4L10 (above) also links to this objective.

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculate, calculation, equation, operation, answer, method, explain, predict, reason, reasoning, pattern, relationship, rule, sequence, place value, partition, thousands, digit, four-digit number, decimal point, decimal place, tenths, hundredths, positive, negative, above/below zero, compare, order, greater than (>), less than (<), equal to (=), round, estimate, approximately, add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, calculator, display, key, enter, clear, constant, pound (£), penny/pence (p), units of measurement and their abbreviations, degrees Celsius (°C)</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Place value chart • Place value mat • Number lines • Number grids • Multiplication grid from number grid tool • Function machine 		<p>Use activity N4.4 Two-digit numbers from <i>Talking points with the Mult-e-Maths Toolbox</i> to develop reasoning skills in the context of solving problems involving the mental addition and subtraction of two-digit numbers.</p> 	<p>Use activity 16 PE purchases, activity 23 Winning totals or activity 29 Ruritanian Lotto from <i>Apex Maths 4</i> to solve problems involving addition and multiplication by employing trial and improvement or more systematic methods.</p> 
		<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p>	



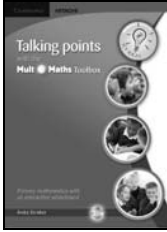
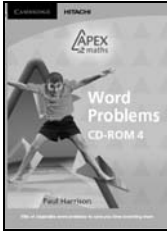

Year 4

Block A: Counting, partitioning and calculating

Unit 3

Objectives for this unit	Mult-e-Maths activities
Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	UA4L1 Money problems Working out amounts that can be made from given coins
Partition, round and order four-digit whole numbers; use positive and negative numbers in context and position them on a number line; state inequalities using the symbols < and >	CN4S10 Inequalities Identifying calculations to complete number sentences containing the symbols <, > and = CN4S12 Ordering whole numbers Creating and ordering 4-digit numbers with the same thousands digit CN4S14 Estimating and rounding Positioning 4-digit numbers on a number line and rounding them to the nearest 10, 100 and 1000 CN4S15 Using place value to add and subtract Using understanding of place value to add and subtract multiples of 10, 100 and 1000 to/from integers CN4L6 Ordering numbers Ordering 4-digit numbers CN4L7 Rounding Rounding 4-digit numbers to the nearest 1000, 100 and 10
Recognise and continue number sequences formed by counting on or back in steps of constant size	CN4S1 Applying counting in 1s, 10s and 100s Counting in repeated steps of 1, 10 and 100 to solve additions and subtractions CN4S4 Counting on and back Making predictions about number sequences CN4S7 Subtracting 1s, 10s and 100s Playing a game where a number is reduced to zero by subtracting multiples of 1, 10 and 100
Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line	CN4S19 Rounding money amounts Rounding amounts of money expressed using decimal notation to the nearest pound CN4S20 Ordering amounts of money Ordering amounts of money less than £10 written using decimal notation CN4L9 Money amounts in pounds and pence Relating money amounts to decimal notation
Add or subtract mentally pairs of two-digit whole numbers	CA4S2 Partitioning and addition Using partitioning to help with the addition of pairs of 2-digit numbers CA4S5 Different totals Using numbers from a given set to create as many different totals as possible CA4S7 Near multiples of 10 Adding and subtracting near multiples of 10 to and from 2-digit numbers CA4L4 Related number facts Using one number fact to find related number facts
Refine and use efficient written methods to add and subtract two- and three-digit whole numbers and £.p	CA4L7 Written methods for subtraction Developing the use of the standard written method for TU – TU and HTU – HTU
Derive and recall multiplication facts up to 10 × 10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4S11 Times-tables, doubles and halves Solving problems using knowledge of multiplication facts, and doubling and halving
Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders	CA4L11 Multiplying by partitioning Partitioning numbers so that multiplications can be solved using known facts
Use a calculator to carry out one-step and two-step calculations involving all four operations; recognise negative numbers in the display, correct mistaken entries and interpret the display correctly in the context of money	CA4S16 Using a calculator Using a calculator to identify missing money amounts in additions
Use knowledge of rounding, number operations and inverses to estimate and check calculations	See reference on page 6 to <i>Talking points with the Mult-e-Maths Toolbox</i> .

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculate, calculation, equation, operation, answer, method, explain, predict, reason, reasoning, pattern, relationship, rule, sequence, place value, partition, thousands, digit, four-digit number, decimal point, decimal place, tenths, hundredths, positive, negative, above/below zero, compare, order, greater than (>), less than (<), equal to (=), round, estimate, approximately, add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, calculator, display, key, enter, clear, constant, pound (£), penny/pence (p), units of measurement and their abbreviations, degrees Celsius (°C)</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Money category in Image bank • Place value chart • Place value mat • Maths equipment category in Image bank • Number lines • Number grids • Multiplication grid from number grid tool • Function machine • Calculator 		<p>Use activity N4.3 Number puzzles from <i>Talking points with the Mult-e-Maths Toolbox</i> to investigate number relationships within the context of addition and subtraction.</p>	
	<p>Use <i>Apex Maths Word Problems CD-ROM 4</i> as a source of appropriate one-step and two-step problems.</p>		<p>Use activity 8 Number line race or activity 12 Secret code from <i>Apex Maths 4</i> to investigate sequences, including those with negative numbers.</p>
		<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p>	



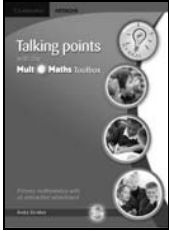


Year 4

Block B: Securing number facts, understanding shape

Unit 1



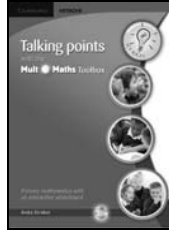
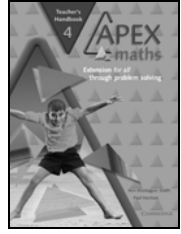

Objectives for this unit	Mult-e-Maths activities
Identify and use patterns, relationships and properties of numbers or shapes; investigate a statement involving numbers and test it with examples	<p>UA4L6 Odd and even numbers Investigating odd and even totals and differences</p> <p>UA4L8 Making numbers from digits Using knowledge of place value to investigate the numbers that can be made from given digits</p>
Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	<p>UA4L2 'Real life' money problems, pages 2 to 4 Solving money problems involving addition and subtraction using a structured approach</p>
Use knowledge of rounding, number operations and inverses to estimate and check calculations	Apply properties investigated in UA4L6 (above) to checking calculations.
Use knowledge of addition and subtraction facts and place value to derive sums and differences of multiples of 10, 100 or 1000	<p>NF4S2 Adding several multiples of 10 Using a range of mental strategies to add several 2-digit multiples of 10</p>
Derive and recall multiplication facts up to 10 × 10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	<p>NF4L5 Patterns of multiples Identifying patterns in sequences of multiples and relationships between them</p>
Draw polygons and classify them by identifying their properties, including their line symmetry	<p>SH4L1 Investigating polygons Sorting polygons according to their properties</p>
Visualise 3-D objects from 2-D drawings; make nets of common solids	<p>SH4L3 Properties of 3-D shapes Identifying the properties of 3-D shapes from 2-D images and sorting 3-D shapes</p>
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	<p>UA4L2 'Real life' money problems, page 1 Solving money problems involving addition and subtraction using a structured approach</p>

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculator, calculate, calculation, equation, operation, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, rule, sequence, sort, classify, property, add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, double, halve, factor, multiple, divisor, round, 3-D, three-dimensional, 2-D, two-dimensional, net, construct, regular, irregular, concave, convex, symmetrical, line of symmetry, vertex, vertices, face, edge, polygon, equilateral triangle, isosceles triangle, quadrilateral, rectangle, square, oblong, hexagon, heptagon, octagon</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Money category in Image bank • Calculator • Number lines • Function machine • Multiplication grid from number grid tool • Shape drawing tools • Regular polygon drawing tools • 3-D shape drawing tools 		<p>Use activity S4.1 Overlaps from <i>Talking points with the Mult-e-Maths Toolbox</i> to use knowledge of shapes to identify properties and relationships.</p>	
	<p>Use <i>Apex Maths Word Problems CD-ROM 4</i> as a source of appropriate one-step and two-step problems.</p>		<p>Use activity 7 Shape mobiles or activity 27 Tangrams from <i>Apex Maths 4</i> to make specified shapes and develop an understanding of the properties of shapes.</p>
		<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p>	



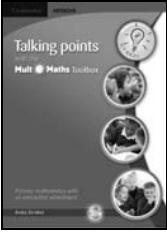


Objectives for this unit	Mult-e-Maths activities
Identify and use patterns, relationships and properties of numbers or shapes; investigate a statement involving numbers and test it with examples	<p>UA4L7 Odd and even properties Investigating odd and even numbers in sequences and statements about odd and even totals</p> <p>UA4L10 Investigating prisms Investigating a general statement about prisms</p>
Use knowledge of rounding, number operations and inverses to estimate and check calculations	<p>NF4L8 Calculating and checking Solving multiplication and division problems and checking the results using an inverse operation</p>
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	See reference on page 10 to <i>Apex Maths 4</i> .
Identify the doubles of two-digit numbers; use these to calculate doubles of multiples of 10 and 100 and derive the corresponding halves	<p>NF4S5 Doubles of numbers to 100 and halves Practising finding doubles of whole numbers to 100 and the corresponding halves</p> <p>NF4S6 Doubles of multiples of 10 and halves Doubling and halving multiples of 10 and applying this to solving puzzles</p> <p>NF4L3 Applying doubling and halving Reinforcing how partitioning can help with doubling and halving, and solving problems involving doubling and halving</p>
Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	<p>NF4S12 Making a product Finding all the multiplications involving pairs of whole numbers that have a product of 24</p>
Draw polygons and classify them by identifying their properties, including their line symmetry	<p>SH4S1 Odd shape out Finding similarities and differences in 2-D shapes</p> <p>SH4S2 2-D shapes Sketching 2-D shapes based on descriptions</p>
Visualise 3-D objects from 2-D drawings; make nets of common solids	<p>SH4S3 Properties of 3-D shapes Identifying 3-D shapes from a view of one face and describing their properties</p>

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculator, calculate, calculation, equation, operation, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, rule, sequence, sort, classify, property, add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, double, halve, factor, multiple, divisor, round, 3-D, three-dimensional, 2-D, two-dimensional, net, construct, regular, irregular, concave, convex, symmetrical, line of symmetry, vertex, vertices, face, edge, polygon, equilateral triangle, isosceles triangle, quadrilateral, rectangle, square, oblong, hexagon, heptagon, octagon</p>		<p>Use A Maths Dictionary for Kids when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following Mult-e-Maths Toolbox tools for this unit:</p> <ul style="list-style-type: none"> • Calculator • Number lines • Function machine • Multiplication grid from number grid tool • Shape drawing tools • Regular polygon drawing tools • 3-D shape drawing tools 		<p>Use activity S4.2 Symmetrical shapes from Talking points with the Mult-e-Maths Toolbox to construct polygons and classify them according to their properties.</p> 	<p>Use activity 14 Windows from Apex Maths 4 to work systematically to find possibilities that satisfy a given statement and develop reasoning skills.</p> <p>Use activity 15 Number neighbours from Apex Maths 4 to work systematically on investigating sums of consecutive numbers.</p> 
		<p>Use Perfect Times to practise recall of multiplication facts.</p>	

Objectives for this unit	Mult-e-Maths activities
Identify and use patterns, relationships and properties of numbers or shapes; investigate a statement involving numbers and test it with examples	<p>UA4L9 Grid problems Investigating what numbers to cover on a grid to fulfil given conditions</p> <p>UA4L11 Using diagrams to solve problems Answering questions about numbers by sorting them in Venn and Carroll diagrams and identifying multiples of 2, 3, 4, 5 and 10</p>
Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	See reference on page 12 to <i>Apex Maths Word Problems CD-ROM 4</i> .
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	UA4L12 Direction investigations, pages 2 to 4 Investigating possible routes between two points on a grid using compass directions
Use knowledge of rounding, number operations and inverses to estimate and check calculations	NF4L9 Estimating and checking Estimating, calculating and checking answers to multiplications and divisions of 2-digit numbers by 1-digit numbers
Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000	NF4S3 Adding multiples of 100 Adding pairs of 3-digit and 4-digit multiples of 100
Identify the doubles of two-digit numbers; use to calculate doubles of multiples of 10 and 100 and derive the corresponding halves	<p>NF4S7 Doubles of multiples of 100 and halves Solving puzzles by doubling and halving multiples of 100</p> <p>NF4S8 Doubles of multiples of 10 and 100 Practising finding doubles of multiples of 10 and 100 and the corresponding halves</p>
Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4S14 Multiplying by 8 Using strategies to multiply by 8, to help develop knowledge of the 8 times-table
Visualise 3-D objects from 2-D drawings; make nets of common solids	SH4S4 Nets Identifying which arrangements of joined squares are nets of an open cube
Draw polygons and classify them by identifying their properties, including their line symmetry	SH4L2 Symmetry Sorting polygons according to their lines of symmetry and creating symmetrical polygons

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculator, calculate, calculation, equation, operation, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, rule, sequence, sort, classify, property, add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, double, halve, factor, multiple, divisor, round, 3-D, three-dimensional, 2-D, two-dimensional, net, construct, regular, irregular, concave, convex, symmetrical, line of symmetry, vertex, vertices, face, edge, polygon, equilateral triangle, isosceles triangle, quadrilateral, rectangle, square, oblong, hexagon, heptagon, octagon</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Calculator • Money category in Image bank • Number lines • Function machine • Multiplication grid from number grid tool • Shape drawing tools • Regular polygon drawing tools • 3-D shape drawing tools 		<p>Use activity N4.1 Sums and differences from <i>Talking points with the Mult-e-Maths Toolbox</i> to solve problems involving numbers.</p>	
	<p>Use <i>Apex Maths Word Problems CD-ROM 4</i> as a source of appropriate one-step and two-step problems.</p>		<p>Use activity 10 Puzzling symbols or activity 11 Seating arrangements from <i>Apex Maths 4</i> to develop systematic working and the recognition of the relationship between numbers.</p>
		<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p>	



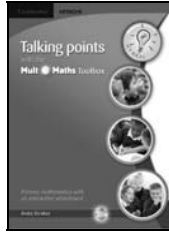
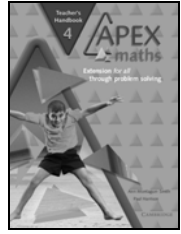
Year 4

Block C: Handling data and measures

Unit 1


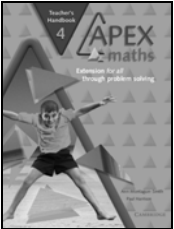
Objectives for this unit	Mult-e-Maths activities
Suggest a line of enquiry and the strategy needed to follow it; collect, organise and interpret selected information to find answers	See reference on page 14 to <i>Talking points with the Mult-e-Maths Toolbox</i> .
Answer a question by identifying what data to collect; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts, using ICT where appropriate	You could use one of the ideas from the 'Other tasks' section of the Teacher's notes for HD4L1 (Block C Unit 2).
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	See reference on page 14 to <i>Apex Maths 4</i> .
Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements	ME4L1 How heavy? Using the relationship between kilograms and grams
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	ME4S4 How hot is it? Estimating temperatures and using the scale on a thermometer

End-of-year expectations for this unit are in **bold**.

Vocabulary		
<p>problem, solution, calculate, calculation, method, explain, reasoning, reason, predict, pattern, relationship, classify, represent, interpret, data, information, survey, questionnaire, graph, chart, table, diagram, horizontal axis, vertical axis, axes, label, title, scale, interval, pictogram, bar chart, tally chart, greatest/least value, metric unit, standard unit, millimetre (mm), centimetre (cm), metre (m), kilogram (kg), gram (g), litre (l), millilitre (ml)</p>	<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p>	
Other resources		
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Block graphs • Tally chart • Pictogram • Number lines • Measuring cylinder • Scales • Ruler • Mass category in Image bank • Volume category in Image bank 	<p>Use activity N4.6 Number squares from <i>Talking points with the Mult-e-Maths Toolbox</i> to answer a question by collecting information and recording it using diagrams.</p>	<p>Use activity 19 Ginger biscuits from <i>Apex Maths 4</i> to focus on solving problems based on finding the cost of ingredients for a cookery class.</p>
		

Objectives for this unit	Mult-e-Maths activities
Suggest a line of enquiry and the strategy needed to follow it; collect, organise and interpret selected information to find answers	UA4L5 Pick three numbers, pages 2 and 3 Investigating ways of choosing two or three numbers to make a total of 10, 20, 50 or 100
Answer a question by identifying what data to collect; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts, using ICT where appropriate	HD4L1 Transport survey Collecting, organising and interpreting data about how children travel to school
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	See reference on page 16 to <i>Apex Maths 4</i> .
Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements	ME4S2 What is the length? Measuring lengths and finding objects that would make a total length of 1 metre
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	Children could carry out practical measuring activities that involve recording from a variety of different scales.
Compare the impact of representations where scales have intervals of differing step size	Children could compare bar charts from the group activity in the Teacher's notes for HD4L1 (above).

End-of-year expectations for this unit are in **bold**.

Vocabulary		
<p>problem, solution, calculate, calculation, method, explain, reasoning, reason, predict, pattern, relationship, classify, represent, interpret, data, information, survey, questionnaire, graph, chart, table, diagram, horizontal axis, vertical axis, axes, label, title, scale, interval, pictogram, bar chart, tally chart, greatest/least value, metric unit, standard unit, millimetre (mm), centimetre (cm), metre (m), kilogram (kg), gram (g), litre (l), millilitre (ml)</p>	<p>Use A Maths Dictionary for Kids when discussing mathematical vocabulary for this unit.</p>	
Other resources		
<p>Use the following Mult-e-Maths Toolbox tools for this unit:</p> <ul style="list-style-type: none"> • Block graphs • Tally chart • Pictogram • Number lines • Measuring cylinder • Scales • Ruler • Mass category in Image bank • Volume category in Image bank 	<p>Use activity 24 Colourful cars from Apex Maths 4 to work out the missing labels for the axes of a bar chart and develop oral explanations.</p>	



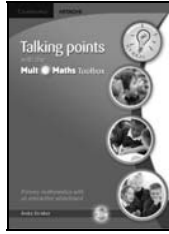
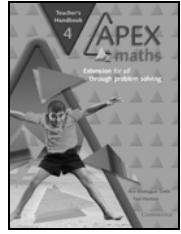
Year 4

Block C: Handling data and measures

Unit 3

Objectives for this unit	Mult-e-Maths activities
Suggest a line of enquiry and the strategy needed to follow it; collect, organise and interpret selected information to find answers	See reference on page 18 to <i>Talking points with the Mult-e-Maths Toolbox</i> .
Answer a question by identifying what data to collect; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts, using ICT where appropriate	HD4S1 Interpreting data Interpreting data in tally charts and bar charts
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	See reference on page 18 to <i>Apex Maths 4</i> .
Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of ‘kilo’, ‘centi’ and ‘milli’ and, where appropriate, use decimal notation to record measurements	ME4S1 Balancing items Finding items with the same mass
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	Children could carry out practical measuring activities that involve recording from a variety of different scales.
Compare the impact of representations where scales have intervals of differing step size	You could ask children to create and compare bar charts with differing scales that represent the data from HD4S1 (above).

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculate, calculation, method, explain, reasoning, reason, predict, pattern, relationship, classify, represent, interpret, data, information, survey, questionnaire, graph, chart, table, diagram, horizontal axis, vertical axis, axes, label, title, scale, interval, pictogram, bar chart, tally chart, greatest/least value, metric unit, standard unit, millimetre (mm), centimetre (cm), metre (m), kilogram (kg), gram (g), litre (l), millilitre (ml)</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Block graphs • Tally chart • Pictogram • Number lines • Measuring cylinder • Scales • Ruler • Mass category in Image bank • Volume category in Image bank 		<p>Use activity D4.1 Venn and Carroll diagrams from <i>Talking points with the Mult-e-Maths Toolbox</i> to develop skills involved in the organisation and interpretation of information.</p>	
		<p>Use activity 25 Test ramp from <i>Apex Maths 4</i> to give children the opportunity to reason about numbers and use units of measurement.</p>	



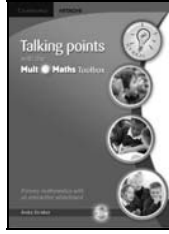
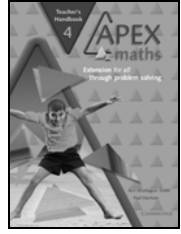

Year 4

Block D: Calculating, measuring and understanding shape

Unit 1



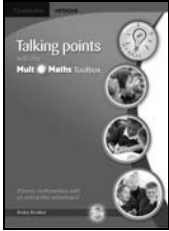
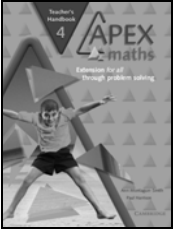


Objectives for this unit	Mult-e-Maths activities
Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	UA4L3 Capacity problems, pages 2 to 6 Solving capacity problems involving one or more steps
Add or subtract mentally pairs of two-digit whole numbers	CA4S8 Addition bingo Choosing and using appropriate mental addition strategies CA4S9 Subtraction bingo Choosing and using appropriate mental subtraction strategies CA4L5 Addition and subtraction strategies Consolidating a range of mental methods for addition and subtraction
Recognise horizontal and vertical lines; use the eight compass points to describe direction; describe and identify the position of a square on a grid of squares	SH4S5 Directions and coordinates Describing points on a grid using compass directions and coordinates SH4L4 Compass points and coordinates Describing routes using compass directions, and points using coordinates
Choose and use standard metric units and their abbreviations when estimating, measuring and recording weight; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements	ME4L2 Capacity, page 1 Using measuring cylinders to find capacities and applying the relationship between litres and millilitres
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	UA4L3 Capacity problems, page 1 Solving capacity problems involving one or more steps
Read time to the nearest minute; use am, pm and 12-hour clock notation; choose units of time to measure time intervals; calculate time intervals from clocks and timetables	ME4S5 Telling the time Reading the time on an analogue clock and saying how the same time would be shown on a digital clock, and vice versa ME4L5 Time Reading the time to the nearest minute from analogue and digital clocks, and solving problems involving time

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, answer, method, explain, predict, reason, reasoning, pattern, relationship, calculation, equation, decimal, decimal point, decimal place, add, subtract, multiply, divide, order, compare, sum, total, difference, plus, minus, product, remainder, calculator, pound (£), penny/pence (p), measure, estimate, metric unit, standard unit, length, distance, perimeter, area, mass, weight, capacity, ruler, measuring tape, balance, scales, measuring cylinder/jug, angle, right angle, set-square, units of measurement and abbreviations: kilometre (km), metre (m), centimetre (cm), millimetre (mm), kilogram (kg), gram (g), litre (l), millilitre (ml), square centimetre (cm²), degrees (°), time, a.m., p.m., digital, analogue, timetable, arrive, depart, hour (h), minute (min), second (s), position, direction, north-east (NE), north-west (NW), south-west (SW), south-east (SE), clockwise, anticlockwise, horizontal, vertical, grid</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Number lines • Function machine • Scales • Ruler • Mass category in Image bank • Coordinate and background grids • Clocks 		<p>Use activity N4.2 The farm from <i>Talking points with the Mult-e-Maths Toolbox</i> to focus on solving problems involving mental addition and subtraction.</p> 	<p>Use activity 5 Computer crash! or activity 13 Palindromic investigation from <i>Apex Maths 4</i> to develop mental addition and subtraction skills.</p> <p>Use activity 22 Quick time from <i>Apex Maths 4</i> to calculate with units of time and develop reasoning about time.</p> 
		<p>Use <i>Apex Maths Word Problems CD-ROM 4</i> as a source of appropriate one-step and two-step problems.</p> 	





Objectives for this unit	Mult-e-Maths activities
Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	See reference on page 22 to <i>Apex Maths Word Problems CD-ROM 4</i> .
Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p	CA4S10 Column subtraction Identifying missing numbers in column subtractions involving HTU – TU
Derive and recall multiplication facts up to 10 × 10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4S15 Times-tables recall Multiplying pairs of single-digit numbers and deducing answers given one single-digit number in a pair
Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders	CA4S12 Multiplying by partitioning Partitioning the 2-digit number in a TU × U multiplication to make multiplying easier CA4L13 Informal method of written division Using a ‘chunking’ method to divide, and beginning to record the method systematically
Draw rectangles and measure and calculate their perimeters, find the area of rectilinear shapes drawn on a square grid by counting squares	ME4L3 Perimeter Measuring perimeters of rectangles and finding rectangles with a given perimeter
Know that angles are measured in degrees and that one whole turn is 360°; compare and order angles less than 180°	SH4L5 Angles Relating turns to their measurements in degrees and comparing angles less than 180°
Recognise horizontal and vertical lines; use the eight compass points to describe direction; describe and identify the position of a square on a grid of squares	SH4S6 Using coordinates Using coordinates to identify the positions of points on a grid of squares UA4L12 Direction investigations, page 1 Investigating possible routes between two points on a grid using compass directions
Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line	CN4L10 Two-place decimals Reading, writing and partitioning two-place decimals and positioning them on a number line
Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of ‘kilo’, ‘centi’ and ‘milli’ and, where appropriate, use decimal notation to record measurements	ME4L2 Capacity, page 2 Using measuring cylinders to find capacities and applying the relationship between litres and millilitres
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	Children could carry out practical measuring activities that involve recording from a variety of different scales.

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, answer, method, explain, predict, reason, reasoning, pattern, relationship, calculation, equation, decimal, decimal point, decimal place, add, subtract, multiply, divide, order, compare, sum, total, difference, plus, minus, product, remainder, calculator, pound (£), penny/pence (p), measure, estimate, metric unit, standard unit, length, distance, perimeter, area, mass, weight, capacity, ruler, measuring tape, balance, scales, measuring cylinder/jug, angle, right angle, set square, units of measurement and abbreviations: kilometre (km), metre (m), centimetre (cm), millimetre (mm), kilogram (kg), gram (g), litre (l), millilitre (ml), square centimetre (cm²), degrees (°), time, a.m., p.m., digital, analogue, timetable, arrive, depart, hour (h), minute (min), second (s), position, direction, north-east (NE), north-west (NW), south-west (SW), south-east (SE), clockwise, anticlockwise, horizontal, vertical, grid</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Number lines • Function machine • Multiplication grid from number grid tool • Scales • Ruler • Mass category in Image bank • Volume category in Image bank • Coordinate and background grids • Line drawing tool • Shape drawing tools • Regular polygon drawing tools • Angles 		<p>Use activity N4.5 Mental calculation from <i>Talking points with the Mult-e-Maths Toolbox</i> to develop and refine written methods for multiplication.</p>	
		<p>Use activity 17 Area challenge or activity 18 Dog run from <i>Apex Maths 4</i> to develop skills of working systematically in the context of investigating area.</p>	
		<p>Use <i>Apex Maths Word Problems CD-ROM 4</i> as a source of appropriate one-step and two-step problems.</p>	
		<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p>	

Objectives for this unit	Mult-e-Maths activities
Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	See reference on page 24 to <i>Apex Maths Word Problems CD-ROM 4</i> and <i>Apex Maths 4</i> .
Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p	CA4L8 Money calculations Consolidating using expanded written methods for $HTU + HTU$ and $HTU - HTU$, and applying it in the context of money
Draw rectangles and measure and calculate their perimeters; find the area of rectilinear shapes drawn on a square grid by counting squares	ME4L4 Measuring area Counting squares to find the areas of simple shapes
Know that angles are measured in degrees and that one whole turn is 360°; compare and order angles less than 180°	SH4S7 Angles Comparing and ordering angles
Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line	CN4S18 Lengths as decimals Converting lengths written in centimetres to metres using decimal notation
Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements	ME4S3 Capacities Comparing the capacities of cylindrical containers visually and then by measuring
Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit	Children could carry out practical measuring activities that involve recording from a variety of different scales.
Read time to the nearest minute; use am, pm and 12-hour clock notation; choose units of time to measure time intervals; calculate time intervals from clocks and timetables	ME4S6 Choosing units of time Choosing appropriate units of time to measure the duration of activities ME4S7 Time intervals Calculating the lengths of flights from London to various cities around the world

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, answer, method, explain, predict, reason, reasoning, pattern, relationship, calculation, equation, decimal, decimal point, decimal place, add, subtract, multiply, divide, order, compare, sum, total, difference, plus, minus, product, remainder, calculator, pound (£), penny/pence (p), measure, estimate, metric unit, standard unit, length, distance, perimeter, area, mass, weight, capacity, ruler, measuring tape, balance, scales, measuring cylinder/jug, angle, right angle, set square, units of measurement and abbreviations: kilometre (km), metre (m), centimetre (cm), millimetre (mm), kilogram (kg), gram (g), litre (l), millilitre (ml), square centimetre (cm²), degrees (°), time, a.m., p.m., digital, analogue, timetable, arrive, depart, hour (h), minute (min), second (s), position, direction, north-east (NE), north-west (NW), south-west (SW), south-east (SE), clockwise, anticlockwise, horizontal, vertical, grid</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Money category in Image bank • Number lines • Function machine • Multiplication grid from number grid tool • Scales • Ruler • Volume category in Image bank • Coordinate and background grids • Line drawing tool • Shape drawing tools • Regular polygon drawing tools • Angles 		<p>Use activity 4 Money bags or activity 6 Sponsored walk from <i>Apex Maths 4</i> to focus on solving 'real life' money problems by choosing appropriate number operations and methods of calculation.</p> 	<p>Use <i>Apex Maths Word Problems CD-ROM 4</i> as a source of appropriate one-step and two-step problems.</p> 



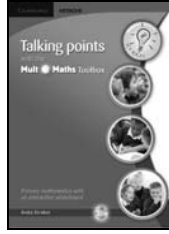
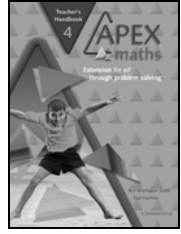

Year 4

Block E: Securing number facts, relationships and calculating

Unit 1

Objectives for this unit	Mult-e-Maths activities
Represent a puzzle or problem using number sentences, statements or diagrams; use these to solve the problem; present and interpret the solution in the context of the problem	UA4L4 Grouping sets of numbers, pages 1 and 2 Grouping sets of numbers according to given rules
Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4L6 Dividing money amounts Applying understanding of division and remainders in the context of money
Use diagrams to identify equivalent fractions (e.g. $\frac{5}{8}$ and $\frac{3}{4}$, or $\frac{70}{100}$ and $\frac{7}{10}$); interpret mixed numbers and position them on a number line (e.g. $3\frac{1}{2}$)	CN4S22 Fractions that are the same Identifying equivalent fractions CN4L12 Equal fractions Recognising simple fractions that are several parts of a whole, then equivalences, such as $\frac{1}{2}$, $\frac{2}{4}$...
Recognise the equivalence between decimal and fraction forms of one half, quarters, tenths and hundredths	CN4L11 Reading scales, pages 1 and 2 Writing measurements using fractions and decimal fractions
Identify pairs of fractions that total 1	NF4L10 Fractions making 1 Identifying pairs of fractions that total one whole
Find fractions of numbers, quantities or shapes (e.g. $\frac{1}{5}$ of 30 plums, $\frac{3}{8}$ of a 6 by 4 rectangle)	CA4S14 Fractions of numbers Using division to find unit fractions of numbers CA4S15 Finding fraction relationships Finding what fraction a smaller shape is of a larger shape

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculator, calculate, calculation, equation, operation, symbol, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, add, subtract, multiply, multiplied by, divide, divided by, sum, total, difference, plus, minus, product, quotient, remainder, multiple, factor, divisor, divisible by, fraction, unit fraction, mixed number, numerator, denominator, equivalent, proportion, in every, for every, to every</p>		<p>Use A Maths Dictionary for Kids when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following Mult-e-Maths Toolbox tools for this unit:</p> <ul style="list-style-type: none"> • Multiplication grid from number grid tool • Fraction labels • Fraction wall • Equivalence machine • Fractions of quantities • Fractions of circles • Fractions of squares 		<p>Use activity N4.8 Multiplication and division from Talking points with the Mult-e-Maths Toolbox to play a game involving the quick recall of multiplication facts and related division facts.</p> 	<p>Use activity 9 Fair shares from Apex Maths 4 to focus on solving problems involving fractions.</p> <p>Use activity 20 Wristbands from Apex Maths 4 to solve problems involving the use of sequences, multiples and reasoning.</p> 
		<p>Use Perfect Times to practise recall of multiplication facts.</p>	





Year 4

Block E: Securing number facts, relationships and calculating

Unit 2

Objectives for this unit	Mult-e-Maths activities
Represent a puzzle or problem using number sentences, statements or diagrams; use these to solve the problem; present and interpret the solution in the context of the problem	UA4L4 Grouping sets of numbers, pages 3 and 4 Grouping sets of numbers according to given rules
Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4S13 Remainders and money Using times-tables facts to solve divisions with remainders, and relating remainders to money amounts NF4L7 Rounding up or down after division Using division to solve word problems involving remainders, and rounding up or down depending on the context
Recognise the equivalence between decimal and fraction forms of one half, quarters, tenths and hundredths	CN4L11 Reading scales, page 3 Writing measurements using fractions and decimal fractions
Use diagrams to identify equivalent fractions (e.g. $\frac{6}{8}$ and $\frac{3}{4}$, or $\frac{70}{100}$ and $\frac{7}{10}$); interpret mixed numbers and position them on a number line (e.g. $3\frac{1}{2}$)	CN4S21 What is the fraction? Identifying fractional parts of groups and representing objects using mixed numbers CN4L13 Fraction order Comparing fractions, one of which is a half CN4L14 Fractions on a number line Ordering fractions on a number line
Find fractions of numbers, quantities or shapes (e.g. $\frac{1}{5}$ of 30 plums, $\frac{3}{8}$ of a 6 by 4 rectangle)	CA4L14 Non-unit fractions of numbers Using unit fractions of numbers to find non-unit fractions of numbers
Identify pairs of fractions that total 1	NF4S17 Fraction wall Identifying what fraction needs to be added to a given fraction to make a whole

End-of-year expectations for this unit are in **bold**.

Vocabulary					
<p>problem, solution, calculator, calculate, calculation, equation, operation, symbol, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, add, subtract, multiply, multiplied by, divide, divided by, sum, total, difference, plus, minus, product, quotient, remainder, multiple, factor, divisor, divisible by, fraction, unit fraction, mixed number, numerator, denominator, equivalent, proportion, in every, for every, to every</p>		<p>Use A Maths Dictionary for Kids when discussing mathematical vocabulary for this unit.</p> 			
Other resources					
<p>Use the following Mult-e-Maths Toolbox tools for this unit:</p> <ul style="list-style-type: none"> • Multiplication grid from number grid tool • Fraction labels • Fraction wall • Equivalence machine • Fractions of quantities • Fractions of circles • Fractions of squares 		<p>Use activity 3 Animal farm from Apex Maths 4 to focus on using understanding of fractions and reasoning about numbers.</p> <p>Use activity 28 Last digit patterns from Apex Maths 4 to investigate patterns in times-tables.</p>		<p>Use Perfect Times to practise recall of multiplication facts.</p>	



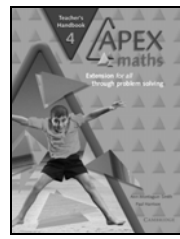
Year 4

Block E: Securing number facts, relationships and calculating

Unit 3

Objectives for this unit	Mult-e-Maths activities
Represent a puzzle or problem using number sentences, statements or diagrams; use these to solve the problem; present and interpret the solution in the context of the problem	UA4L5 Pick three numbers, page 1 Investigating ways of choosing two or three numbers to make a total of 10, 20, 50 or 100
Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NF4S16 Finding multiplications Identifying multiplications from given products
Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders (e.g. 15×9, $98 \div 6$)	CA4S13 Informal written method for division Consolidating the informal written method of division that involves subtracting multiples of the divisor CA4L12 Standard written method of multiplication Developing a standard written method of solving $TU \times U$ from the grid method
Use diagrams to identify equivalent fractions (e.g. $\frac{6}{8}$ and $\frac{3}{4}$, or $\frac{70}{100}$ and $\frac{7}{10}$); interpret mixed numbers and position them on a number line (e.g. $3\frac{1}{2}$)	CN4S23 Comparing fractions Comparing fractions to decide whether they are greater or less than one half CN4S24 Halves and quarters on a number line Identifying the positions of mixed numbers on a number line
Recognise the equivalence between decimal and fraction forms of one half, quarters, tenths and hundredths	CN4L11 Reading scales, page 4 Writing measurements using fractions and decimal fractions
Find fractions of numbers, quantities or shapes (e.g. $\frac{1}{5}$ of 30 plums, $\frac{3}{8}$ of a 6 by 4 rectangle)	CA4L15 Comparing quantities Comparing 2 shapes, amounts of money, measures... in order to make a statement about what fraction of the larger the smaller is
Use the vocabulary of ratio and proportion to describe the relationship between two quantities (e.g. 'There are 2 red beads to every 3 blue beads, or 2 beads in every 5 beads are red'); estimate a proportion (e.g. 'About one quarter of the apples in the box are green')	CN4S25 Tile patterns Making repeating patterns with a given proportion of tiles of one colour CN4S26 Estimating a fraction of an amount Estimating what fraction of a jar is filled CN4S27 What is the proportion? Identifying the fractions of various grids that are coloured CN4S28 Estimating proportions Estimating the proportion of fuel used/remaining using a fuel gauge CN4L15 Proportion Exploring simple ideas of proportion, using language such as 'one in every' CN4L16 Describing ratios and proportions Describing and investigating ratios and proportions in repeating patterns CN4L17 Estimating proportions Using estimates of proportions to estimate numbers of objects and positions of numbers on a number line

End-of-year expectations for this unit are in **bold**.

Vocabulary			
<p>problem, solution, calculator, calculate, calculation, equation, operation, symbol, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, add, subtract, multiply, multiplied by, divide, divided by, sum, total, difference, plus, minus, product, quotient, remainder, multiple, factor, divisor, divisible by, fraction, unit fraction, mixed number, numerator, denominator, equivalent, proportion, in every, for every, to every</p>		<p>Use <i>A Maths Dictionary for Kids</i> when discussing mathematical vocabulary for this unit.</p> 	
Other resources			
<p>Use the following <i>Mult-e-Maths Toolbox</i> tools for this unit:</p> <ul style="list-style-type: none"> • Multiplication grid from number grid tool • Function Machine • Fraction labels • Fraction wall • Equivalence machine • Fractions of quantities • Fractions of circles • Fractions of squares • Sweets category in Image bank 		<p>Use activity 26 The Pizza Place or activity 30 Cutting the cake from <i>Apex Maths 4</i> to focus on solving problems involving fractions and proportion.</p>	
		<p>Use <i>Perfect Times</i> to practise recall of multiplication facts.</p>	