

Year 4 Planning grid

Introduction

This document is designed to help you to match activities from the *Mult-e-Maths* strand discs with the renewed *Primary Framework*.

The planning grid lists all the Year 4 learning objectives from the *Primary Framework* arranged in the seven Framework strands:

- Using and applying mathematics
- Counting and understanding number
- Knowing and using number facts
- Calculating
- Understanding shape
- Measuring
- Handling data

End-of-year expectations are given in **bold**.

Each *Mult-e-Maths* activity is matched to the Framework learning objective it links to most closely. In some cases a *Mult-e-Maths* activity now better matches a different year group from that given in its activity reference, e.g. the estimating proportions concepts discussed in the 'NS5S9: What proportion?' are now better suited to the Year 4 learning objectives. Such activities are marked in the planning grid with an asterisk, e.g. * **MD5S9 What proportion?**

Mult-e-Maths lessons and starters are referenced in the planning grid by the strand CD-ROM they were included on and by their activity number:

FD refers to the Fractions, Decimals, Percentages, Ratio and Proportion strand

NS refers to the Numbers and the Number System strand

AD refers to Additions and Subtraction strand

MD refers to Multiplication and Division strand

SS refers to Measures, Shape, Space and Handling Data strand

SP refers to the Solving Problems strand

AS4S1 refers to Addition and Subtraction Year 4 Starter 1

AS4L1 refers to Addition and Subtraction Year 4 Lesson 1

For ease of reference, all lessons are highlighted in grey.

We are developing a fully revised edition of *Mult-e-Maths* matched to the renewed Primary Framework. For further information about this please call the Education Information Line on 01223 325013, or email educustserve@cambridge.org

Using and applying	
Learning objectives	Multi-e-Maths Starters and Lessons
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	SP4L1 Money problems Working out amounts that can be made from given coins
	SP4L2 Making numbers from digits Using knowledge of place value to investigate the numbers that can be made from given digits
	SP4L3 Grid problems Investigating what numbers to cover on a grid to fulfil given conditions
	SP4L4 Pick three numbers Investigating ways of choosing two or three numbers to make a total of 10, 20, 50 or 100
	SP4L6 'Real life' money problems Solving money problems involving addition and subtraction using a structured approach
	SP4L9 Capacity problems Solving capacity problems involving one or more steps
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	SP4L5 Grouping sets of numbers Grouping sets of numbers according to given rules
Suggest a line of enquiry and the strategy needed to follow it; collect, organise and interpret selected information to find answers	SP4L1 and SP4L4 link to this objective as well
Identify and use patterns, relationships and properties of numbers or shapes; investigate a statement involving numbers and test it with examples	SP4L7 Investigating prisms Investigating a general statement about prisms
	SP4L10 Using diagrams to solve problems Answering questions about numbers by sorting them according to two criteria on to Venn and Carroll diagrams and identifying multiples of 2, 3, 4, 5 and 10
	NS4L4 Odd and even numbers Investigating odd and even totals and differences
	NS4L8 Odd and even properties Investigating odd and even numbers in sequences and statements about odd and even totals
Report solutions to puzzles and problems, giving explanations and reasoning orally and in writing, using diagrams and symbols	SP4L8 Direction investigations Investigating possible routes between two points on a grid using compass directions
Counting and understanding number	
Learning objectives	Multi-e-Maths Starters and Lessons
Recognise and continue number sequences formed by counting on or back in steps of constant size	NS4S3 Counting in 10s, 100s and 1000s Counting on and back in 10s, 100s, 1000s from numbers with different numbers of digits
	NS4S4 Odd and even numbers Identifying odd and even numbers up to 1000 from a given description
	NS4S5 Multiples of 10, 100 and 1000 Adding and subtracting 1, 10, 100 and 1000, and their multiples

<p>Recognise and continue number sequences formed by counting on or back in steps of constant size (continued)</p>	<p>NS4S8 Counting on and back Making predictions about number sequences</p>
	<p>NS4S12 Number sequences Identifying patterns in number sequences and extending the sequences</p>
	<p>NS4S13 Number sequence puzzles Completing number sequences where no consecutive entries are given</p>
	<p>NS4S14 Subtracting in 1s, 10s and 100s Playing a game where a number is reduced to zero by subtracting multiples of 1, 10 and 100</p>
	<p>NS4L3 Number sequences Recognising and extending number sequences</p>
	<p>AS4S2 Steps of 10 and 100 Adding and subtracting multiples of 10 and 100 to/from a number with up to 4 digits</p>
	<p>AS4L2 Counting in steps Counting in repeated steps of 10 and 100 to solve additions and subtractions</p>
<p>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 > (e.g. $-3 > -5$, $-1 < +1$)</p>	<p>NS4S1 What's the largest number? Trying to make the largest 4-digit number using four random digits that are revealed one at a time</p>
	<p>NS4S2 Estimating using a number line Making and justifying estimates on a number line</p>
	<p>NS4S6 Comparing numbers Identifying calculations to complete number sentences containing the symbols <, > and =</p>
	<p>NS4S7 Comparing temperatures Using a thermometer scale to calculate with negative numbers</p>
	<p>NS4S10 Ordering whole numbers Creating and ordering 4-digit numbers with the same thousands digit</p>
	<p>NS4S15 Negative numbers Adding and subtracting to/from positive and negative numbers using a number line</p>
	<p>NS4L1 Understanding place value Understanding the place value of numbers to at least 10 000</p>
	<p>NS4L2 Estimation Estimating quantities, proportions and positions on a number line</p>
	<p>NS4L6 Comparing numbers Comparing and ordering numbers</p>
	<p>NS4L7 Negative numbers Recognising and comparing negative numbers</p>
	<p>NS4L9 Creating and comparing numbers Comparing and ordering numbers created using the same 4 digits</p>
	<p>NS4L10 Rounding Rounding numbers to the nearest 10 and 100</p>
<p>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</p>	<p>FD4S8 Ordering amounts of money Ordering amounts of money, less than £10, written in decimal notation</p>
	<p>FD4S9 Money totals Finding totals of amounts of notes and coins and expressing them in pounds, using decimal notation, and in pence</p>
	<p>FD4S10 Lengths as decimals Converting lengths, written in centimetres, to metres using decimal notation</p>

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 (continued)	FD4S11 Rounding money amounts Rounding amounts of money, written using decimal notation, to the nearest pound
	FD4L7 Tenths and decimals Reading, writing and ordering tenths as decimals
	FD4L8 Money Using decimal notation to express amounts of money
Recognise the equivalence between decimal and fraction forms of one half, quarters, tenths and hundredths	FD4L9 Reading scales 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. $3\frac{1}{2}$)	FD4S1 What is the fraction? Identifying fractional parts of groups and representing objects using mixed numbers
	FD4S2 Fractions that are the same Identifying equivalent fractions
	FD4S4 Comparing fractions Comparing fractions to decide whether they are greater or less than one half
	* FD3S11 Halves and quarters on a number line Identifying the positions of mixed numbers on a number line
	FD4L1 Equal fractions Recognising simple fractions that are several parts of a whole, then equivalences, such as $\frac{1}{2}$, $\frac{2}{4}$...
	FD4L3 Fraction order Comparing fractions, one of which is a half
	* FD3L7 Fractions on a number line Ordering fractions on a number line
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')	FD4S7 Tile patterns Making repeating patterns with a given proportion of tiles of one colour
	* FD3S10 Estimating a fraction of an amount Estimating what fraction of a jar is filled
	* FD6S6 What's the fraction? Identifying the fractions of various grids that are coloured
	FD4L6 Proportion Exploring simple ideas of proportion, using language such as 'one in every'
	* FD5L6 Describing ratios and proportions Describing and investigating ratios and proportions in repeating patterns
	* NS5S9 What proportion? Estimating proportions of a large set of objects
	* NS6S10 Estimating proportions Estimating the proportion of fuel used/remaining using a fuel gauge
Knowing and using number facts	
Learning objectives	Mult-e-Maths Starters and Lessons
Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000	AS4S12 Make 1000 Finding how many need to be added to a given multiple of 50 to make 1000
	AS4S15 Adding several multiples of 10 Using a range of mental strategies to add several 2-digit multiples of 10
	* AS6S1 Adding multiples of 100 Adding pairs of 4-digit multiples of 100
	* AS6S3 Complements to 10 000 and 100 000 Finding pairs of multiples of 100 to make 10 000 and pairs of multiples of 1000 to make 100 000

Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000 (continued)	AS4L9 Rapid recall Consolidating knowledge of number facts to 20 and using them to find answers to other calculations
	AS4L10 Place value and known facts Using known number facts and place value to solve problems involving larger numbers
Identify the doubles of two-digit numbers; use these to calculate doubles of multiples of 10 and 100 and derive the corresponding halves	MD4S1 Doubling and halving numbers to 20 Practising giving doubles of whole numbers to 20 and their corresponding halves
	MD4S2 Doubling and halving numbers to 50 Practising giving doubles of whole numbers to 50 and the corresponding halves
	MD4S7 Doubling and halving multiples of 10 Solving puzzles by doubling and halving multiples of 10 and applying this to solving problems
	MD4S8 Doubling and halving multiples of 100 Solving puzzles by doubling and halving multiples of 100
	* MD5S1 Doubles of numbers to 100 Practising finding doubles of whole numbers to 100 and the corresponding halves
	* MD5S7 Doubles of multiples of 10 to 1000 Practising finding doubles of multiples of 10 to 1000 and the corresponding halves
	* MD6S3 Doubling and halving multiples of ten Finding doubles and halves of multiples of 10
	MD4L1 Doubling and halving Doubling and halving by partitioning first, and using doubles and halves to multiply and divide
	MD4L8 Using doubling and halving Reinforcing how partitioning can help with doubling and halving, and solving problems involving doubling and halving
Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple	NS4S11 Multiples Recognising multiples and relationships between them
	NS4L11 Identifying multiples Identifying multiples of 2, 3, 4, 5 and 10
	NS4L12 Investigating multiples Looking at patterns of multiples in a multiplication grid
	* NS5L3 Patterns of multiples Identifying patterns in sequences of multiples and relationships between them
	MD4S3 Multiplication facts for 2, 3, 4, 5 and 10 Using multiplication facts for 2, 3, 4, 5 and 10, and related division facts, to solve number puzzles
	MD4S4 Times-tables, doubles and halves Solving problems using knowledge of multiplication facts, and doubling and halving
	MD4S5 Making a product Finding all the multiplications involving pairs of whole numbers that have a product of 24
	MD4S6 Remainders and money Using times-tables facts to solve divisions with remainders, and relating remainders to money amounts
	MD4S9 Multiplying by 9 and 11 Using knowledge of how to multiply by 10 to multiply 2-digit numbers by 9 and 11
	MD4S10 Multiplying by 6 Using multiplication facts for 2 and 4 to multiply by 6
	MD4S11 Multiplying by 8 Use strategies to multiply by 8, to help develop knowledge of the 8 times-table

<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 (continued)</p>	<p>MD4S12 Times-tables recall Multiplying pairs of single-digit numbers and deducing answers given one single-digit number in a pair</p>
	<p>MD4S13 Finding multiplications Identifying multiplications from given products</p>
	<p>MD4S15 Finding and using multiplication facts Deducing multiplication facts for 13 from known facts, and using them to solve divisions with remainders</p>
	<p>MD4L6 Multiplying using factors Using factors of 2-digit numbers to make multiplying easier</p>
	<p>MD4L10 Rounding up or down after division Using division to solve word problems involving remainders, and rounding up or down depending on the context</p>
	<p>MD4L11 Known facts and place value Using times-tables facts to multiply 2-digit numbers by single-digit numbers</p>
<p>Use knowledge of rounding, number operations and inverses to estimate and check calculations</p>	<p>MD4L3 Relationships between operations Identifying and applying relationships between multiplication and division</p>
	<p>MD4L9 Calculating and checking Solving multiplication and division problems and checking the results using an inverse operation</p>
<p>Identify pairs of fractions that total 1</p>	<p>FD4S3 Fraction wall Identifying what fraction needs to be added to a given fraction to make a whole</p>
	<p>FD4L2 Fractions making 1 Identifying pairs of fractions that total one whole</p>
<p>Calculating</p>	
<p>Learning objectives</p>	<p>Mult-e-Maths Starters and Lessons</p>
<p>Add or subtract mentally pairs of two-digit whole numbers (e.g. $47 + 58$, $91 - 35$)</p>	<p>AS4S1 Finding differences Finding small differences by counting up through multiples of 10, 100 or 1000</p>
	<p>AS4S3 Partitioning and addition Using partitioning to help with the addition of pairs of 2-digit numbers</p>
	<p>AS4S4 Near doubles Identifying near doubles and using doubles to find their totals</p>
	<p>AS4S6 Related number facts Using understanding of addition and subtraction and the relationship between them to give related number facts</p>
	<p>AS4S10 Different totals Using numbers from a given set to create as many different totals as possible</p>
	<p>AS4S11 Make 100 Finding how many need to be added to a given number to make 100</p>
	<p>AS4S16 Two-digit pairs Choosing and using appropriate mental methods to add and subtract pairs of 2-digit numbers</p>
	<p>AS4S17 Missing number additions Finding missing numbers in additions where a pair of 2-digit numbers are being added</p>
	<p>* AS5S1 Addition bingo Using appropriate addition strategies with 1-digit and 2-digit numbers</p>
	<p>* AS5S2 Subtraction bingo Using appropriate subtraction strategies with 1-digit and 2-digit numbers</p>
	<p>* AS5S6 Total cost Adding money amounts</p>
	<p>AS4L1 Counting the difference Finding small differences by counting up</p>

<p>Add or subtract mentally pairs of two-digit whole numbers (e.g. 47 + 58, 91 – 35) (continued)</p>	<p>AS4L3 Adding tens first Partitioning 2-digit numbers and adding the tens first</p>
	<p>AS4L4 Near doubles Using doubles to find near doubles</p>
	<p>AS4L6 Related number facts Using one number fact to find related number facts</p>
	<p>AS4L8 Adding larger numbers Refining strategies for mental addition</p>
<p>Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p</p>	<p>AS4S9 Column subtraction Identifying missing numbers in column subtractions involving HTU – TU</p>
	<p>AS4S18 Column addition of money amounts Identifying missing money amounts in column additions</p>
	<p>AS4L12 Written methods for addition Using written methods, including 'carrying', to support addition</p>
	<p>AS4L13 Written methods for subtraction Using decomposition within written methods of subtraction</p>
	<p>AS4L14 How much? Using written methods to support calculations involving money amounts in pound notation</p>
<p>Multiply and divide numbers to 1000 by 10 and then 100 (whole-number answers), understanding the effect; relate to scaling up or down</p>	<p>NS4S9 Multiplying by 10 Applying understanding of the effect of multiplying by 10</p>
	<p>NS4L5 Multiplying and dividing by 10 Investigating the effect of multiplying and dividing by 10</p>
<p>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)</p>	<p>MD4S14 Multiplying by partitioning Partitioning the 2-digit number in a TU × U multiplication to make multiplying easier</p>
	<p>MD4S16 Informal written method for division Consolidating the informal written method of division that involves subtracting multiples of the divisor</p>
	<p>MD4L2 Informal method for multiplication Approximating answers to multiplications and solving them using the grid method</p>
	<p>MD4L5 Multiplying by partitioning Partitioning numbers so that multiplications can be solved using known facts</p>
	<p>MD4L7 Standard method of written multiplication Developing a standard written method of solving TU × U from the grid method</p>
	<p>MD4L13 Informal method of written division Using a 'chunking' method to divide, and beginning to record the method systematically</p>
<p>Find fractions of numbers, quantities or shapes (e.g. $\frac{1}{5}$ of 30 plums, $\frac{3}{8}$ of a 6 by 4 rectangle)</p>	<p>FD4S5 Fractions of numbers Using division to find unit fractions of numbers</p>
	<p>FD4S6 Finding fraction relationships Finding what fraction a smaller shape is of a larger shape</p>
	<p>FD4L4 Fractions and division Using division to find unit fractions of quantities</p>
	<p>FD4L5 Comparing quantities Comparing two shapes, amounts of money, measures... in order to make a statement about what fraction of the larger the smaller is</p>
<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</p>	

Understanding shape	
Learning objectives	Mult-e-Maths Starters and Lessons
Draw polygons and classify them by identifying their properties, including their line symmetry	SS4S1 Odd shape out Finding similarities and differences in 2-D shapes
	SS4S2 2-D shapes Sketching 2-D shapes based on descriptions
	SS4L1 Investigating polygons Sorting polygons according to their properties
	SS4L4 Symmetry and reflections Sorting polygons according to their lines of symmetry, and identifying reflections of polygons in a mirror line parallel to one side
Visualise 3-D objects from 2-D drawings and make nets of common solids	SS4S3 Properties of 3-D shapes Describing the properties of 3-D shapes
	SS4L2 Properties of 3-D shapes Identifying the properties of 3-D shapes and using them to sort 3-D shapes
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	SS4S4 Directions and coordinates Describing points on a grid using compass directions and coordinates
	SS4S15 Using coordinates Using coordinates to identify the positions of points on a grid of squares
	SS4L3 Compass points and coordinates Describing routes using compass directions, and points using coordinates
Know that angles are measured in degrees and that one whole turn is 360°; compare and order angles less than 180°	SS4S5 Angles Comparing and ordering angles
	SS4L5 Angles Relating turns to their measurements in degrees and comparing angles less than 180°
Measuring	
Learning objectives	Mult-e-Maths Starters and Lessons
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 (e.g. 1.3 m or 0.6 kg)	SS4S8 Balancing items Finding items with the same mass
	SS4S9 What's the length? Measuring lengths and finding objects that would make a total length of 1 metre
	SS4S10 Capacities Comparing the capacities of cylindrical containers visually and then by measuring
	SS4L8 How heavy? Using the relationship between kilograms and grams
	SS4L9 Capacity 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	SS4S13 How hot is it? Estimating temperatures and using the scale on a thermometer
Draw rectangles and measure and calculate their perimeters; find the area of rectilinear shapes drawn on a square grid by counting squares	SS4L7 Perimeter Measuring and calculating the perimeters of simple shapes
	SS4L12 Measuring area Counting squares to find the areas of simple shapes

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	SS4S6 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
	SS4S7 Estimating time Estimating how long a short task will take and finding the difference between the estimate and the actual time
	SS4L6 Time Reading the time to the nearest minute from analogue and digital clocks, and solving problems involving time
	SS4L11 Using a calendar Investigating the features of calendars and using a calendar to compare dates
Handling data	
Learning objectives	Multi-e-Maths Starters and Lessons
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	SS4S14 Representing and interpreting data Completing and interpreting tally charts and bar charts
	SS4L10 Transport survey Collecting, organising and interpreting data about how children travel to school
Compare the impact of representations where scales have intervals of differing step size	