MEASUREMENT

CURRICULUM PROGRESSION: TRACKING BACK

SINGLE-AGE CLASSES

Titles in the series

Number and Place Value

Addition and Subtraction (including algebra)

Multiplication and Division (including algebra)

Fractions, Decimals and Percentages (including ratio and proportion)

Measurement

Geometry

Statistics

Guidance page

This document aims to show the progression in learning within key areas of mathematics and where the linked teaching can be found within ESSENTIALMATHS. Its purpose is to support teachers to track back to appropriate starting points for pupils who are not currently able to access age-appropriate learning so that they can make appropriate adaptations for them. This document should supplement the information provided on the front cover of each ESSENTIALMATHS sequence, which identifies how learning builds within and between sequences.

In many circumstances, teachers will use the tracking back information to support them in providing appropriate scaffolding for pupils up and into new learning. In addition, it is also particularly helpful when making adaptations for pupils who are operating further away from age related expectations including pupils with SEND so that a clear progression can be seen for their learning.

This document will allow teachers to track back from any ESSENTIALMATHS sequence to see how the learning builds from Early Years across Primary so that an appropriate starting point and progression can be identified for all pupils.

The teaching of measurement has been separated into six strands of learning. These strands are:

- Money
- Length
- Perimeter and area
- Volume and capacity
- Mass
- Time

Within each strand, a short introduction outlines the focus of learning and highlights key building blocks and potential areas of weakness to support teachers in assessment and planning. A progression is then identified showing a breakdown of the small steps of learning and signposting where related teaching can be found within ESSENTIALMATHS referencing the learning sequence and step number. This includes links to earlier learning with Reception ESSENTIALMATHS and Essential Foundations for Counting (EFFC). Pre-requisite learning and opportunities for application are identified through highlighted rows in each progression.

Pre-requisite learning - learning that will be built on within the progression.
The link may be across domains and therefore refer to another booklet in the series.
The link may be across strands and therefore refer to another strand in this booklet.

Application
Learning is often highly connected, and applications may be made across domains and contexts. Where this is the case, the sequence and step numbers are highlighted blue so that teachers can decide whether to explicitly make these links or continue through the progression at any one point.

Money

Pupils need to have developed some number sense for values within 10 to be able to further develop their understanding of money. They can also use money to support their development of number sense for small values by using 1p coins. It is important, however, for pupils to build an understanding of the relative values of coins and notes used in money as they are not proportionate. For example, 2p coins are larger in size than 5p coins and there is no obvious reason that a 10p coin should have a value that is ten times greater than a 1p coin. Pupils, therefore, need regular opportunities to connect coins to different representations, including proportional ones and this should not be constrained to a "money week".

It can be difficult for pupils to understand that not all values have a specific coin to represent them, but this enables development of **Addition and Subtraction: Part whole** and **Equality** understanding through identifying which coins can be used to generate different totals. Once the value of units is recognised, money can be used as a fantastic opportunity to develop counting skills and especially skip counting in 2s, 5s and 10s, linking to **Multiplication and Division**. When practising calculation strategies, money can be used to provide context and will also be key to application within worded problems.

Decimal understanding can also be developed through the recognition that ten 10p are equal to £1 and that this can be represented using a decimal point to show that 10p is equivalent to a tenth of £1. At this point, pupils often need to be reminded that money is represented using 2 decimal places and although there are no hundredths you would still need the 0 in the hundredths place (10p = £0.10). Pupils will then sometimes confuse their use of units and need to be clear about which to use and that you must not use both (£1.27p).

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1LS37 Place Value: Estimation, ordering and comparison	Step 3	Ordering and comparing values in different representations to 100
2LS2 Place Value: Making tens and some more	Step 2	Regrouping ten pennies for ten pence
	Step 4	Regrouping ten pence for ten pennies
2LS3 Place Value and regrouping 2-digit numbers	Step 1	Identifying the place value in 2-digit numbers using place value cards and base-10
	Step 2	Identifying the place value in 2-digit numbers using a proportional (base-10) and non-proportional (money) model
	Step 3	Comparing representations of 2-digit numbers
2LS5 Representing, ordering and comparing numbers to 100 and quantities for measures	Step 1	Ordering numbers
	Step 2	Ordering numbers represented in a variety of ways
	Step 3	< , > and = symbols
2LS8 Finding complements of 10 and 100 including measures	Step 1	Rehearse complements to 10 and compare them to complements to 100
	Step 2	Continue to rehearse complements to 10 and 100 whilst regrouping
2LS9 Add and subtract numbers mentally using 1- and 2- digit numbers	Step 5	Use rebalancing in context
	Step 9	Add a 1-digit number to a 2-digit numbers using think 10
2LS10 Finding part or whole unknown	Step 6	Missing numbers in a range of contexts including measures
2LS11 Money – making combination and finding change	Step 1	Find different combinations of coins that equal the same amounts of money
	Step 2	Solve calculations involving subtraction of money of the same unit
	Step 3	Solve simple problems in a practical context involving addition and subtraction of money of the same unit
	Step 4	Continue to solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
2LS18 Problem solving with addition and subtraction in a range of contexts	Step 2	The language of problem solving
2LS21 Double and halve 1- and 2- digit numbers and amounts of money	Step 4	Doubling and halving in the context of money
2LS25 Multiplication – Problem solving	Step 1	Bar modelling for multiplication problems
	Step 3	Multiplication and money (£ and p)
	Step 4	Mixed worded problems
2LS26 Division – sharing and grouping	Step 5	Using multiplication facts to divide
2LS35 Multiplication and Division - equality and balance	Step 1	Equality in multiplication
3LS5 Mental Fluency - Addition	Step 6	Finding complements and reordering
	Step 7	Using compensation to add

	Step 8	Using multiple strategies to add mentally
3LS8 Written Addition	Step 5	Using measurement units within addition
3LS10 Problem Solving - worded problems	Step 2	Understanding start, change and result problems
	Step 5	Understanding simple comparison problems
3LS20 Multiplication and division worded problems	Step 1	Worded problems based on equal groups
	Step 2	Rate worded problems involving money
3LS21 Fractions – finding fractions of discrete and continuous quantities	Step 3	Find and write fractions as continuous quantities
	Step 4	A range of worded problems including multi-step
3LS27 Division problem solving – sharing and grouping	Step 2	Division by sharing – comparison problems
	Step 3	Division by grouping
3LS34 Securing the four operations with whole number including problem solving	Step 3	Adding amounts of money
	Step 4	Subtracting amounts of money
	Step 5	Worded problems involving money
4LS18 Measure - money	Step 1	Calculating with money – mental and written addition
	Step 2	Calculating with money – mental and written subtraction
4LS19 Problem solving involving decimals to 2 decimal places	Step 3	Routine problem solving
Year 5 & 6: Application of money as a measure across all learning including four operations and scaling		
Multiplication and Division: Multiplying and Dividing by 10, 100 and 1000		
6LS2 Multiply and Divide by 10, 100 and 1,000	Step 2	Application in the context of measure

Length

Pupil understanding of length is closely linked to **Number and Place Value – Magnitude.** Pupils will further develop their use of comparative language and identify important benchmark values, developing a greater sense of a proportionate system. They will also begin to link benchmarks to standard units of length.

Metric measures operate on a base 10 system and therefore pupils will need to build on their understanding of **Number and Place Value – Place Value** and especially regrouping at 10. This later extends to the decimal number system and links will be made to fraction and decimal expressions of measures (**Fractions, Decimals and Percentages** link). Secure **Multiplication and Division – Multiplying and Dividing by 10, 100 and 1000** will then support conversion between metric units of measure. Once metric measure conversions are secured, imperial measures are introduced, and pupils consider how to scale from known facts to work out approximate conversions.

When practising calculation strategies, length can be used to provide context and will also be key to application within worded problems. This links with, and supports development of, **Addition and Subtraction** as well as **Multiplication and Division**.

Pre-requisite learning	**EFFC: Classification, Group Recognition and Comparison**	
	R: RLS3 Comparison – Measures, RLS7 Use counting to compare RLS13 Ten and some more, RLS16 Counting beyond 20	
	Number sense for values within 10 **Number and Place Value: Number Magnitude and Rounding** **Addition and Subtraction: Part whole** and **Equality**	
RLS3 Comparison - measures	Step 2	Using the language of longer/taller and shorter to compare length or height
	Step 3	Using the language of wider/fatter/thicker and thinner to compare thickness
1LS15 Measures - Language of comparing length, height, mass and speed	Step 1	Using comparative language in the context of length and height
1LS25 Measures: Non-standard measures and introducing simple standard measures	Step 3	Measuring lengths using Cuisenaire rods
	Step 4	Measuring lengths using centimetres
1LS29 Multiplication: scaling and counting in 2s to 24	Step 1	Exploring scaling
	Step 2	Twice as long
1LS34 Fractions of continuous quantities including capacity	Step 3	Fractions in the context of length
1LS37 Place Value: Estimation, ordering and comparison	Step 1	Ordering and comparing lengths to 100
2LS5 Representing, ordering and comparing numbers to 100 and quantities for measures	Step 1	Ordering numbers
	Step 2	Ordering numbers represented in a variety of ways
	Step 4	Order and compare quantities for measures
2LS10 Finding part or whole unknown	Step 6	Missing numbers in a range of contexts including measures

2LS12 Comparison (difference, more, less, fewer)	Step 4	Compare values in the context of measuring heights, lengths and widths and use the language of comparison
	Step 5	Compare values in a variety of contexts
2LS13 Measures – estimate and measure using different scales	Step 1	Estimate on a number line using benchmarks
	Step 5	Solve problems reading scales
2LS25 Multiplication – Problem Solving	Step 1	Bar modelling for multiplication problems
	Step 2	Multiplication of measures
	Step 4	Mixed worded problems
2LS26 Division – sharing and grouping	Step 5	Using multiplication facts to divide
2LS27 Division – grouping and sharing problems including remainders	Step 4	Problems using division in context
2LS32 Fractions of continuous quantities	Step 3	Fractions of length
3LS1 Place Value and Regrouping	Step 1	Varying the order and practice
3LS4 Measures – comparison, estimation and magnitude	Step 1	Develop understanding of appropriate units
3LS5 Mental Fluency - Addition	Step 6	Finding complements and reordering
	Step 7	Using compensation to add
	Step 8	Using multiple strategies to add mentally
3LS8 Written Addition	Step 5	Using measurement units within addition
3LS20 Multiplication and division worded problems	Step 1	Worded problems based on equal groups
	Step 4	Mixed bar model examples including measures and time
3LS21 Fractions – finding fractions of discrete and continuous quantities	Step 3	Find and write fractions as continuous quantities
	Step 4	A range of worded problems including multi-step
3LS25 Multiplication – Multiplying multiples of ten	Step 1	Explore the effect of scaling by ten
3LS35 Place value and decimals	Step 1	Ten times smaller than 1 whole is a tenth
3LS38 Measures – measuring and problem solving	Step 1	Measuring and comparing lengths
	Step 3	Using and comparing mixed units
	Step 4	Adding and subtracting involving measures
	Step 5	Measure problems involving scaling
4LS2 Rounding, estimation and magnitude	Step 1	Estimate number magnitude

4LS7 Factor pairs, integer scaling and correspondence problems	Step 2	Solving integer scaling and correspondence problems
	Step 4	Solving a range of correspondence problems
	Step 5	Creating correspondence problems
4LS8 Problem solving including measures	Step 1	Addition and subtraction problems involving measures
	Step 2	Exploring multiplication
	Step 3	Linking multiplication and division on the bar model
	Step 4	Exploring division
	Step 5	Rearranging multiplication and division models and word problems
	Step 6	Two step problems involving all four operations
4LS9 Multiply and divide a 1- or 2- digit number by 10 and 100	Step 1	Multiplying and dividing by 10 – understanding the effect
4LS10 Measure – Conversion of units	Step 1	Converting between units of length – understanding the calculations needed
4LS11 Measure – compare, estimate and calculate	Step 1	Measuring, estimating, and comparing length
	Step 3	Calculating with length, mass and capacity
4LS22 Fractions in the context of measure	Step 1	Recognising familiar fractions expressed as measures
	Step 2	Ordering measures involving fractions
	Step 3	Mixed worded problems involving a range of measures
5LS3 Place value of numbers with up to 3 decimal places	Step 2	Comparing numbers with up to 2 decimal places
Multiplication and Division: Multiplying and Dividing by 10, 100 and 1000		
5LS19 Measure – Converting Units of Measure	Step 1	Decimal and fraction equivalences of metric measures
	Step 2	Converting from a larger unit to a smaller unit
	Step 3	Converting from a smaller unit to a larger unit
	Step 4	Mixed conversion practice
	Step 5	Scaling measures
5LS31 Solving Problems by Scaling by Simple Fractions and Rates	Step 4	Scale drawings
5LS32 Imperial and Metric Conversions	Step 1	Metric conversion
	Step 2	Metric scale drawings
	Step 4	Imperial units of measure - inches
5LS37 Use Properties of Rectangles	Step 1	Calculating missing lengths in rectangles and shapes or patterns including rectangles

6LS2 Multiply and Divide by 10, 100 and 1,000	Step 2	Application in the context of measure
6LS26 Measures	Step 1	Clarify what is known about measures and converting them
	Step 2	Apply knowledge of measures and conversions to solving problems
	Step 3	Explore the link between miles and kilometres (imperial and metric units of length)
6LS31 Application of previous years' learning	Step 1	Draw 2-D shapes including scaling

Perimeter and Area

Pupils will build on their understanding of length to consider perimeter as the distance around the sides of a closed shape. They will then apply this to **Addition and Subtraction** learning to rehearse mental calculations and to identify the missing perimeter (whole) when lengths (parts) are given and the missing lengths (parts) when the perimeter (whole) and lengths (parts) are provided.

Pupils are taught that area is the amount of space within a closed shape. Understanding of area begins through counting shapes of the same size within the closed shape and develops to make connections with arrays and **Multiplication and Division – Multiplication Facts.** Square numbers are linked to arrays and later pupils build from this to develop their understanding of, and how to calculate, volume.

As understanding of perimeter and area develop, pupils make links to algebra to generalise the formula and then use these to develop efficiency.

Pre-requisite learning	**Measurement - Length**	
3LS15 Perimeter including problem solving using written and mental methods	Step 1	Understand perimeter as distance around the sides of a closed shape – constructing perimeterand introducing the language of length and width
	Step 2	Calculate perimeter in rectilinear shapes (presented on 1cm² squared paper)
	Step 3	Know that different rectangles can have equal perimeters
	Step 4	Finding the perimeter of regular shapes
	Step 5	Finding perimeter of rectangles and regular polygons by measuring
	Step 6	Solving problems and providing proof with perimeter
4LS13 Perimeter	Step 1	Revisiting existing knowledge about perimeter
	Step 2	Calculating perimeter of rectangle shapes with missing sides
	Step 3	Solving problems involving perimeter of rectilinear shapes with missing information
	Step 4	Solving correspondence problems involving perimeter of rectilinear shapes
4LS35 Area	Step 1	Find area of rectilinear shapes by counting squares
	Multiplication and Division: Multiplication Facts - building arrays	
	Step 2	Relate finding area of rectilinear shapes to arrays up to 12 x 12
	Step 3	Problem solving with area
	Step 4	Area and perimeter
5LS20 Area	Step 1	Develop strategies to estimate the area of irregular shapes
	Step 2	Estimate area using standard units
	Step 3	Calculate and compare the area of rectangles
	Step 4	Find unknown measures when calculating area
	Step 5	Working backwards to calculate measures from a given area

5LS21 Volume and Capacity	Step 1	Square numbers and area
5LS26 Perimeter	Step 1	Calculate the perimeter of rectilinear figures (rectangles and squares)
	Step 2	Calculate the perimeter of composite rectilinear shapes
	Step 3	Solve problems using knowledge of perimeter and area
5LS37 Use Properties of Rectangles	Step 1	Calculating missing lengths in rectangles and shapes or patterns including rectangles
6LS7 Area of Parallelograms and Triangles	Step 1	Calculating the area of rectilinear and composite shapes
	Step 2	Finding the area of right-angled triangles
	Step 3	Calculating the area of triangles
	Step 4	Calculating the area of parallelograms
	Step 5	Solving problems involving area of rectangles, triangles and parallelograms
6LS18 Exploring Relationships Between Perimeter and Area	Step 1	Consolidation understanding of perimeter
	Step 2	Consolidation finding the area of rectilinear shapes, parallelograms and triangles
	Step 3	Investigate shapes with the same area but different perimeters and vice-versa
	Step 4	Solve problems involving area and perimeter

Volume and Capacity

Pupil understanding of volume and capacity begins through development of comparative language when measuring. The understanding of number value positions linked to **Number and Place Value** – **Magnitude** is then extended so that pupils make links to reading scales using standard units of volume and capacity.

Metric measures operate on a base 10 system and therefore pupils will need to build on their understanding of **Number and Place Value – Place Value** and especially regrouping at 10. This later extends to the decimal number system and links will be made to fraction and decimal expressions of measures (**Fractions, Decimals and Percentages** link). Secure **Multiplication and Division – Multiplying and Dividing by 10, 100 and 100** will support conversion between metric units of measure. Once metric measure conversions are secured, imperial measures are introduced, and pupils consider how to scale from known facts to work out approximate conversions.

When practising calculation strategies and solving problems, volume and capacity can be used to provide context linking with **Addition and Subtraction** as well as **Multiplication and Division**.

Pre-requisite learning	**EFFC: Classification, Group Recognition and Comparison**	
	R: RLS3 Comparison – Measures, RLS7 Use counting to compare RLS13 Ten and some more, RLS16 Counting beyond 20	
	Number sense for values within 10 **Number and Place Value: Number Magnitude and Rounding** **Addition and Subtraction: Part whole** and **Equality**	
1LS25 Measures: Non-standard measures and introducing simple standard measures	Step 1	Comparing volumes in containers of the same size
	Step 2	Comparing what the same volume looks like in different shaped containers
1LS34 Fractions of continuous quantities including capacity	Step 1	Fractions in the context of capacity
	Step 2	Measuring capacity
2LS5 Representing, ordering and comparing numbers to 100 and quantities for measures	Step 1	Ordering numbers
	Step 2	Ordering numbers represented in a variety of ways
	Step 4	Order and compare quantities for measures
2LS8 Finding complements of 10 and 100 including measures	Step 1	Rehearse complements to 10 and compare them to complements to 100
	Step 2	Continue to rehearse complements to 10 and 100 whilst regrouping
	Step 4	Think addition for subtraction using multiples of 10 within measure
2LS13 Measures – estimate and measure using different scales	Step 1	Estimate on a number line using benchmarks
	Step 2	Estimate and compare capacities
	Step 3	Read capacities on different scales
	Step 4	Read scales on circular dials
	Step 5	Solve problems reading scales
2LS32 Fractions of continuous quantities	Step 4	Fractions of capacity
3LS1 Place Value and Regrouping	Step 1	Varying the order and practice

3LS5 Mental Fluency - Addition	Step 6	Finding complements and reordering
	Step 7	Using compensation to add
	Step 8	Using multiple strategies to add mentally
3LS8 Written Addition	Step 5	Using measurement units within addition
3LS20 Multiplication and division worded problems	Step 1	Worded problems based on equal groups
	Step 4	Mixed bar model examples including measures and time
3LS25 Multiplication – Multiplying multiples of ten	Step 1	Explore the effect of scaling by ten
3LS38 Measures – measuring and problem solving	Step 2	Measuring and comparing mass, volume and capacity
	Step 3	Using and comparing mixed units
	Step 4	Adding and subtracting involving measures
	Step 5	Measure problems involving scaling
4LS8 Problem solving including measures	Step 1	Addition and subtraction problems involving measures
	Step 2	Exploring multiplication
	Step 3	Linking multiplication and division on the bar model
	Step 4	Exploring division
	Step 5	Rearranging multiplication and division models and word problems
	Step 6	Two step problems involving all four operations
4LS10 Measure – Conversion of units	Step 2	Converting between units of mass and capacity – understanding the calculations needed
4LS11 Measure – compare, estimate and calculate	Step 2	Measuring, comparing and estimating with mass and capacity
	Step 3	Calculating with length, mass and capacity
4LS22 Fractions in the context of measure	Step 1	Recognising familiar fractions expressed as measures
	Step 2	Ordering measures involving fractions
	Step 3	Mixed worded problems involving a range of measures
5LS3 Place value of numbers with up to 3 decimal places	Step 2	Comparing numbers with up to 2 decimal places
Multiplication and Division: Multiplying and Dividing by 10, 100 and 1000		
5LS19 Measure – Converting units of measure	Step 1	Decimal and fraction equivalences of metric measures
	Step 2	Converting from a larger unit to a smaller unit
	Step 3	Converting from a smaller unit to a larger unit
	Step 4	Mixed conversion practice
	Step 5	Scaling measures

5LS21 Volume and Capacity	Step 1	Square numbers and area
	Step 2	Build cube numbers
	Step 3	Investigate the volume of cuboids
	Step 4	Estimating volume and capacity
5LS32 Imperial and Metric Conversions	Step 1	Metric conversion
	Step 3	Imperial units of measure - pints
6LS2 Multiply and Divide by 10/100/1,000	Step 2	Application in the context of measure
6LS25 Volume	Step 1	Visualise and calculate the volume of cubes
	Step 2	Calculate and compare volumes
6LS26 Measures	Step 1	Clarify what is known about measures and converting them
	Step 2	Apply knowledge of measures and conversions to solving problems

Mass

Pupil understanding of mass begins through development of comparative language. The development of a sense of scale is linked to **Number and Place Value – Magnitude**. Pupils will identify important benchmark values and develop a greater sense of a proportional system, beginning to link this to standard units of mass. Pupils will 'weigh' objects using pan balances which expose comparison and later using scales. They can find it hard to make the link between linear and circular scales.

Metric measures operate on a base 10 system and therefore pupils will need to build on their understanding of **Number and Place Value – Place Value** and especially regrouping at 10. This later extends to the decimal number system and links will be made to fraction and decimal expressions of measures (**Fractions, Decimals and Percentages** link). Secure **Multiplication and Division – Multiplying and Dividing by 10, 100 and 100** will support conversion between metric units of measure. Once metric measure conversions are secured, imperial measures are introduced, and pupils consider how to scale from known facts to work out approximate conversions.

When practising calculation strategies and problem solving, mass can be used to provide context, linking with **Addition and Subtraction** as well as **Multiplication and Division**.

Pre-requisite learning	**EFFC: Classification, Group Recognition and Comparison**	
	R: RLS3 Comparison – Measures, RLS7 Use counting to compare RLS13 Ten and some more, RLS16 Counting beyond 20	
	Number sense for values within 10 **Number and Place Value: Number Magnitude and Rounding** **Addition and Subtraction: Part whole** and **Equality**	
RLS3 Comparison - measures	Step 4	Using the language of heavier and lighter to compare mass or weight Exploring that bigger things might not be heavier
1LS15 Measures – The language of comparing length, height, mass and speed	Step 2	Using comparative language in the context of mass
	Step 3	Compare the mass of items using pan balances
1LS25 Measures: Non-standard measures and introducing simple standard measures	Step 5	Weighing mass with non-standard units
	Step 6	Weighing mass with standard units
1LS28 Multiplication: Problem-solving	Step 3	Multiplication and measure
2LS5 Representing, ordering and comparing numbers to 100 and quantities for measures	Step 1	Ordering numbers
	Step 2	Ordering numbers represented in a variety of ways
	Step 4	Order and compare quantities for measures
2LS10 Finding part or whole unknown	Step 6	Missing numbers in a range of contexts including measures
2LS12 Comparison (difference, more, less, fewer)	Step 2	Compare values in the context of measuring mass (g) and use the language of comparison
	Step 3	Compare values in the context of measuring mass (kg) and use the language of comparison
	Step 5	Compare values in a variety of contexts

2LS13 Measures – estimate and measure using different scales	Step 1	Estimate on a number line using benchmarks
	Step 4	Read scales on circular dials
	Step 5	Solve problems reading scales
2LS18 Problem solving with addition and subtraction in contexts	Step 2	Find the unknown
3LS1 Place Value and Regrouping	Step 1	Varying the order and practice
3LS4 Measures – comparison, estimation and magnitude	Step 2	Reading scales
3LS5 Mental Fluency - Addition	Step 6	Finding complements and reordering
	Step 7	Using compensation to add
	Step 8	Using multiple strategies to add mentally
3LS8 Written Addition	Step 5	Using measurement units within addition
3LS20 Multiplication and division worded problems	Step 1	Worded problems based on equal groups
	Step 4	Mixed bar model examples including measures and time
3LS21 Fractions – finding fractions of discrete and continuous quantities	Step 3	Find and write fractions as continuous quantities
	Step 4	A range of worded problems including multi-step
3LS38 Measures – measuring and problem solving	Step 2	Measuring and comparing mass, volume and capacity
	Step 3	Using and comparing mixed units
	Step 4	Adding and subtracting involving measures
	Step 5	Measure problems involving scaling
4LS7 Factor pairs, integer scaling and correspondence problems	Step 2	Solving integer scaling and correspondence problems
	Step 4	Solving a range of correspondence problems
	Step 5	Creating correspondence problems
4LS8 Problem solving including measures	Step 1	Addition and subtraction problems involving measures
	Step 2	Exploring multiplication
	Step 3	Linking multiplication and division on the bar model
	Step 4	Exploring division
	Step 5	Rearranging multiplication and division models and word problems
	Step 6	Two step problems involving all four operations
4LS10 Measure – Conversion of units	Step 2	Converting between units of mass and capacity – understanding the calculations needed
4LS11 Measure – compare, estimate and calculate	Step 2	Measuring, comparing and estimating with mass and capacity
	Step 3	Calculating with length, mass and capacity

4LS22 Fractions in the context of measure	Step 1	Recognising familiar fractions expressed as measures
	Step 2	Ordering measures involving fractions
	Step 3	Mixed worded problems involving a range of measures
5LS3 Place value of numbers with up to 3 decimal places	Step 2	Comparing numbers with up to 2 decimal places
Multiplication and Division: Multiplying and Dividing by 10, 100 and 1000		
5LS19 Measure – Converting Units of Measure	Step 1	Decimal and fraction equivalences of metric measures
	Step 2	Converting from a larger unit to a smaller unit
	Step 3	Converting from a smaller unit to a larger unit
	Step 4	Mixed conversion practice
	Step 5	Scaling measures
5LS32 Imperial and Metric Conversions	Step 1	Metric conversion
	Step 5	Imperial units of measure - pounds
6LS2 Multiply and Divide by 10, 100 and 1,000	Step 2	Application in the context of measure
6LS26 Measures	Step 1	Clarify what is known about measures and converting them
	Step 2	Apply knowledge of measures and conversions to solving problems

Time

Pupils initially consider time in terms of sequencing and identifying the order of events. They then begin to identify, name and consider the relationship between relevant benchmarks such as days and weeks. When considering telling the time, pupils are introduced to the circular scale and using hands to identify o'clock times. This builds over time and pupils make links with fractions and angles of turn to identify half past and quarter past and to times. Pupils often find it hard to read 'quarter to' times and need representations which show that the hour hand has not yet reached the o'clock time. Reading the time in 5-minute intervals makes links to skip counting skills and links with **Multiplication and Division**.

As time operates in different base systems (most notably base 60), there are lots of opportunities to link with **Addition and Subtraction: Part whole** and **Equality** to see how numbers can be regrouped differently. This is particularly important when calculating duration and regrouping to bridge through hours. When practising calculation strategies, time can therefore be used to provide context and will also be key to application within worded problems. Reading the time and calculating duration are skills that are then built upon when pupils are taught to read timetables.

As pupils become more proficient in telling the time links can be made to different representations and conversion between these including analogue, digital, 12-hour, 24-hour and using Roman numerals. This provides opportunities for conversion in different base systems building on known and facts and relating to scaling.

Pre-requisite learning	**EFFC: Classification, Group Recognition and Comparison**	
	R: RLS3 Comparison – Measures, RLS7 Use counting to compare RLS13 Ten and some more	
	Number sense for values within 10 **Number and Place Value: Number Magnitude and Rounding**	
1LS15 Measures – The language of comparing length, height, mass and speed	Step 1	Using comparative language in the context of time
	Step 2	Ordinal numbers used to order timed events
1LS16 Sequencing events – days of the week & months of the year	Step 1	Days of the week
	Step 2	Events during the week
	Step 3	Months and seasons of the year
1LS31 Time: telling the time, o'clock and half past	Step 1	Clockwise and anti-clockwise turns
	Step 2	The hands on a clock
	Step 3	Telling the time – o'clock
	Step 4	Telling the time – half past
	Step 5	Intervals of time
1LS34 Fractions of continuous quantities including capacity	Step 4	Fraction of a turn using the context of a clock face
2LS14 Statistics: Total and comparison in block graphs, pictograms, tables and tally charts	Step 2	Information tables

2LS19 Time - Telling the time to: o'clock, half past, quarter past and to	Step 1	Turns – quarter turn, half turn, three-quarter turn and full
	Step 2	Telling the time – o'clock, quarter past, half past, quarter to
	Step 3	Telling the time to 5-minute intervals
2LS20 Time: estimating, ordering and comparing time	Step 1	Estimating intervals of time
	Step 2	Ordering intervals of time
	Step 3	Comparing intervals of time
2LS32 Fractions of continuous quantities	Step 5	Fractions of time
2LS33 Time - Telling the time to the nearest 5 minutes	Step 1	Telling the time – o'clock and half past
	Step 2	Telling the time – quarter past the hour
	Step 3	Telling the time – quarter to the hour
	Step 4	Telling the time to the nearest 5 minutes
	Step 5	Intervals of time
3LS10 Problem Solving - worded problems	Step 2	Understanding start, change and result problems
3LS12 Angles, right angles and estimation	Step 2	Comparing and ordering angles (using right angle as a benchmark)
3LS20 Multiplication and division worded problems	Step 1	Worded problems based on equal groups
	Step 4	Mixed bar model examples including measures and time
3LS21 Fractions of discrete and continuous quantities	Step 3	Find and write fractions as continuous quantities
	Step 4	A range of worded problems including multi-step
3LS31 Time: hours, minutes, seconds, days, weeks, months, years	Step 1	Understand how days, months and years are related
	Step 2	Finding complements and intervals of 60
3LS32 Time: telling the time (analogue and digital) and estimation	Step 1	Recognising intervals on an analogue clock
	Step 2	Telling the time to the nearest minute on an analogue and digital clock
	Step 3	Understanding Roman numerals on clocks
	Step 4	Understanding am and pm
	Step 5	Estimating time and using timers
3LS33 Time - duration	Step 1	Time to the nearest hour
	Step 2	Adding hours and minutes
	Step 3	Subtracting hours and minutes
	Step 4	Duration of time
	Step 5	Finding unknown start and end times from given duration of events
	Step 6	Comparing the duration of events

4LS10 Measure – Conversion of units	Step 3	Converting hours to minutes
	Step 4	Converting minutes to hours and hours to minutes
	Step 5	Converting between units of time – understanding the calculations needed
4LS11 Measure – compare, estimate and calculate	Step 4	Calculating time addition (hours and minutes)
	Step 5	Calculating time subtraction (hours and minutes)
	Step 6	Calculating duration of time (hours and minutes)
4LS12 Discrete and continuous data	Step 2	Interpreting continuous data
	Step 3	Presenting data – choosing the best way to present it
4LS26 Time – read, write, calculate and convert time	Step 1	12- and 24-hour clock
	Step 2	Understanding and calculating duration
	Step 3	Find unknown start or end times when duration is known
	Step 4	Converting hours, minutes and seconds
	Step 5	Converting days to weeks and months to years
5LS19 Measure – Converting Units of Measure	Step 2	Converting from a larger unit to a smaller unit
	Step 3	Converting from a smaller unit to a larger unit
	Step 4	Mixed conversion practice
5LS34 Reading timetables and calculating with time	Step 1	Exploring what we know about telling the time and converting units of time
	Step 2	Reading and interpreting timetables
	Step 3	Completing missing information in timetables
	Step 4	Solving problems involving completing and reading timetables and calculating with time
6LS26 Measures	Step 1	Clarify what is known about measures and converting them
	Step 2	Apply knowledge of measures and conversions to solving problems
6LS31 Application of previous years' learning	Step 3	Revise reading, writing, converting and applying understanding of time