## cances

## LEARNING LADDERS

MATHS


ST LUKES C OF E PRIMARY SCHOOL


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## TIMES TABLES

Can I recall and use the multiplication and division facts for the 7 times table?

Rung 10
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recall and use the multiplication and division facts for the 6 and 9 times tables recognising their relationship to the 3 times tables?

Rung 9
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recall and use the multiplication and division facts for the 8 times tables recognising its relationship to the 4 times table?

Rung 8 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recall and use the multiplication facts for the 3 and 4 times tables?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I recall and use the multiplication and division facts for the 3 and 4 times tables?

Rung 6

Can I recall and use the multiplication facts for the 3 and 4 times tables?

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I recall and use division facts for 2,5 and 10 times tables?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recall and use multiplication facts for 2,5 and 10 times tables?


Can I count in 3's from zero?

| Rung 2 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I count in 2's, 5's and 10's from zero?

## TIMES TABLES



Can I estimate the answer to an addition calculation or use the inverse to check it is correct?

## Rung 10 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can $I$ add 2 digit numbers and 3 digit numbers using expanded column addition?

Rung 9 $\quad$ complete $\quad$ complete complete

Can I partition 2 and 3 digit numbers and add vertically using base 10 or practical resources without crossing boundaries?

Rung 8

Can I add 10 or 100 to any number and add in multiples of 10 ?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I partition a number to add using number bonds to 10 , e.g. $8+7$ is $8+2+5$ ?

Rung 6
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add in tens and ones using an unstructured number line?

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I show that I know my number facts to 20 ?

Rung 4

Can I add in tens and ones using a structured number line?


Can I add in ones using a structured number line?

Rung 2
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add in ones using practical resources?

Rung 1 COMPLETE $\quad$ COMPLETE COMPLETE

Can I add a mix of whole numbers and decimals with different numbers of decimal places using column addition?


Can I add large numbers in different contexts using formal column addition?

| Rung 17 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I add money with decimal places using formal column addition?

Rung 16

Can I add 3 and 4 digit numbers using formal column addition?

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I use inverse operations to check calculations?

Rung 14
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add money with decimal places using expanded column additions?


Can I add using both $£$ and $p$ in practical contexts?

Rung 12 12 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add 2 digit numbers and 3 digit numbers using column addition?

## SUBTRACTION

Can I subtract 2 and 3 digit numbers using column subtraction with decomposing?

| Rung 10 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I estimate the answer to a subtraction calculation or use the inverse to check it is correct?


Can I partition a number and subtract using column subtraction without decomposing?
( 2 and 3 digit numbers).
Rung 8
COMPLETE COMPLETE COMPLETE

Can I use related facts to subtract multiples of 10 and 100 ? (e.g. $6-4=2,60-40=20$ ).

Can I subtract more efficiently using a number line, using jumps of multiples of 10 with numbers up to 3 digits?

Rung 6

Can I show that I know all the subtraction facts to $20 ?$


Can I subtract in tens and ones using a unstructured number line?

Rung 4

Can I subtract in tens and ones using a structured number line?


Can I subtract in ones using a structured number line?

Rung $2 \times 1$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I subtract in ones using practical resources?

Rung 1 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

## SUBTRACTION



Can I subtract a mix of whole numbers and decimals, with different numbers of decimal places, using column subtraction?

Rung 18

Can I use rounding to check answers to calculations?

Can I subtract large numbers using formal column subtraction?

Rung 16

Can I subtract 3 and 4 digit numbers using formal column subtraction?

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I use the inverse to check calculations?

| Rung 14 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I subtract 3 digit numbers by partitioning and decomposing using column subtraction?

Rung 13 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I subtract money including decimals using a number line? (e.g. finding the change from £5.00).

| Rung 12 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I subtract money using both £ and p to give change in practical contexts?

Can I use a formal vertical method to multiply TU and HTU by U?

| Rung 10 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I use an expanded vertical method to multiply money with 2 decimal places by $U$ ( a one digit number)?


Can I use related facts to multiply multiples of 10 and 100 , e.g. $2 \times 3=6,2 \times 30=60,2 \times 300=600$ ?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I partition a number into 10 's and ones to multiply? (distributive law).

Rung 6

Can I use related facts to multiply multiples of 10 ? (e.g. $2 \times 3=62 \times 30=60$ ).

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I explore the effect of partitioning a number to multiply (distributive law)? (e.g. exploring $7 \times 8$ by splitting 7 into 2 and 5 then calculating $2 \times 8$ then $5 \times 8$ ).

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I show that multiplication can be done in any order? (commutative).


Can I multiply using concrete objects, pictorial representations, arrays and repeated addition?

| Rung 2 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I multiply using concrete objects, pictorial representations and arrays with the support of the teacher?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I use long multiplication to multiply THTU or HTU x TU?

| Rung 19 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I use related facts to multiply multiples of 10 and 100 ? (e.g. $2 \times 3=6200 \times 30=6000$ ).

Rung 18
| COMPLETE COMPLETE COMPLETE

Can I multiply numbers with up to 2 decimal places by a whole number?

| Rung 17 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I multiply TU x TU using long multiplication?

Rung 16

Can I multiply TU x TU using an expanded written strategy?

Rung 15
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I multiply TU x TU using diagrams, arrays and grids?

Rung 14
| COMPLETE COMPLETE COMPLETE

Can I use related facts to multiply multiples of 10 and 100 ? (e.g. $2 \times 3=620 \times 30=600$ ).


Can I use a formal vertical method to multiply HTU, THHTU and whole numbers with up to 2 decimal places by U? (e.g. money).

| Rung 12 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I multiply 3 numbers, combining them in different ways and using my knowledge of number facts to makes this easier? (e.g. $2 \times 6 \times 5=10 \times 6$ ).

## DIVISION

Can I begin to represent a remainder as a fraction or decimal?

Rung 10

Can I solve more complex problems involving division, including with remainders, and round the answer appropiately in context?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :---: | :---: | :---: | :---: | :---: |

Can I divide 4 digit and 3 digit numbers by one digit using short division?

Rung 8

Can I divide 3 digit numbers using increasingly efficient written methods and using related multiplication facts?

Can I divide 2 digit numbers by increasingly efficient written methods and use related multiplication facts?

Rung 6

Can I understand the effect of dividing by 1 ?

Rung 5
COMPLETE COMPLETE COMPLETE

Can I divide 2 digit numbers by another number using the tables I know?

Rung 4
COMPLETE COMPLETE COMPLETE

Can I show that division of one number by another cannot be done in any order?

Can I divide using concrete objects, pictorial representations, arrays and repeated subtraction?

| Rung 2 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I divide using concrete objects, pictorial representations and arrays with the support of the teacher?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

## DIVISION



Can I divide numbers up to 4 digits by a 2 digit whole number using long division?

| Rung 13 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I express a quotient as a fraction, decimal or rounded according to context?

Can I divide numbers up to 4 digits by a 2 digit whole number using expanded long division?

Rung 11

## FRACTIONS

Can I compare and order unit fractions with the support of fraction boards and number lines?

| Rung 10 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I add and subtract fractions with the same denominator and recognise a whole as a fraction? (e.g. $2 / 5+1 / 5=3 / 5$ ).

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I compare and order fractions with the same denominator?

Rung 8

Can I work out fractions of amounts for common fractions? (e.g. 1/2, 1/4, 3/4, 1/5 of a set of objects).

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise fractions of shapes?
(unit and non-unit).

Rung 6

Can I count in halves and quarters up to 10 recognising that fractions are numbers between whole numbers?

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise that $2 / 4$ is equivalent to $1 / 2$ ?

Rung 4

Can I recognise, find, name and write fractions $1 / 3$,
$1 / 4,2 / 4$ and $2 / 4$ of a length, shape, set of objects or quantity?

Rung 3 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise, find and name a quarter of an object, shape or quantity?

Rung $2 \times 1$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise, find and name a half of an object, shape or quantity?

Rung 1

|  | COMPLETE | COMPLETE |
| :--- | :--- | :--- |

## FRACTIONS

Can I multiply proper fractions and mixed numbers by a whole number using diagrams and concrete apparatus?

Rung 20


Can I add and subtract fractions with denominators in the same fraction family?

| Rung 19 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I compare and order fractions where denominators are in the same fraction family?

Rung 18
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add and subtract fractions with the same denominators including recognising and converting improper fractions to mixed numbers?

Can I recognise and convert improper fractions to mixed numbers?

Rung 16

## COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise and work out non-unit fractions of shapes, lengths and sets of objects? (e.g. 3/4 of a metre, or $2 / 5$ of a bar of chocolate made of 20 pieces).

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise and work out unit fractions of shapes, lengths and sets of objects? (e.g. $1 / 8$ of a bar of chocolate made of 40 pieces).

| Rung 14 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise and show equivalent fractions in a family of fractions?

Rung 13
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add and subtract fractions where the denominator is the same beyond a whole?

[^0]Can I recognise and show simple equivalent fractions using diagrams?


Can I multiply more complex pairs of proper fractions? (e.g. $3 / 5 \times 4 / 7$ ).

| Rung 28 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise and explore the relationship between multiplying by a whole number and dividing by its reciprocal?

| Rung 27 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I divide proper fractions by a whole number? (e.g. $1 / 3$ divided by $2=1 / 6$ ).

Rung 26

Can I multiply simple pairs of proper fractions and write the answer in its simplest form?

$$
\text { (e.g. } 1 / 4 \times 1 / 2=1 / 8 \text { ). }
$$

| Rung 25 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I add and subtract fractions and mixed numbers with different denominators using the idea of equivalence?

Rung 24
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I compare and order any set of fractions, proper or improper, or mixed numbers including those with different denominators?

| Rung 23 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I use common multiples to express fractions in the same denomination?

Rung 22 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I simplify fractions using common factors?

Rung 21
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

## DECIMALS

Can I compare and order whole numbers and decimals with up to 2 decimal places?

Rung 10


Can I compare and order decimals with the same number of decimal places up to 2 decimal places?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I find the effect of dividing one and two digit numbers by 10 and 100 and identify the value of the digits in the answer as units, tenths and hundredths?

## Rung 8

Can I recognise and write the decimal equivalent of tenths, hundredths and common fractions (1/4 1/2 3/4) in a variety of contexts? (e.g. money and measures).

## Rung 7

Can I write the decimal equivalent of tenths and hundredths and recognise them in the context of money?

Rung 6

Can I recognise a hundredth as a whole divided into 100 equal parts and as 10 parts of a tenth?

Rung 5


Can I round a decimal with one decimal place to a whole number?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I count in tenths and decimal tenths recognising them as numbers between whole numbers?

## Rung 3 COMPLETE $\mid$ COMPLETE COMPLETE

Can I recognise and write the decimal equivalent of a tenth using a place value board? (e.g. 1/10 = 0.1).

Rung 2
| COMPLETE COMPLETE COMPLETE

Can I count in tenths and understand a tenth as part of a whole divided into 10 equal parts?


Can I round an answer appropriately when using a calculator to solve problems in context?

Rung 19 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise what degree of accuracy is appropriate when rounding decimals?

Rung 18
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I round answers with a specific degree of accuracy? (where this has been specified).

Rung 17
COMPLETE COMPLETE COMPLETE

Can I calculate more complex decimal equivalents such as $3 / 8=0.375$ using my understanding of the equivalence between fractions and decimals?

Rung 16
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I associate a fraction with division and calculate decimal equivalents of common fractions such as halves, quarters and fifths?

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places?

Can I read, write, order and compare numbers that have a mixture of 1,2 or 3 decimal places?

Rung 13 13 COMPLETE $\mid$ COMPLETE $\mid$ COMPLETE

Can I recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents?


Can I round decimals with 2 decimal places to the nearest whole number and to one decimal place?

Rung 11
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve more complex problems using a unitary method? (e.g. scaling down to 1 and then up again).

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I link \% to calculating simple angles in a pie chart? (e.g. recognise that $50 \%$ is 180 degrees).

Rung 8
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve more complex \% problems in context such as \% deduction?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I divide a quantity in a given ratio? (recognising the proportion as a fraction of the whole).

Rung 6

Can I identify that a problem can be written as a ratio and solve problems using this relationship?

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I solve problems involving similar shapes where the scale factor is known or can be found?

## Rung 4

COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve \% problems in a variety of contexts such as comparing \%? (e.g. best buys).

| Rung 3 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I recall and use equivalence between fractions, decimals and \% to solve problems? (e.g. 10\% of £5.00 or $50 \%$ of the team).

\section*{| Rung 2 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |}

Can I recognise and understand \% as part of 100 and write a \% as a fraction and a decimal?

Can I solve missing number problems for addition, subtraction, multiplication and division with numbers up to 100 using my knowledge of number facts and the relationship between operations?

| Rung 10 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I solve money problems involving addition and finding the change? (both £ and pence).


Can I solve simple money problems involving addition and finding the change? ( $£$ or pence).

| Rung 8 | COMPLETE | complete | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I use place value and number facts to solve problems?

Rung 7
COMPLETE COMPLETE COMPLETE

Can I solve multiplication and division problems using pictures and diagrams?

Rung 6
COMPLETE

Can I solve simple word problems involving addition and subtraction with numbers up to 50 ?


Can I solve missing number problems for addition and subtraction with numbers up to 20 ?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve practical measuring problems? (e.g. length, weight, capacity and time).


Can I solve multiplication and division 1 step word problems using concrete apparatus? ( 2,5 and $10 \times$ tables only).

Rung 2
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve addition and subtraction 1 step word problems using concrete apparatus?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I solve more complex scaling problems? (e.g. 8 times as high).

Rung 20

Can I solve 2 step word problems involving all 4 operations, deciding which operations to use and when?

| Rung 19 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I solve 2 step word problems involving addition and subtraction, deciding which operations to use and when?

Rung 18

Can I estimate answers and use inverse operations to check answers to a calculation in the context of a problem?

| Rung 17 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I solve missing number problems with increasingly large numbers using my knowledge of place value and relationships between operations?

Rung 16

Can I solve simple scaling problems?
(e.g. twice as long).

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I estimate an answer to an addition or subtraction problem and use the inverse to check an answer?

Rung 14
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve simple correspondence problems? (e.g. 'share 4 cakes equally between 8 children' or ' 4 hats, 3 coats, how many different outfits?').


Can I solve 1 step word problems involving multiplication and division?

| Rung 12 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I solve 1 step word problems involving addition and subtraction (including numbers beyond 100)?

Can I consistently check that my answers are reasonable in all calculations?

Rung 30 $\quad$ complete $\mid$ COMPLETE $\mid$ COMPLETE

Can I solve addition and subtraction multi-step problems in context, with increasingly large numbers, deciding with operations to use and why?

Rung 29
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I investigate a problem involving place value and properties of number, and present my investigation in a clear and organised way?

| Rung 28 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I use all 4 operations to solve equivalence statements? (e.g. $5 \times ?=18+12$ ).

| Rung 27 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I solve multi step problems involving a combination of any of the 4 operations?

Rung 26
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve problems involving multiplication and division including scaling by simple fractions?

Rung 25

Can I solve division problems, interpreting remainders in a context and adjusting the answer appropriately?

Rung 24
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve addition and subtraction multi-step problems in context, deciding which operations to use and why?

Rung 23 $\quad$ COMPLETE $\mid$ COMPLETE $\mid$ COMPLETE $\mid$

Can I use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy?

## Rung 22 <br> COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve more complex correspondence problems, choosing how to tackle and present the problem clearly? (e.g. 'Share 3 cakes equally between 10 children' or '3 starters, 3 mains, 3 desserts how many meal options?').


Can I solve real life and financial problems? (e.g. comparing holiday packages or working out household bills).

\section*{| Rung 36 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |}

Can I solve a variety of number problems using formulae and algebraic equations?

| Rung 35 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I find pairs of numbers that satisfy an equation with two unknowns?

## Rung 34 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I express missing number problems algebraically?
Rung 33 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve multi-step word problems and investigations involving all 4 operations from a large range of contexts?

| Rung 32 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I round and estimate as a means of predicting and checking the order of magnitude of my answers to a decimal calculation?

Can I identify common factors, common multiples and prime numbers, with increasingly large numbers?

Rung 10 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise squared and cubed numbers and use the correct notation?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I recognise and describe linear number sequences including those involving fractions and decimals and find the term to term rule? (e.g. add half).

| Rung 8 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I work out if a number up to 100 is a prime number and have quick recall of all the prime numbers to 19 ?

Rung 7
COMPLETE COMPLETE COMPLETE

Can I know and use the vocabulary of prime numbers, prime factor and composite (non-prime) numbers?

Rung 6

Can I identify multiples and factors including finding all factor pairs of a number and common factors of two numbers?

Rung 5


Can I use the = sign to write equality statements for addition, subtraction and multiplication?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise patterns across all of the multiplication tables?


Can I recognise factor pairs of a number and multiples of a single digit number?

Rung 2
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I recognise patterns in some multiplication tables? (2, 5, 10, 4 and 8 ).

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |



Can I identify the region for solutions of square roots (not square numbers) and use this as a starting point for trial and improvement?

Rung 15 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I identify square roots and cube roots which give integer solutions? (whole number answers).

Rung 14

Can I make generalisations about number patterns and express them algebraically?


Can I generate and describe linear number sequences?

[^1]Can I explore the order of operations using brackets?

## MEASURES

Can I compare and order measures and record using < > and =?

Rung 10 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I find different combinations of coins that equal the same amounts?

Rung 9 COMPLETE $\mid$ COMPLETE $\mid$ Complete

Can I combine amounts to make a particular value? e.g. make $3 p$ using a $2 p$ and 1 p.


Can I recognise and use symbols for $£$ and $p$ ?

Can I choose appropriate units of measure to estimate length, height, mass and capacity?

Rung 6
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I measure using appropriate equipment? (e.g. ruler, weighing scales, measuring jug).

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I recognise and know the value of different coins and notes?

Rung 4

Can I compare, describe, measure and record weight and mass?

Rung 3 COMPLETE $\mid$ cOMPLETE complete

Can I compare, describe, measure and record capacity and volume?

Rung 2
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I compare, describe, measure and record length and height?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

## MEASURES

Can I convert between different units of measure using my understanding of multiplying and dividing by 10,100 and $1000 ?$

Rung 20


Can I estimate, compare and calculate measures in a variety of contexts?

| Rung 19 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I convert between units of measure using multiplication and division and, where appropriate, record with decimal notation?

Rung 18

Can I convert between units of measure with the support of measuring instruments and, where appropriate, record with decimal notation?

| Rung 17 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I use both $£$ and $p$ in context and recognise equivalence? (e.g. $306 p=£ 3.06$ ).

Rung 16

Can I read measures in mixed units and convert simple whole units of measure? (e.g. $5 \mathrm{~m}=500 \mathrm{~cm}$ ).

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I solve problems involving measures, including simple problems for scale? (e.g. twice as high).

Rung 14
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I add and subtract amounts of money to give change, using both $£$ and $p$ in practical contexts?


Can I compare, add and subtract measures?

| Rung 12 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I read measuring instruments with increasing accuracy?

## MEASURES

Can I understand compound units for speed and use them in context? (e.g. science experiments).


Can I convert between miles and km?

| Rung 28 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise when it is possible to use formulae to calculate volume?


Can I calculate, estimate and compare volume of cubes and cuboids using standard units? (e.g. $\mathrm{cm}^{3}$ ).

Rung 26

|  | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I solve problems involving the calculation and conversion of units of measure using decimal notation up to three decimal places?

| Rung 25 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I use, read, write and convert between standard units of measure using decimal notation up to 3 decimal places?

Rung 24
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I understand and use approximate equivalences between metric units and common imperial units? (inches, pounds, pints).

| Rung 23 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I estimate volume and capacity and explore these concepts using practical materials?

| Rung 22 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I use all 4 operations to solve problems involving length, mass, capacity and scaling?

Rung 21
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

## TIME

Can I understand and use vocabulary such as o'clock, am, pm, noon and midnight?

\section*{| Rung 10 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |}

Can I use the vocabulary of time and know the number of seconds in a minute, days in each month, year and leap year?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I tell and write the time to 5 minutes and draw the hands on a clock face to show these times?

Rung 8

Can I read and write the time on an analogue clock for quarter past and quarter to?

Can I compare and sequence different times?

Rung 6

Can I show that I know how many hours there are in a day and how many minutes there are in an hour?

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I read and write the time on an analogue clock for o'clock and half past?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I compare, describe, measure and record time (hours, minutes, seconds) and use the language quicker, slower, earlier, later?

| g 3 |  |  |  |
| :---: | :---: | :---: | :---: |

Can I recognise and use language relating to dates including days of the week, months and the term 'year'?

| Rung 2 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I sequence events in chronological order using before, after, today, tomorrow etc?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I solve problems involving time, including reading simple timetables?

Rung 20
COMPLETE COMPLETE COMPLETE

Can I solve problems which involve converting between units of time? (e.g. expressing the answer as days and weeks).
 years to months or weeks to days?

Rung 18

Can I solve problems involving calculating lengths of time?

Rung 17
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I read, write and convert time between analogue and digital 12 and 24 hour clocks?

Rung 16
COMPLETE COMPLETE COMPLETE

Can I read the time on a 24 hour digital clock?

Rung 15 COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I read the time on a digital clock (12 hour) and compare to an analogue clock?

Rung 14
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I calculate and compare time durations?
Rung 13 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I read and write the time to the nearest minute on an analogue clock?

| Rung 12 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I record time in seconds, minutes and hours and compare the lengths of time? (e.g. which is longer).

Can I investigate relationships between area and perimeter? (e.g. shapes with the same area can have different perimeters and vice versa).

Rung 10


Can I find unknown lengths on rectilinear shapes using my understanding of perimeter and area?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I calculate and compare the area of rectangles using cm2; and m 2 ; including from scale drawings?

## Rung 8

COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I estimate the area of irregular shapes?

Can I measure and calculate the area of shapes that need to be divided into rectangles (composite rectilinear shapes) in $\mathrm{cm}^{2}$; and $\mathrm{m}^{2}$ ?

Rung 6
| COMPLETE COMPLETE COMPLETE

Can I measure and calculate the perimeter of shapes that need to be divided into rectangles (composite rectilinear shapes) in cm and m ?

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I calculate the area of rectangles using multiplication?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I find the area of rectangles by counting squares?


Can I calculate the perimeter of rectangles including squares?

Rung 2
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I measure the perimeter of simple 2D shapes?

## PERIMETER AND AREA



Can I calculate area and perimeter of compound shapes including parallelograms and triangles?


Can I recognise when it is possible to use formulae to calculate area?

Rung 12
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I calculate the area of parallelograms and triangles?

Rung 11

## STATISTICS

Can I interpret data presented in a range of graphical representations with a greater range of scales?

Rung 10 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve 2 step problems using the information presented in charts and graphs? (e.g. How many more/fewer?).


Can I solve one step problems using the information presented in charts and graphs?

Rung 8
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I present data in charts and graphs, including using a scale of 2,5 and 10 ?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I interpret data in charts and graphs, including reading a scale of 2,5 and 10 ?

Rung 6
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I answer questions by comparing information in simple bar charts? (e.g. Which has the most? How much altogether?).

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I interpret and construct simple pictograms and block diagrams?

Rung 4

Can I interpret and construct simple tally charts and tables?

| Rung 3 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I answer simple questions about quantities from looking at pictograms and block charts (scale of 1 or 2)?

| Rung 2 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I answer simple questions about quantities from looking at tally charts and simple tables?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

## STATISTICS

Can I solve problems using the data from line graphs (including conversion graphs) and pie charts including ones I have constructed myself?


Can I decide which representations of data are most appropriate and explain why?

Can I complete, read and interpret information presented in tables and other graphical representations?

Rung 16
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I solve comparison, sum and difference problems using information presented in line graphs?

Rung 15 COMPLETE 15 Complete $\mid$ COMPLETE

Can I solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs?

Rung 14
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I present continuous data in the form of time (line) graphs recognising that it is recording a change over time?

| Rung 13 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I interpret continuous data in the form of time (line) graphs, recognising that it is recording a change over time?

| Rung 12 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I present discrete data using appropriate graphical methods?

Rung 11
COMPLETE COMPLETE COMPLETE

## STATISTICS



Can I calculate the probability of an independent event?

Rung 24

Can I interpret continuous data in the form of time (line) graphs recognising that it is recording a change over time?

Rung 23 $\quad$ complete $\mid$ Complete $\mid$ COMPLete

Can I read and interpret linear proportional graphs?
(e.g. speed).

Can I calculate the mean as an average and understand when it is appropriate to find the mean of a set of data?

## SHAPE

Can I draw 2D shapes and describe them using my knowledge of sides and angles?

\section*{| Rung 10 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |}

Can I recognise right angles in 2D shapes and say if an angle is greater or less than a right angle?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I identify right angles and describe how right angles can make up $1 / 4,1 / 2,3 / 4$ and a whole turn?

Rung 8

Can I identify horizontal and vertical lines and pairs of perpendicular and parallel lines?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I compare and sort common 2D and 3D shapes and everyday objects?

Rung 6
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I identify 2D shapes on the surface of 3D shapes? (e.g. a circle on a cylinder).

| Rung 5 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I identify, describe and sort 3D shapes by talking about the number of faces, edges and vertices?

Rung 4
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I identify, describe and sort 2D shapes by naming them, talking about the number of sides and showing a vertical line of symmetry?


Can I recognise and name common 3D shapes? (cuboid, cube, pyramid, sphere).

| Rung 2 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise and name common 2D shapes? (rectangle, circle, square, triangle).

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

## SHAPE

Can I identify regular and irregular shapes using my knowledge of length of sides and angles?

Rung 20

Can I draw and measure given angles in degrees?

| Rung 19 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I identify and compare acute, obtuse and reflex angles?

Rung 18

Can I identify lines of symmetry in 2D shapes presented in different orientations?

| Rung 17 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I complete symmetrical shapes and patterns using a specific line of symmetry?

Rung 16
| COMPLETE

Can I name, describe and sort a variety of quadrilaterals and triangles based on their properties?

Rung 15

Can I identify and name acute and obtuse angles?

Rung 14
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I compare and order angles?


Can I recognise a 3D shape in different orientations?

## Rung 12

COMPLETE COMPLETE COMPLETE

Can I make 3D shapes using modelling materials, and name and describe their properties?

## SHAPE

Can I solve problems using my knowledge of circle properties?

| Rung 30 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I recognise vertically opposite angles and use this to calculate missing angles?

| Rung 29 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I illustrate and name parts of a circle including radius, diameter and circumference and know that diameter is twice the radius?

Rung 28
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE
Can I compare and classify geometric shapes based on their size and properties and can find unknown angles in any triangle, quadrilateral or regular polygon?

| Rung 27 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I recognise, describe and build simple 3D shapes, including making nets?

Rung 26
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I accurately draw 2D shapes using given angles and dimensions?

| Rung 25 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I find missing lengths and angles in rectangles using my knowledge of related facts?

Rung 24


Can I find missing lengths and angles in rectangles using my knowledge of related facts?


Can I calculate missing angles on a straight line $\left(180^{\circ}\right)$ or at a point $\left(360^{\circ}\right)$ or within a right angle $\left(90^{\circ}\right)$ ?

| Rung 22 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I identify 3D shapes from 2D representations?

Rung 21
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I identify, describe and draw the position of a shape on a grid after a translation?

Rung 10

|  | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I identify, describe and draw the position of a shape on a grid after a reflection on a line parallel to the axis?

| Rung 9 | COMPLETE | COMPLETE | COMPLETE |  |
| :--- | :--- | :--- | :--- | :--- |

Can I translate shapes on a grid and describe the movement using left/right, up/down?

Rung 8

Can I complete polygons by giving a missing co-ordinate on a grid?

Rung 7
| COMPLETE COMPLETE COMPLETE

Can I use co-ordinates to plot a shape on a grid?
(1st quarter).

Rung 6

Can I describe positions on a 2D grid?

Rung 5


Can I distinguish between rotation as a turn and in terms of right angles for quarter, half and three quarter turns?

Rung 4
COMPLETE COMPLETE COMPLETE

Can I use mathematical vocabulary to describe position, direction and movement including movement in a straight line?


Can I order and arrange groups of mathematical objects in patterns and sequences?

Rung 2
| COMPLETE COMPLETE COMPLETE

Can I describe position, direction and movement including whole, $1 / 2,1 / 4$ and $3 / 4$ ?

## POSITION AND DIRECTION



Can I express missing co-ordinates algebraically?

| Rung 15 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I predict missing co-ordinates using the properties of shapes?

## Rung 14

Can I reflect simple shapes in the axes?

## 

Can I draw and translate simple shapes on a 4
quadrant grid?

Rung 12
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I label the axes of a grid in all 4 quadrants and describe a position on the grid?

Can I read and write numbers up to 1000 in numerals and words?

\section*{| Rung 10 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |}

Can I understand the value of each digit in a 3 digit number?

Rung 9 $\quad$ COMPLETE $\mid$ COMPLETE $\mid$ complete

Can I count in tens from any number including crossing boundaries into hundreds?

Rung 8
COMPLETE COMPLETE COMPLETE

Can I compare and order numbers from 0 up to 100 using > < and = signs?

| Rung 7 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I understand the value of each digit in a 2 digit number?

Rung 6

Can I continue simple number sequences and shape patterns?

Rung 5 $\quad$ COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I identify odd and even numbers up to 20 ?

Rung 4

Can I identify one more/one less from a given number?


Can I read and write numbers from 1 to 100 in numerals?

Rung 2
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I read and write numbers from 1 to 20 in numerals and words?

| Rung 1 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I round any number up to $1,000,000$ to the nearest 10, 100, 1000, 10,000 and 100,000?

Rung 20


Can I read, write, order and compare numbers to 1000000 ( 1 million) and determine the value of each digit?

| Rung 19 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- | :--- |

Can I count backwards through zero to include negative numbers?

Rung 18

Can I round any whole number to the nearest 10, 100 or 1000?

Rung 17
COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I say 1000 more or less than any given number?

Rung 16

Can I compare and order numbers beyond $1000 ?$

Rung 15
COMPLETE COMPLETE COMPLETE

Can I represent numbers in different ways? (e.g. words, numerals, base 10, etc).

Rung 14

## COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I understand the value of each digit in a 4 digit number?

| Rung 13 | COMPLETE | COMPLETE | COMPLETE |
| :--- | :--- | :--- | :--- |

Can I count in tens and hundreds and can I add or subtract 10 or 100 from any given number up to $1000 ?$

[^2]Can I compare and order numbers up to $1000 ?$


Can I use negative numbers in context and calculate intervals across zero?

Rung 25 $\quad$ complete 1 COMPLETE $\mid$ COMPLETE

Can I round any whole number to a required degree of accuracy?

Can I read, write, order and compare numbers up to $10,000,000$ and determine the value of each digit?


Can I interpret negative numbers in context?

Rung 22
| COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

Can I count forwards and backwards in steps of powers of 10 for any given number up to $1,000,000$ ?
| |

## LEARNING LADDERS

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[^0]:    Rung 12
    COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

[^1]:    Rung 12
    | COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

[^2]:    Rung 12
    COMPLETE $\quad$ COMPLETE $\quad$ COMPLETE

