Big Maths

The Definitive Assessment Framework for Primary Mathematics

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Curriculum Mapping

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Big Maths Curriculum Mapping

One of the many things that Big Maths offers is an essential detailed description of a child's mathematical learning journey.

Schools that:

- use the CLIC Framework and follow the CLIC on your Planning journey for Core Numeracy; and
- use the SAFE Maths Framework and follow the SAFE Planning journey for Outer Numeracy,

will provide each and every child with a high-expectation, minimum learning journey that the child will experience over the primary years as if they were being taught and tracked by one teacher.

For more information on how to use the step by step Progress Drives as an essential assessment, planning and teaching tool, see the publication *Big Maths: The Definitive Assessment Framework for Primary Mathematics*.

Big Maths Beat That! allows the school leader, teacher and child to then assess and track each child's individual mathematics journey against government age-related expectations. *Big Maths: The CLIC Book* and *Big Maths: Outer Numeracy - SAFE Maths* provide the teacher with detailed step by step teaching and planning points.

This document shows how every element of the national curriculum for primary mathematics is covered by Big Maths.

This means teachers do not need to keep referring to their national curriculum document as they can just see this document once and be assured that following the Big Maths Journey is covering the curriculum.

In fact the steps of progression in the Big Maths Journey cover a lot more than the national curriculum. The Big Maths steps start earlier and finish later. The Big Maths Journey starts right from the beginning of the child's life, which can be seen in the very first steps of the journey, and it finishes on the top steps of the Progress Drives, which is actually secondary school mathematics (thus allowing the most able primary children to be stretched in their ability).

Further to this, the Big Maths Journey adds in the extra detail that the national curriculum can't go into. However, this detail is crucial as it provides the essential subject knowledge and the system needed in order to give us the precision of tracking for truly teaching the child's next step. If we just use the broader, vaguer and more 'gappy' statements of the curriculum then true formative assessment quickly breaks down. This vagueness may be useful for some areas of the curriculum but it does not suit the nature of mathematical progression.

This mapping document uses the national curriculum documentation as a starting point and then shows where that statement maps to the Big Maths Progress Drives.

Year 1

Number - number and place value

Curriculum Statement	Big Maths Location
count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	**CLIC: Counting: Saying Numbers:** Step 5
count, read and write numbers to 100 in numerals, count in different multiples including ones, twos, fives and tens	**CLIC: Counting: Reading Numbers:** Step 4 **CLIC: Counting: Count Fourways:** Steps 1 - 3 **CLIC: Counting Multiples:** Steps 1 - 3
given a number, identify one more and one less	**CLIC: Counting: Counting On:** Step 1
identify and represent numbers using concrete objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	**CLIC: Counting: Actual Counting:** Step 4 **CLIC: Counting: Count Fourways** **LBM: Amounts: Amounts Compared** **CLIC: Counting: CORE Numbers:** Step 2
read and write numbers from 1 to 20 in digits and words	**CLIC: Counting: Reading Numbers:** Step 2

Number - addition and subtraction

Curriculum Statement	Big Maths Location
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	**CLIC: Calculation: Addition:** Steps 6, 7 **CLIC: Calculation: Subtraction:** Steps 6, 7
represent and use number bonds and related subtraction facts within 20	**CLIC: Learn Its:** Steps 1 - 6 **CLIC: It's Nothing New: Fact Families:** Step 1
add and subtract one-digit and two-digit numbers to 20, including zero	**CLIC: Calculation: Addition:** Steps 8 - 12 **CLIC: Calculation: Subtraction:** Steps 8 - 12
solve simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [ ] - 9	**CLIC: Calculation: Addition:** Steps 7, 8 **CLIC: Calculation: Subtraction:** Steps 7, 8 **CLIC: It's Nothing New: Fact Families:** Step 1

Number - multiplication and division

Curriculum Statement	Big Maths Location
solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	**CLIC: Calculation: Multiplication:** Steps 1 - 6 **CLIC: Calculation: Division:** Steps 1 - 11

Number - fractions

Curriculum Statement	Big Maths Location
recognise, find and name a half as one of two equal parts of an object, shape or quantity	**SAFE: Fractions: Fractions of a Whole:** Step 2 **SAFE: Fractions: Fractions of a Set:** Steps 2, 3
recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	**SAFE: Fractions: Fractions of a Whole**: Step 4 **SAFE: Fractions: Fractions of a Set**: Step 5

Measurement

Curriculum Statement	Big Maths Location
compare, describe and solve practical problems for: • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/ empty, more than, less than, half, half full, quarter] • time [for example, quicker, slower, earlier, later]	• **SAFE: Amounts: Amounts of Distance:** Steps 5, 6 • **SAFE: Amounts: Amounts of Mass:** Steps 5, 6 • **SAFE: Amounts: Amounts of Space:** Steps 5, 6 • **SAFE: Amounts: Amounts of Time:** Step 11
measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume • time (hours, minutes, seconds)	• **SAFE: Amounts: Amounts of Distance:** Steps 5, 6 • **SAFE: Amounts: Amounts of Mass:** Steps 5, 6 • **SAFE: Amounts: Amounts of Space:** Steps 5, 6 • **SAFE: Amounts: Amounts of Time:** Step 11

Curriculum Statement	Big Maths Location
recognise and know the value of different denominations of coins and notes	**SAFE: Amounts: Amounts of Money:** Step 5
sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	**SAFE: Amounts: Amounts of Time:** Step 10
recognise and use language relating to dates, including days of the week, weeks, months and years	**SAFE: Amounts: Amounts of Time:** Step 12
tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	**SAFE: Amounts of Time: Telling the Time:** Step 4

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
recognise and name common 2-D and 3-D shapes, including: • 2-D shapes [for example, rectangles (including squares), circles and triangles] • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	• **SAFE: Shape: 2D Shape:** Step 13 • **SAFE: Shape: 3D Shape:** Step 10

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
describe position, direction and movement, including whole, half, quarter and three-quarter turns	**SAFE: Shape: Position & Direction:** Step 9 **SAFE: Amounts: Amounts of Turn:** Step 3

Year 2

Number - number and place value

Curriculum Statement	Big Maths Location
count in steps of 2, 3, and 5 from 0, and count in tens from any number, forward or backward	**CLIC: Counting: Count Fourways** **CLIC: Counting: Counting Multiples:** Step 4
recognise the place value of each digit in a two-digit number (tens, ones)	**CLIC: Counting: Squiggleworth:** Step 1
identify, represent and estimate numbers using different representations, including the number line	**CLIC: Counting: CORE Numbers:** Step 3
compare and order numbers from 0 up to 100; use <, > and = signs	**CLIC: Counting: CORE Numbers:** Step 3
read and write numbers to at least 100 in numerals and in words	**CLIC: Counting: Reading Numbers:** Step 4
use place value and number facts to solve problems	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction**

Number - addition and subtraction

Curriculum Statement	Big Maths Location
solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying their increasing knowledge of mental and written methods	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction**
recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	**CLIC: Learn Its:** Steps 7 - 9 **CLIC: It's Nothing New: Fact Families:** Step 2 **CLIC: It's Nothing New: Pim's Addition:** Step 1
add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and ones • a two-digit number and tens • two two-digit numbers • adding three one-digit numbers	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: Calculation: Addition:** Step 20 **CLIC: Calculation: Subtraction:** Step 18 **CLIC: Calculation: Addition:** Step 23 **CLIC: Calculation: Subtraction:** Step 25 **CLIC: Calculation: Addition:** Step 24 **CLIC: Calculation: Subtraction:** Step 27 **CLIC: Calculation: Addition:** Step 19

Curriculum Statement	Big Maths Location
show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	**CLIC: It's Nothing New: Fact Families:** Step 2
recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems	**CLIC: It's Nothing New: Fact Families:** Step 3

Number - multiplication and division

Curriculum Statement	Big Maths Location
• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, • including recognising odd and even numbers	• **CLIC: Learn Its:** Steps 7 - 9 **CLIC: Calculation: Division:** Steps 16, 17 • **CLIC: Counting: Count Fourways**
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	**CLIC: Calculation: Multiplication:** Steps 7 - 9 **CLIC: Calculation: Division:** Step 13
recognise and use the inverse relationship between multiplication and division in calculations	**CLIC: It's Nothing New: Fact Families:** Step 4
show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	**CLIC: It's Nothing New: Fact Families:** Step 4
solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	**CLIC: Calculation: Division:** Steps 12 - 15 **CLIC: Calculation: Multiplication:** Steps 7 - 9

Number - fractions

Curriculum Statement	Big Maths Location
recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity	**SAFE: Fractions: Fractions of a Whole:** Steps 6, 8 **SAFE: Fractions: Fractions of a Set:** Step 6
write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2	**SAFE: Fractions: Fractions of a Set:** Step 6 **SAFE: Fractions: Fractions: Learn Its:** Step 3

Measurement

Curriculum Statement	Big Maths Location
choose and use appropriate standard units to estimate and measure: • length/height in any direction (m/cm); • mass (kg/g); • temperature (°C); • capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	**SAFE: Amounts: Amounts of Distance:** Step 10 **SAFE: Amounts: Amounts of Mass:** Step 10 **SAFE: Amounts: Amounts of Temperature:** Step 7 **SAFE: Amounts of Space:** Step 10
compare and order: • lengths, • mass, • volume/capacity and record the results using >, < and =	**SAFE: Amounts: Amounts of Distance:** Step 7 **SAFE: Amounts: Amounts of Mass:** Step 7 **SAFE: Amounts: Amounts of Space:** Step 7
recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	**SAFE: Amounts: Amounts of Money:** Step 10
find different combinations of coins that equal the same amounts of money	**SAFE: Amounts: Amounts of Money:** Step 8
solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	**SAFE: Amounts: Amounts of Money**: Step 12
compare and sequence intervals of time	**SAFE: Amounts: Amounts of Time:** Step 19
tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times	**SAFE: Amounts: Amounts of Time: Telling the Time:** Step 8
know the number of minutes in an hour and the number of hours in a day	**SAFE: Amounts: Amounts of Time:** Steps 14, 15

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	**SAFE: Shape: 2D Shape:** Step 17 **SAFE: Shape: Explore & Draw:** Step 10
identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	**SAFE: Shape: 3D Shape:** Step 16
identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	**SAFE: Shape: 3D Shape:** Step 13
compare and sort common 2-D and 3-D shapes and everyday objects	**SAFE: Shape: 2D Shape:** Step 17 **SAFE: Shape: 3D Shape:** Step 16

Geometry - position and direction

Curriculum Statement	Big Maths Location
order and arrange combinations of mathematical objects in patterns and sequences	**Dangerous Maths: Pattern Spotting:** Step 9
use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)	**SAFE: Shape: Position & Direction:** Steps 9 - 11 **SAFE: Amounts: Amounts of Turn:** Step 6

Statistics

Curriculum Statement	Big Maths Location
interpret and construct simple pictograms, tally charts, block diagrams and simple tables	**SAFE: Explaining Data: Diagrams & Tables:** Steps 8 - 16
ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	**SAFE: Explaining Data: Diagrams & Tables:** Steps 8 - 16
ask and answer questions about totalling and comparing categorical data	**SAFE: Explaining Data: Bar Charts**: Step 3

Year 3

Number - number and place value

Curriculum Statement	Big Maths Location
count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number	**CLIC: Counting: Count Fourways** **CLIC: Counting: Counting Multiples:** Steps 5, 6
recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	**CLIC: Counting: Squiggleworth:** Step 2
compare and order numbers up to 1000	**CLIC: Counting: CORE Numbers:** Step 4
identify, represent and estimate numbers using different representations	**CLIC: Counting: CORE Numbers:** Step 4
read and write numbers to at least 1000 in numerals and in words	**CLIC: Counting: Reading Numbers:** Steps 5, 6
solve number problems and practical problems involving these ideas	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: Counting: Counting Along** **CLIC: It's Nothing New: The Pim Principle:** Steps 2, 3

Number - addition and subtraction

Curriculum Statement	Big Maths Location
add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds	• **CLIC: Calculation: Addition:** Step 20 **CLIC: Calculation: Subtraction:** Step 19 • **CLIC: Calculation: Addition:** Step 26 **CLIC: Calculation: Subtraction:** Step 29 • **CLIC: Calculation: Addition:** Step 28 **CLIC: Calculation: Subtraction:** Step 29
add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction	**Cool Moves: Column Methods: Addition:** Step 5 **Cool Moves: Column Methods: Subtraction:** Step 5
estimate the answer to a calculation and use inverse operations to check answers	**CLIC: Counting: Core Numbers** **CLIC: It's Nothing New: Fact Families**
solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	**Real Life Maths** **CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: It's Nothing New: The Pim Principle:** Steps 1 - 3

Number - multiplication and division

Curriculum Statement	Big Maths Location
recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	**CLIC: Learn Its:** Steps 10 - 12
write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to efficient written methods	**CLIC: It's Nothing New: Fact Families:** Steps 1 - 3 **CLIC: It's Nothing New: Smile Multiplication:** Steps 1 - 3 **CLIC: Calculation: Multiplication:** Step 11 **Cool Moves: Column Methods: Multiplication:** Step 1
• solve problems, including missing number problems, involving multiplication and division, • including integer scaling problems and correspondence problems in which n objects are connected to m objects	• **Real Life Maths** **CLIC: It's Nothing New: Fact Families:** Steps 4, 5 • **SAFE: Fractions: Ratio:** Step 3 **Dangerous Maths: Prove It!:** Step 3

Number - fractions

Curriculum Statement	Big Maths Location
count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	**SAFE: Fractions: Fractions: Counting:** Steps 7, 8
recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	**SAFE: Fractions: Fractions of a Set:** Steps 9, 10
recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	**SAFE: Fractions: Fractions: Calculation:** Step 1
recognise and show, using diagrams, equivalent fractions with small denominators	**SAFE: Fractions: Fractions of a Whole:** Step 15
add and subtract fractions with the same denominator within one whole, for example, 5/7 + 1/7 = 6/7	**SAFE: Fractions: It's Nothing New:** Step 4
compare and order unit fractions, and fractions with the same denominators	**SAFE: Fractions: Fractions: Counting:** Step 9
solve problems that involve all of the above	**SAFE: Fractions**

Measurement

Curriculum Statement	Big Maths Location
measure, compare, add and subtract: • lengths (m/cm/mm); • mass (kg/g); • volume/capacity (l/ml)	• **SAFE: Amounts: Amounts of Distance:** Step 14 • **SAFE: Amounts: Amounts of Mass:** Step 13 • **SAFE: Amounts: Amounts of Space:** Step 13
measure the perimeter of simple 2-D shapes	**SAFE: Amounts: Amounts of Distance:** Step 18
add and subtract amounts of money to give change, using both £ and p in practical contexts	**SAFE: Amounts: Amounts of Money:** Step 13
tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	**SAFE: Amounts: Amounts of Time: Telling the Time:** Steps 12, 14
estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight	**SAFE: Amounts: Amounts of Time: Telling the Time:** Steps 11, 13
know the number of seconds in a minute and the number of days in each month, year and leap year	**SAFE: Amounts: Amounts of Time:** Steps 16, 22
compare durations of events [for example to calculate the time taken by particular events or tasks].	**SAFE: Amounts: Amounts of Time:** Step 21

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	**SAFE: Shape: 3D Shape:** Steps 17 - 19
recognise angles as a property of shape or a description of a turn	**SAFE: Amounts: Amounts of Turn:** Steps 4, 14
identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle	**SAFE: Amounts: Amounts of Turn:** Step 8

Curriculum Statement	Big Maths Location
identify horizontal and vertical lines and pairs of perpendicular and parallel lines	**SAFE: Shape: Explore & Draw:** Steps 15 - 17

Statistics

Curriculum Statement	Big Maths Location
interpret and present data using bar charts, pictograms and tables	**SAFE: Explaining Data: Bar Charts:** Steps 5, 6 **SAFE: Explaining Data: Diagrams & Tables:** Steps 17 - 20
solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	**SAFE: Explaining Data: Bar Charts:** Steps 7 - 9 **SAFE: Explaining Data: Diagrams & Tables:** Steps 17 - 20

Year 4

Number - number and place value

Curriculum Statement	Big Maths Location
count in multiples of 6, 7, 9, 25 and 1000	**CLIC: Counting: Count Fourways** **CLIC: Counting: Counting Multiples:** Steps 7 - 9
find 1000 more or less than a given number	**CLIC: Counting: Count Fourways** **CLIC: Counting: CORE Numbers**
count backwards through zero to include negative numbers	**CLIC: Counting: Count Fourways**
recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	**CLIC: Counting: Squiggleworth:** Step 2
order and compare numbers beyond 1000	**CLIC: Counting: CORE Numbers:** Step 5
identify, represent and estimate numbers using different representations	**CLIC: Counting: CORE Numbers:** Step 5
round any number to the nearest 10, 100 or 1000	**CLIC: Counting: CORE Numbers:** Step 5
solve number and practical problems that involve all of the above and with increasingly large positive numbers	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: Counting: Counting Along**
read Roman numerals to 100 (I to C) and understand how, over time, the numeral system changed to include the concept of zero and place value	**SAFE: Amounts: Amounts of Time: Telling the Time:** Step 17

Number - addition and subtraction

Curriculum Statement	Big Maths Location
add and subtract numbers with up to 4 digits using the efficient written methods of columnar addition and subtraction where appropriate	**Cool Moves: Column Methods: Addition:** Step 8 **Cool Moves: Column Methods: Subtraction:** Step 8
estimate and use inverse operations to check answers to a calculation	**CLIC: Counting: CORE Numbers** **CLIC: It's Nothing New: Fact Families**
solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction**

Number - multiplication and division

Curriculum Statement	Big Maths Location
recall multiplication and division facts for multiplication tables up to 12 × 12	**CLIC: Learn Its:** Steps 13 - 15
• use place value, known and derived facts to multiply and divide mentally, • including: multiplying by 0 and 1; dividing by 1; • multiplying together three numbers	**CLIC: Calculation: Multiplication** **CLIC: Calculation: Division** **Dangerous Maths: Prove It!:** Step 4
recognise and use factor pairs and commutativity in mental calculations	**CLIC: It's Nothing New: Pom's Words:** Step 2
multiply two-digit and three-digit numbers by a one-digit number using formal written layout	**Cool Moves: Column Methods: Multiplication:** Steps 2, 3
• solve problems involving multiplying and adding, • including using the distributive law and harder multiplication problems such as which n objects are connected to m objects	• **CLIC: Calculation: Addition** **CLIC: Calculation: Multiplication** • **CLIC: It's Nothing New: Coin Multiplication** **SAFE: Fractions: Ratio:** Step 4 **Big Maths Mastery**

Number - fractions (including decimals)

Curriculum Statement	Big Maths Location
recognise and show, using diagrams, families of common equivalent fractions	**SAFE: Fractions: Fractions of a Whole:** Step 17
count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	**SAFE: Fractions: Fractions: Counting:** Step 15
solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	**SAFE: Fractions: Fractions: Calculation:** Step 4 **SAFE: Fractions: Fractions of a Set:** Step 12
add and subtract fractions with the same denominator	**SAFE: Fractions: Fractions: It's Nothing New**: Step 5
recognise and write decimal equivalents of any number of tenths or hundredths	**SAFE: Fractions: Fractions: Counting:** Step 16
recognise and write decimal equivalents to ¼, ½, ¾	**SAFE: Fractions: Fractions: Learn Its:** Step 7

Curriculum Statement	Big Maths Location
find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths	**CLIC: It's Nothing New: Dividing by 10:** Step 2
round decimals with one decimal place to the nearest whole number	**CLIC: Counting: CORE Numbers:** Step 6 **SAFE: Fractions: Fractions: Counting**: Step 12
compare numbers with the same number of decimal places up to two decimal places	**CLIC: Counting: Core Numbers:** Step 7
solve simple measure and money problems involving fractions and decimals to two decimal places	**Real Life Maths** **CLIC: It's Nothing New: The Pim Principle:** Steps 1 - 3

Measurement

Curriculum Statement	Big Maths Location
Convert between different units of measure [for example, kilometre to metre; hour to minute]	**SAFE: Amounts: Amounts of Distance:** Step 22 **SAFE: Amounts: Amounts of Mass:** Step 16 **SAFE: Amounts: Amounts of Space:** Step 20 **SAFE: Amounts: Amounts of Time:** Step 24
measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	**SAFE: Amounts: Amounts of Distance:** Step 20
find the area of rectilinear shapes by counting squares	**SAFE: Amounts: Amounts of Space**: Step 17
estimate, compare and calculate different measures, including money in pounds and pence	**SAFE: Amounts**
read, write and convert time between analogue and digital 12- and 24-hour clocks	**SAFE: Amounts: Amounts of Time: Telling the Time:** Step 16
solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	**SAFE: Amounts: Amounts of Time**: Step 24

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	**SAFE: Shape: 2D Shape:** Step 23
identify acute and obtuse angles and compare and order angles up to two right angles by size	**SAFE: Amounts: Amounts of Turn:** Step 15
identify lines of symmetry in 2-D shapes presented in different orientations	**SAFE: Shape: Explore & Draw:** Step 20
complete a simple symmetric figure with respect to a specific line of symmetry	**SAFE: Explore & Draw:** Step 21

Geometry – position and direction

Curriculum Statement	Big Maths Location
describe positions on a 2-D grid as coordinates in the first quadrant	**SAFE: Shape: Position & Direction:** Step 16
describe movements between positions as translations of a given unit to the left/right and up/down	**SAFE: Shape: Position & Direction:** Steps 23, 24
plot specified points and draw sides to complete a given polygon	**SAFE: Shape: Position & Direction:** Step 21

Statistics

Curriculum Statement	Big Maths Location
interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	**SAFE: Explaining Data: Bar Charts:** Steps 10, 11 **SAFE: Explaining Data: Line Graphs:** Step 3
solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	**SAFE: Explaining Data: Bar Charts:** Steps 10, 11 **SAFE: Explaining Data: Diagrams & Tables:** Steps 21 - 24

Year 5

Number - number and place value

Curriculum Statement	Big Maths Location
read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	**CLIC: Counting: Reading Numbers:** Steps 7 - 9 **CLIC: Counting: CORE Numbers:** Step 9
count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	**CLIC: Counting: Count Fourways**
interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero	**CLIC: Counting: Count Fourways** **CLIC: Counting: Counting Along** **SAFE: Amounts: Amounts of Temperature:** Step 14
round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	**CLIC: Counting: CORE Numbers:** Step 9
solve number problems and practical problems that involve all of the above	**Real Life Maths** **CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: Counting: Counting Along** **CLIC: It's Nothing New: The Pim Principle:** Steps 1 - 3
read Roman numerals to 1000 (M) and recognise years written in Roman numerals	**SAFE: Amounts: Amounts of Time: Telling the Time:** Step 18

Number - addition and subtraction

Curriculum Statement	Big Maths Location
add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction)	**Cool Moves: Column Methods: Addition:** Step 10 **Cool Moves: Column Methods: Subtraction:** Step 10
add and subtract numbers mentally with increasingly large numbers	**CLIC: Calculation: Addition:** Step 38 **CLIC: Calculation: Subtraction:** Step 36
use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	**CLIC: Counting: CORE Numbers:** Steps 8, 9
solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	**Real Life Maths** **CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: It's Nothing New: The Pim Principle:** Steps 1 - 3

Number - multiplication and division

Curriculum Statement	Big Maths Location
identify multiples and factors, including finding all factor pairs	**CLIC: It's Nothing New: Pom's Words:** Steps 1, 2
solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors	**CLIC: It's Nothing New: Pom's Words:** Step 2
know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	**CLIC: It's Nothing New: Pom's Words:** Step 4
establish whether a number up to 100 is prime and recall prime numbers up to 19	**CLIC: It's Nothing New: Pom's Words:** Step 4
multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers	**Cool Moves: Column Methods: Multiplication:** Steps 4 - 7
multiply and divide numbers mentally drawing upon known facts	**CLIC: Calculation: Multiplication:** Step 15 **CLIC: Calculation: Division:** Steps 24 - 27
divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context	**Cool Moves: Column Methods: Division:** Step 7
multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	**CLIC: It's Nothing New: Multiplying by 10** **CLIC: It's Nothing New: Dividing by 10**
recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	**CLIC: It's Nothing New: Pom's Words:** Step 3
solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	**CLIC: Calculation**
solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	**Real Life Maths** **CLIC: Calculation: Multiplication** **CLIC: Calculation: Division** **SAFE: Fractions: Fractions: Ratio:** Steps 5 - 7

Number - fractions (including decimals and percentages)

Curriculum Statement	Big Maths Location
compare and order fractions whose denominators are all multiples of the same number	**SAFE: Fractions: Fractions: Calculation:** Step 6
identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	**SAFE: Fractions: Fractions: Calculation:** Step 8
recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number, for example, 2/5 + 4/5 = 6/5 = 1 1/5	**SAFE: Fractions: Fractions: Calculation:** Steps 13, 14
add and subtract fractions with the same denominator and denominators that are multiples of the same number	**SAFE: Fractions: Fractions: Calculation:** Step 7
multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**SAFE: Fractions: Fractions: Calculation:** Steps 15, 16
read and write decimal numbers as fractions, for example, 0.71 = 71/100	**SAFE: Fractions: Fractions: Counting:** Step 16
recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	**SAFE: Fractions: Fractions: Counting:** Step 19 **CLIC: Counting: CORE Numbers:** Step 8
round decimals with two decimal places to the nearest whole number and to one decimal place	**CLIC: Counting: CORE Numbers:** Step 7
read, write, order and compare numbers with up to three decimal places	**CLIC: Counting: CORE Numbers:** Step 8
solve problems involving number up to three decimal places	**Real Life Maths** **CLIC: Calculation**
recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal	**SAFE: Fractions: Fractions: Counting:** Step 20 **SAFE: Fractions: Percentage:** Step 1
solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25	**SAFE: Fractions: Fractions: Calculation:** Step 17 **SAFE: Fractions: Fractions: Learn Its:** Step 10 **SAFE: Fractions: Percentages:** Steps 2, 3

Measurement

Curriculum Statement	Big Maths Location
convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	**SAFE: Amounts: Amounts of Distance:** Step 27 **SAFE: Amounts: Amounts of Mass:** Step 17 **SAFE: Amounts: Amounts of Space:** Step 23
understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	**SAFE: Amounts: Amounts of Distance:** Step 28 **SAFE: Amounts: Amounts of Mass:** Step 18 **SAFE: Amounts: Amounts of Space:** Step 24
measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	**SAFE: Amounts: Amounts of Distance:** Step 25
calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	**SAFE: Amounts: Amounts of Space:** Step 22
estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	**SAFE: Amounts: Amounts of Space:** Step 25
solve problems involving converting between units of time	**SAFE: Amounts: Amounts of Time:** Step 31
use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	**Real Life Maths**

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
identify 3-D shapes, including cubes and other cuboids, from 2-D representations	**SAFE: Shape: 3D Shape:** Step 23
know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	**SAFE: Amounts: Amounts of Turn:** Steps 18, 22
draw given angles, and measure them in degrees (°)	**SAFE: Amounts: Amounts of Turn:** Steps 23 - 29

Curriculum Statement	Big Maths Location
identify: • angles at a point and one whole turn (total 360°) • angles at a point on a straight line and 1/2 a turn (total 180°) • other multiples of 90°	**SAFE: Amounts: Amounts of Turn:** Step 21
use the properties of rectangles to deduce related facts and find missing lengths and angles	**SAFE: Shape: 2D Shape:** Step 24 **SAFE: Amounts: Amounts of Turn:** Step 30
distinguish between regular and irregular polygons based on reasoning about equal sides and angles	**SAFE: Shape: 2D Shape:** Step 24

Geometry - position and direction

Curriculum Statement	Big Maths Location
identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	**SAFE: Shape: Position & Direction:** Step 29

Statistics

Curriculum Statement	Big Maths Location
solve comparison, sum and difference problems using information presented in a line graph	**SAFE: Explaining Data: Line Graphs:** Step 6
complete, read and interpret information in tables, including timetables	**SAFE: Explaining Data: Diagrams & Tables:** Step 25

Year 6

Number - number and place value

Curriculum Statement	Big Maths Location
read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	**CLIC: Counting: Reading Numbers:** Step 10 **CLIC: Counting: CORE Numbers:** Step 9
round any whole number to a required degree of accuracy	**CLIC: Counting: CORE Numbers:** Step 9
use negative numbers in context, and calculate intervals across zero	**CLIC: Counting: Counting Along:** Step 7
solve number problems and practical problems that involve all of the above	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **CLIC: Counting: Counting Along** **Real Life Maths**

Number - addition, subtraction, multiplication & division

Curriculum Statement	Big Maths Location
multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication	**Cool Moves: Column Methods: Multiplication:** Step 7
divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	**Cool Moves: Column Methods: Division:** Step 9
perform mental calculations, including with mixed operations and large numbers	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction**
identify common factors, common multiples and prime numbers	**CLIC: It's Nothing New: Pom's Words:** Steps 1 - 4
use their knowledge of the order of operations to carry out calculations involving the four operations	**Dangerous Maths: Algebra:** Step 18
solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **Cool Moves: Column Methods: Addition** **Cool Moves: Column Methods: Subtraction**

Curriculum Statement	Big Maths Location
solve problems involving addition, subtraction, multiplication and division	**CLIC: Calculation: Addition** **CLIC: Calculation: Subtraction** **Real Life Maths**
use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy	**CLIC: Counting: CORE Numbers**

Number - fractions (including decimals and percentages)

Curriculum Statement	Big Maths Location
use common factors to simplify fractions; use common multiples to express fractions in the same denomination	**SAFE: Fractions: Fractions: Calculation:** Steps 18, 19
compare and order fractions, including fractions > 1	**SAFE: Fractions: Fractions: Calculation:** Step 21
add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	**SAFE: Fractions: Fractions: Calculation:** Step 22
multiply simple pairs of proper fractions, writing the answer in its simplest form, for example, 1/4 × 1/2 = 1/8	**SAFE: Fractions: Fractions: Calculation:** Step 20
divide proper fractions by whole numbers, for example, 1/3 ÷ 2 = 1/6	**SAFE: Fractions: Fractions: Calculation:** Step 23
identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	**CLIC: Counting: Squiggleworth:** Step 5 **CLIC: Counting: CORE Numbers:** Step 8
multiply one-digit numbers with up to two decimal places by whole numbers	**CLIC: Calculation: Multiplication:** Step 18
use written division methods in cases where the answer has up to two decimal places	**Cool Moves: Column Methods: Division:** Step 10
solve problems which require answers to be rounded to specified degrees of accuracy	**CLIC: Counting: CORE Numbers:** Steps 6 - 10
recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	**SAFE: Fractions: Fractions: Calculation:** Step 17

Ratio and proportion

Curriculum Statement	Big Maths Location
solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	**SAFE: Fractions: Ratio:** Step 8
solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	**SAFE: Fractions: Percentages:** Step 6
solve problems involving similar shapes where the scale factor is known or can be found	**SAFE: Fractions: Ratio:** Step 9
solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	**SAFE: Fractions: Ratio:** Step 8

Algebra

Curriculum Statement	Big Maths Location
use simple formulae	**SAFE: Amounts: Amounts of Space:** Steps 31, 32
generate and describe linear number sequences	**Dangerous Maths: Pattern Spotting:** Step 19
express missing number problems algebraically	**Dangerous Maths: Algebra:** Step 17
find pairs of numbers that satisfy an equation with two unknowns	**Dangerous Maths: Algebra:** Step 20
enumerate possibilities of combinations of two variables	**Dangerous Maths: Algebra:** Step 21

Measurement

Curriculum Statement	Big Maths Location
solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	**SAFE: Amounts: Amounts of Distance:** Step 29 **SAFE: Amounts: Amounts of Mass:** Step 19 **SAFE: Amounts: Amounts of Space:** Step 27

Curriculum Statement	Big Maths Location
use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places	**SAFE: Amounts: Amounts of Distance:** Step 29 **SAFE: Amounts: Amounts of Mass:** Step 19 **SAFE: Amounts: Amounts of Space:** Step 27 **SAFE: Amounts: Amounts of Time:** Step 31
convert between miles and kilometres	**SAFE: Amounts: Amounts of Distance:** Step 28 **SAFE: Explaining Data: Line Graphs:** Step 7 **SAFE: Fractions: Ratio:** Step 12
recognise that shapes with the same areas can have different perimeters and vice versa	**SAFE: Amounts: Amounts of Space:** Step 29
recognise when it is possible to use formulae for area and volume of shapes	**SAFE: Amounts: Amounts of Space:** Steps 30, 31
calculate the area of parallelograms and triangles	**SAFE: Amounts: Amounts of Space:** Steps 30, 31
calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].	**SAFE: Amounts: Amounts of Space:** Step 28

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
draw 2-D shapes using given dimensions and angles	**SAFE: Shape: Explore & Draw:** Step 28
recognise, describe and build simple 3-D shapes, including making nets	**SAFE: Shape: 3D Shape:** Step 26
compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	**SAFE: Shape: 2D Shape:** Step 27 **SAFE: Shape: 3D Shape:** Step 27
illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	**SAFE: Amounts: Amounts of Distance:** Steps 30, 31, 32
recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	**SAFE: Amounts: Amounts of Turn:** Step 34

Geometry – position and direction

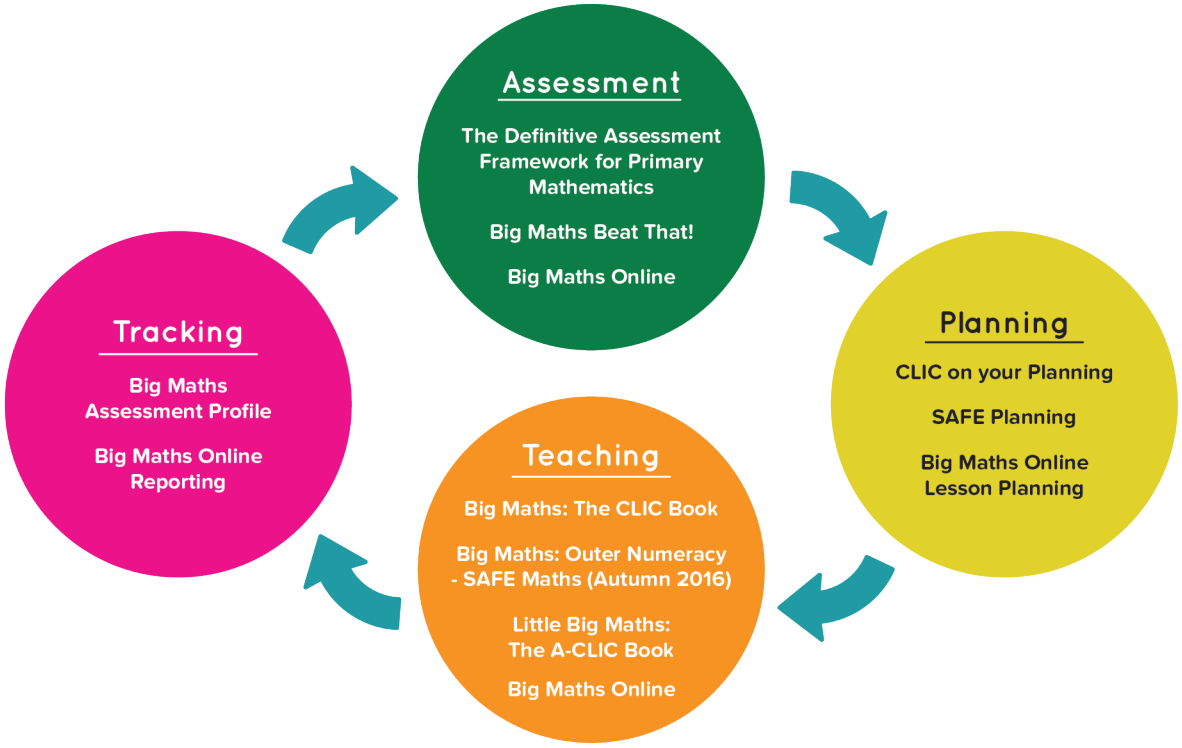
Curriculum Statement	Big Maths Location
describe positions on the full coordinate grid (all four quadrants)	**SAFE: Shape: Position & Direction:** Step 31
draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	**SAFE: Shape: Position & Direction:** Steps 33, 34

Statistics

Curriculum Statement	Big Maths Location
interpret and construct pie charts and line graphs and use these to solve problems	**SAFE: Explaining Data: Pie Charts:** Steps 9, 10, 11 **SAFE: Explaining Data: Line Graphs**: Step 8
calculate and interpret the mean as an average	**SAFE: Explaining Data: Averages:** Step 6

The Definitive Assessment Framework for Primary Mathematics

> *"To be effective in producing profound, lasting change, professional development interventions had to be prolonged."*
>
> *The Teacher Development Trust*



How to Introduce Big Maths to your School

Training → Resources → Implementation → Support

Big Maths INSET training is the key starting point to sustained, successful implementation. For more information on how to access Big Maths training, give us a **call on +44 (0) 1924 229380.**

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