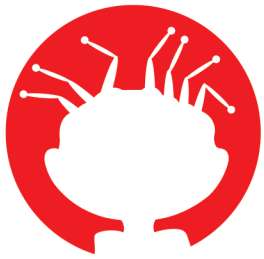
Big Maths

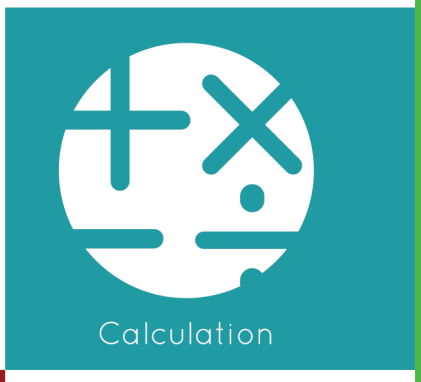
Year 2

Termly Learning Objectives


Counting

Learn Its


It's Nothing New


Calculation


Shape

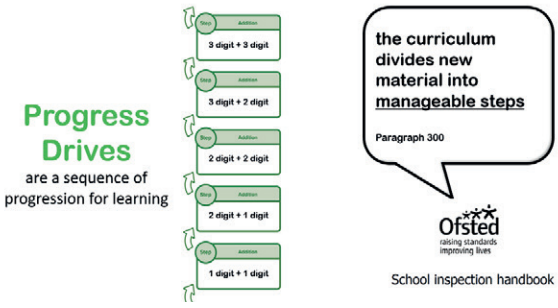

Amounts

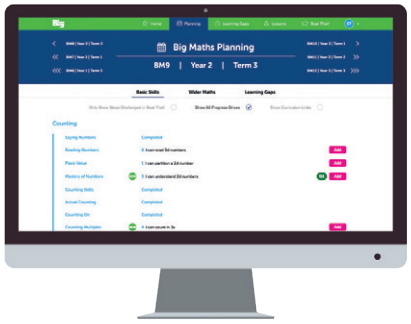

Fractions


Explaining Data

Andrell Education Ltd

Big Maths takes the broader curriculum statements from the national curriculum and breaks them down into smaller manageable steps. This results in a sequence of learning that forms the structure of the Big Maths curriculum design, which schools can then adopt. In Big Maths we call each strand/spine a Progress Drive, since it becomes a tool for the teacher to drive (as in 'to guide' or 'to steer') the learner's progress. We can see too how Ofsted now explicitly recognises this as a crucial curriculum design feature for maths.



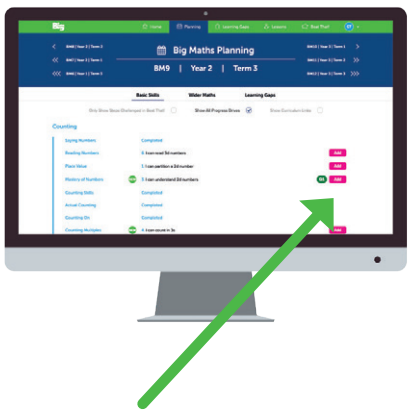


It is also effective to know *when* learners should secure each small step on the Progress Drive. This is an age-related expectation that comes from mapping the smaller steps to national curriculum year group statements. This provides the teacher with a clear and simple view of which steps need to be secured each term in order to keep the learner 'on track'. These can be seen as a list of term by term learning objective statements on the Big Maths Online website.

This can also be seen here in this 'termly learning objectives' planning document. This can be downloaded and printed out from the library section within the Big Maths Online website (new learning is denoted by being highlighted in green).

Basic Skills

Progress Drive	Step	Statement	✓
Place Value	5	I can partition a 3dp number	
Mastery of Numbers	8	I can understand 3dp numbers	
	9	I can understand 5, 6, 7, 8d numbers	
Count Along in 4 Ways	-25s	-25s	
Counting Along Scales	6	I can find the gap between 2 negative numbers	
Multiplying by 10	5	I can multiply whole numbers and decimals by 1000	
Dividing by 10	5	I can divide whole numbers and decimals by 1000	
Multiple-Factor-Prime	4	I understand prime numbers	
Addition	36	I can solve additions with 2dp	
	37	I can solve any additions with 2dp	
	38	I can solve additions with larger numbers	



Click here to immediately add this step to Big Maths Online weekly/lesson planning:

- Teacher notes are added automatically.
- Personalised notes can be added.
- Chosen resources from Big Maths Online can also be immediately added.

This planning guidance should not be used as a list that takes the teacher back to the antiquated days of simply 'covering a curriculum', but rather is a list of 'next steps' for learners to secure (that term) in their long term memory, the teacher having ensured learners have secured earlier steps on that Progress Drive. The teacher will need to construct their own plan as to how they will guide their pupils from their current starting points to the desired end points for that term. Although this requires important thinking that can only be done at the bespoke level of that teacher responding to that particular class of children, the planning process itself is quick and easy since the step is always simply located from the structure of the Big Maths curriculum, and the teacher notes and resources are there to be found at that location. All the teacher need do is click and add that step to their weekly/lesson plan, and then familiarise themselves with the delivery of that step.

A more short-hand version of this termly planning view is to use the Big Maths planning document that outlines the expected finishing position for leaners that term on each Progress Drive. This document simply shows which step the learner should be on by the end of that term if they are to be classed as 'on track'.

	Progress Drive	Steps
C	Saying Numbers	✓
	Reading Numbers	10, 11
	Place Value	4
	Mastery of Numbers	7
	Counting Skills	✓
	Actual Counting	✓
	Counting On	✓
	Counting Multiples	✓
	Counting Along in 4 Ways	-2s, -5s
	Counting Along Scales	5

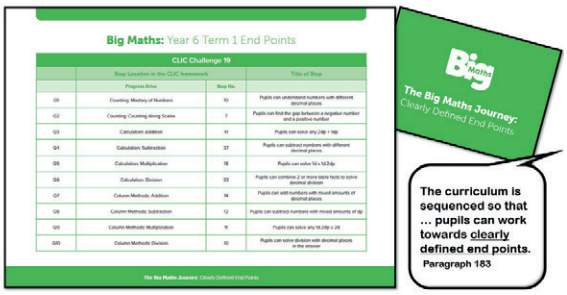
	Progress Drive	Steps
S	Explore & Draw	24
	2D Shapes	23
	3D Shapes	20, 21
	Position & Direction	26, 27

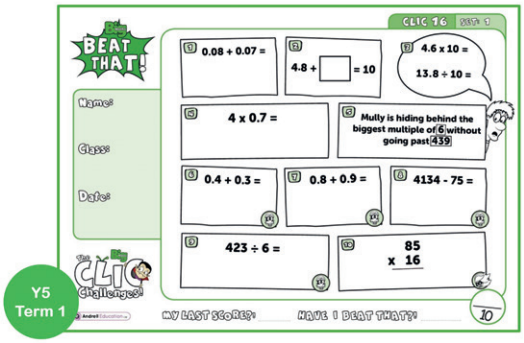
	Progress Drive	Steps
L	Learn its	✓

	Progress Drive	Steps
A	Amounts of Distance	26
	Amounts of Mass	16
	Amounts of Money	15
	Amounts of Space	20
	Amounts of Temperature	11
	Amounts of Time	27
	Amounts of Time: Telling the Time	✓
	Amounts of Turn	22, 23, 24

	Progress Drive	Steps
I	Swapping the Units	✓
	INN: Addition and Subtraction	✓
	Doubling & Halving	✓ ✓ ✓
	INN: Number Bonds to 10	✓
	x10 & ÷10	4 4
	INN: Multiplication	5
	Coin Multiplication	5

	Progress Drive	Steps
F	Fractions of a Whole	17
	Fractions of a Set	13
	Fractions: Counting	18
	Fractions: Learn its	9
	Fractions: It's Nothing New	7
	Fractions: Calculation	8 - 12





The Big Maths Beat That challenges are also mapped into this age-related expectation journey. Indeed, the 10 questions on each CLIC challenge represent the most essential core knowledge of the curriculum that the learner should have acquired. In effect, the 10 questions are 10 learning objectives that provide the sharpest focus of a clearly defined end point for each term. This allows the school to have perfect transparency as to which individuals, and what proportion of individuals, are 'on track' at any one time. Ensuring all pupils secure this core knowledge of the curriculum is a vital aspect of any mastery approach. Again, this idea of breaking the bigger maths journey into smaller clearly defined parts, mapped into an expected timeframe, is something that has been part of Big Maths for over a decade, but that Ofsted now recognises as an essential element of curriculum design.

Using Big Maths Online to track the performance of pupils will speed up the teacher's response to planning the next steps for learning. This can be extended into pupils completing their challenges online so that there is no printing, photocopying, sheet-management or marking; yet, the teacher can use the learning gaps feature to respond immediately in their online planning if they so wish.

Basic Skills

Progress Drive	Step	Statement	✓
Reading Numbers	5	I can read 3d multiples of 100	
Place Value	1	I can partition a 2d number	
Mastery of Numbers	2	I can understand numbers to 20	
Counting Multiples	3	I can count in 2s	
Count Along in 4 Ways	100s	100s	
Learn Its	7	3+8 3+9 4+7 4+8 4 + 9 10x table	
Swapping the Units	1	Swap 'the thing' to another object	
INN: Addition and Subtraction	1	I can add tens	
Doubling with Pim (without crossing 10)	3	I can double 2d numbers	
Doubling with Pim (with crossing 10)	2	I can double 2d multiples of 10	
Halving with Pim	2	I know half of 30, 50, 70, 90	
INN: Number Bonds to 10	1	I can find the missing piece to 10	
INN: Fact Families	2	I can turn 1d + 1d facts into multiples of 10	
Addition	13	I can add 1 to a 2d number	
	14	I can add 10 to a 2d tens number	
	15	I can add 10 to any 2d number	
Subtraction	13	I can take 10 from a multiple of 10	
	14	I can take 10 from a 2d number	
	15	I can take a multiple of 10 from a multiple of 10	
Multiplication	7	I can write out repeated addition	
	8	I can solve repeated addition	
Division	12	I can find how many altogether by counting in 2s, 5s or 10s	

Wider Maths

Progress Drive	Step	Statement	✓
Explore and Draw	8	I can reflect a simple rectangle when given a vertical line of symmetry	
2D Shapes	13	I can recognise many different types of familiar 2D shapes	
3D Shapes	10	I can recognise many different types of familiar 3D shapes	
Position and Direction	11	I can understand 'anti-clockwise' as a direction of turn	
Amounts of Distance	6	I can compare amounts of distance, using words and numbers, in lots of different practical contexts	
Amounts of Mass	6	I can compare amounts of mass, using words and numbers, in lots of different practical contexts	
Amounts of Money	8	I can use coins to make totals up to 100p	
Amounts of Space	6	I can compare amounts of space, using words and numbers, in lots of different practical contexts	
Amounts of Temperature	5	I can use a range of words to describe temperature	
Amounts of Time	14	I know there are 24 hours in a day	
	15	I can count in 5 mins and know there are 60 minutes in an hour	
	16	I know there are 60 seconds in a minute	
Amounts of Time: Telling the Time	5	I can read, write and draw quarter past and quarter to	
	6	I can read a digital clock	
Amounts of Turn	4	I know that the word angle describes amount of turn	
Fractions of a Whole	8	I can find how many quarters	
Fractions of a Set	5	I can find a quarter of a set of objects by sharing	
Fractions: Learn Its	1	I know my finger doubles as fractions Learn Its	
Ratio	1	I can show appreciation of a fixed number relationship	
Diagrams and Tables	13	I can read a simple table	
	14	I can explain that a picture represents a quantity	
	15	I can explain a range of pictograms	

Wider Maths (Continued)

Progress Drive	Step	Statement	✓
Bar Charts	2	I can explain counting towers	
Line Graphs	1	I can track my own Big Maths Beat That! scores with a block graph	
Pattern Spotting	8	I understand the pattern of odd and even numbers	
Algebra	2	I know symbols can represent unknown numbers	
Prove It!	1	I can Prove It! - 1	

Basic Skills

Progress Drive	Step	Statement	✓
Reading Numbers	6	I can read 3d numbers	
Place Value	1	I can partition a 2d number	
Mastery of Numbers	2	I can understand numbers to 20	
Counting Multiples	3	I can count in 2s	
Count Along in 4 Ways	50s, 500s, 5000s, 1/2s	50s 500s 5000s 1/2s	
Learn Its	8	5+4 5+6 6+7 8+7 8+9 5x table	
Swapping the Units	1	Swap 'the thing' to another object	
INN: Addition and Subtraction	2	I can add hundreds	
Doubling with Pim (without crossing 10)	3	I can double 2d numbers	
Doubling with Pim (with crossing 10)	2	I can double 2d multiples of 10	
Halving with Pim	2	I know half of 30, 50, 70, 90	
INN: Number Bonds to 10	2	I can find the missing piece to the next multiple of 10	
INN: Finding Multiples	1	I can find Mully using my tables	
INN: Fact Families	2	I can turn 1d + 1d facts into multiples of 10	
Addition	16	I can add a 1d number to a 2d tens number	
	17	I can solve 2d + 1d	
	18	I can add a 2d tens number to another one	
	19	I can solve any 1d + 1d in my head	
Subtraction	16	I can take a 1d number from a multiple of 10	
	17	I can solve 2d - 1d	
	18	I can solve any 2d - 1d	
	19	I can solve any 3d - 1d	
Multiplication	8	I can solve repeated addition	

Basic Skills (Continued)

Progress Drive	Step	Statement	✓
Division	13	I can arrange a division number sentence	
	14	I can solve a division number sentence with objects	
	15	I can solve division, using objects (with remainders)	

Wider Maths

Progress Drive	Step	Statement	✓
Explore and Draw	9	I can reflect a simple 2D shape when given a vertical line of symmetry	
	10	I can identify a vertical line of symmetry in a 2D shape	
2D Shapes	14	I can recognise a quadrilateral and a hexagon	
	15	I can recognise a pentagon and an octagon	
	16	I can recognise a heptagon and understand the word 'polygon'	
3D Shapes	11	I understand edges, vertices and faces	
	12	I can describe 3D shapes using different properties	
	13	I can spot 2D shapes as faces on 3D shapes	
Position and Direction	12	I can move an object up or down a track, given the number of spaces	
Amounts of Distance	6	I can compare amounts of distance, using words and numbers, in lots of different practical contexts	
Amounts of Mass	6	I can compare amounts of mass, using words and numbers, in lots of different practical contexts	
Amounts of Money	9	I know that £1 has the same value as 100p	
	10	I know that amounts over £1 can be written as 125p or '£1 and 25p'	
Amounts of Space	6	I can compare amounts of space, using words and numbers, in lots of different practical contexts	
Amounts of Temperature	6	I can use a thermometer to measure the temperature	
	7	I know that we measure temperature in degrees Celsius	
Amounts of Time	16	I know there are 60 seconds in a minute	
Amounts of Time: Telling the Time	6	I can read a digital clock	
Amounts of Turn	4	I know that the word angle describes amount of turn	
Fractions of a Whole	8	I can find how many quarters	
Fractions of a Set	5	I can find a quarter of a set of objects by sharing	

Wider Maths (Continued)

Progress Drive	Step	Statement	✓
Fractions: Counting	1	I can count in halves	
	2	I can count in halves and record my counting as a mixed number	
	3	I can count in halves and record as a mixed number and improper fraction	
Fractions: Learn Its	1	I know my finger doubles as fractions Learn Its	
Ratio	1	I can show appreciation of a fixed number relationship	
Diagrams and Tables	16	I can explain pictograms with half pictures	
Bar Charts	3	I can read a bar chart	
Line Graphs	1	I can track my own Big Maths Beat That! scores with a block graph	
Pattern Spotting	8	I understand the pattern of odd and even numbers	
Algebra	3	I understand that = means the same amount as	
Prove It!	1	I can Prove It! - 1	

Basic Skills

Progress Drive	Step	Statement	✓
Reading Numbers	6	I can read 3d numbers	
Place Value	1	I can partition a 2d number	
Mastery of Numbers	3	I can understand 2d numbers	
Counting Multiples	4	I can count in 3s	
Count Along in 4 Ways	20s, 200s, 2000s, 1/4s	20s 200s 2000s 1/4s	
Counting Along Scales	1	I can count along when the numbers are written in	
Learn Its	9	5+7 5+8 5+9 6+8 6+9 7+9 2x table	
Swapping the Units	1	Swap 'the thing' to another object	
INN: Addition and Subtraction	3	I can add thousands	
Doubling with Pim (without crossing 10)	3	I can double 2d numbers	
Doubling with Pim (with crossing 10)	3	I can double 2d numbers	
Halving with Pim	3	I know half of 300, 500, 700, 900	
INN: Number Bonds to 10	3	I can find the missing piece to 100	
Multiplying by 10	1	I can multiply whole numbers by 10	
Dividing by 10	1	I can divide multiples of 10 by 10	
Coin Multiplication	1	I can complete a 1, 10 card	
	2	I can complete a 1, 2, 5, 10 card	
INN: Finding Multiples	1	I can find Mully using my tables	
INN: Fact Families	3	I know the Fact Family when given a single addition fact	
	4	I know the Fact Families for 1d x 1d facts	

Basic Skills (Continued)

Progress Drive	Step	Statement	✓
Addition	20	I can solve any 2d + 1d	
	21	I can add any 2d tens number to another one	
	22	I can add a 2d tens number to a 2d number	
	23	I can add any 2d tens number to a 2d number	
	24	I can add a 2d number to a 2d number	
Subtraction	20	I can spot the next multiple of 10	
	21	I can count to the next multiple of 10	
	22	I know the gap to the next multiple of 10	
	23	I know the 1d gap from a multiple of 10	
	24	I know the total gap across a multiple of 10	
	25	I can take a multiple of 10 from any 2d number	
	26	I can find the 2 gaps in a 2d - 2d question	
	27	I can solve any 2d - 2d	
Multiplication	9	I can solve 1d x 1d (2, 3, 4, 5x tables)	
Division	16	I can use a Tables Fact to find a division fact (2, 3, 4, 5x tables)	
	17	I can use a Tables Fact to find a division fact (with remainders) (2, 3, 4, 5x tables)	
Addition - Column Methods	1	I can solve a 2d + 2d	
Subtraction - Column Methods	1	I can solve a 2d - 2d	

Wider Maths

Progress Drive	Step	Statement	✓
Explore and Draw	11	I can draw straight lines	
	12	I can draw lines to the nearest centimetre	
	13	I can draw simple shapes	
	14	I can draw lines to the nearest half centimetre	
2D Shapes	17	I can compare and sort many 2D shapes	
3D Shapes	14	I know 'The Pyramid Family'	
	15	I know 'The Prism Family'	
	16	I can compare and sort 3D shapes	
Position and Direction	12	I can move an object up or down a track, given the number of spaces	
Amounts of Distance	7	I can compare descriptions of distance in practical contexts and record the comparisons with symbols	
	8	I can measure distance using metres	
	9	I can measure distance using centimetres	
	10	I can choose to count in metres or centimetres by seeing what makes most sense	
Amounts of Mass	7	I can compare descriptions of mass in practical contexts and record the comparisons with symbols	
	8	I can measure mass using grams	
	9	I can measure mass using kilograms	
	10	I can choose to measure in kilograms or grams by seeing what makes most sense	
Amounts of Money	11	I can give change from a pound	
	12	I can use all of my CLIC steps, so far, in the context of money (involving either pounds or pence)	

Wider Maths (Continued)

Progress Drive	Step	Statement	✓
Amounts of Space	7	I can compare descriptions of capacity in practical contexts and record the comparisons with symbols	
	8	I can measure capacity using litres	
	9	I can measure capacity using millilitres	
	10	I can choose to measure in litres or millilitres by seeing what makes most sense	
Amounts of Temperature	7	I know that we measure temperature in degrees Celsius	
Amounts of Time	17	I can say the months of the year	
	18	I know all about an hour	
	19	I can place different periods of time in order	
Amounts of Time: Telling the Time	7	I can count in 5s around a clock face	
	8	I can tell the time!	
Amounts of Turn	5	I can recognise that a quarter turn is a right angle	
	6	I can use right angles in practical contexts	
Fractions of a Whole	8	I can find how many quarters	
Fractions of a Set	6	I can find fractions of amounts by sharing and then counting (1 part only)	
	7	I can reword my division success as fractions	
	8	I can find fractions of amounts by sharing and then counting (2 or more parts)	
Fractions: Counting	4	I can count in quarters	
	5	I can count in quarters and record as halves	
Fractions: Learn Its	2	I know 1/2 = 2/4	
	3	I can quickly write out my fractions Learn Its 1/2 of 10=5 1/2 of 8=4 1/2 of 6=3 1/2 of 4=2 1/2 of 2=1	
	4	I know all of my x2, x5 and x10 tables as fractions Learn Its	

Wider Maths (Continued)

Progress Drive	Step	Statement	✓
Fractions: It's Nothing New	1	I can swap 'the thing' to a fraction	
	2	I can add halves	
	3	I can add and subtract halves, quarters and thirds	
Ratio	2	I can use fixed number relationships in my learning	
Diagrams and Tables	16	I can explain pictograms with half pictures	
Bar Charts	3	I can read a bar chart	
Line Graphs	1	I can track my own Big Maths Beat That! scores with a block graph	
Pattern Spotting	9	I can spot and extend more challenging patterns of shapes	
Algebra	3	I understand that = means the same amount as	
Prove It!	2	I can Prove It! - 2	

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