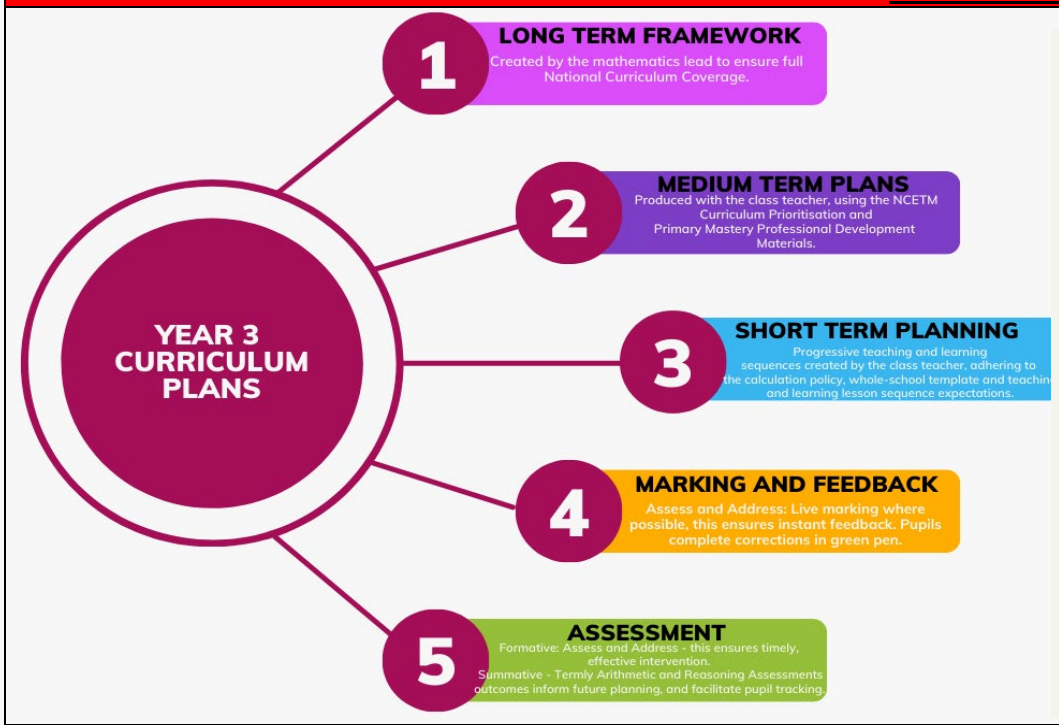
Brougham Primary School
Year 3 Mathematics

INTENT

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling (National Curriculum 2014).

IMPLEMENTATION



YEAR 3 ESSENTIAL KNOWLEDGE

YEAR 3 NATIONAL CURRICULUM COVERAGE LONG TERM FRAMEWORK

Brougham Primary School

Year 3

Long Term Framework

Brougham Primary School

14 Week Term (11 weeks of planning before data collection)					
Autumn	NCETM Numbers to 1,000 including measure (10 weeks)	Statistics (1 week)	NCETM Right Angles (1 week)	Assessment Week (1 week)	Christmas Maths (1 week)
11 Week Term (9 weeks planning before data collection)					
Spring	NCETM Manipulating the additive relationship and securing mental calculation (2 weeks)	NCETM Column addition (2 weeks)	NCETM Column subtraction (1 week)	Assessment Week (1 week)	NCETM 2,3, 4 and 8 times tables (4 weeks)
13 Week Term (10 weeks planning before data collection)					
Summer	NCETM Unit fractions (4 weeks)	NCETM Non-unit fractions (4 weeks)	NCETM Parallel and Perpendicular lines in polygons (2 weeks)	Assessment Week (1 week)	NCETM Time (2 weeks)

YEAR 3 FLUENCY TRAINING

- A weekly Fluency Training lesson is delivered for 30 minutes at the beginning of each week. This lesson allows children to learn/practise a specific fluency skill based upon the year 3 Fluency Ladder.
- For the remainder of the week, children independently complete a daily Fluency Training activity; this ensures that children are provided with the opportunity to practise the fluency skill focus from their fluency training lesson, and to develop and improve their fluency, recall, accuracy, efficiency and stamina with the fundamentals of maths.

YEAR 3 FLUENCY LADDER

Fluency Training Ladder
Year 3

Week	Fluency Facts to learn
39	MTC 2,3,4,5,8 and 10 (data to be submitted to next class teacher; must inform Y4 autumn term intervention)
38	MTC 3x table
37	Related facts for 3x table
36	Division facts for 3x table
35	Division facts for 3x table
34	Count in Multiples of 3
33	Count in Multiples of 3
32	Multiplication facts for 3x table
31	Multiplication facts for 3x table
30	MTC 8x table
29	Related facts for 8x table
28	Division facts for 8x table
27	Division facts for 8x table
26	Count in Multiples of 8
25	Count in Multiples of 8
24	Multiplication facts for 8x table
23	Multiplication facts for 8x table
22	MTC 4x table
21	Related facts for 4x table
20	Division facts for 4x table
19	Division facts for 4x table
18	Count in Multiples of 4
17	Count in Multiples of 4
16	Multiplication facts for 4x table
15	Multiplication facts for 4x table
14	MTC x2 table
13	Related facts for x2 table
12	Division facts for x2 table
11	Count in Multiples of 2
10	Multiplication facts for x2 table
9	MTC x5 table
8	Division facts for 5x table
7	Count in Multiples of 5
6	Multiplication facts for 5x table
5	Count in Multiples of 100
4	MTC 10x table
3	Division facts for 10x table
2	Count in Multiples of 10
1	Multiplication facts for 10x table

YEAR 3 KEY INSTANT RECALL FACTS

Year 3 Facts

											1 x 1 = 1
										2 x 2 = 4	1 x 2 = 2
									3 x 3 = 9	2 x 3 = 6	1 x 3 = 3
								4 x 4 = 16	3 x 4 = 12	2 x 4 = 8	1 x 4 = 4
							5 x 5 = 25	4 x 5 = 20	3 x 5 = 15	2 x 5 = 10	1 x 5 = 5
						6 x 6 = 36	5 x 6 = 30	4 x 6 = 24	3 x 6 = 18	2 x 6 = 12	1 x 6 = 6
					7 x 7 = 49	6 x 7 = 42	5 x 7 = 35	4 x 7 = 28	3 x 7 = 21	2 x 7 = 14	1 x 7 = 7
				8 x 8 = 64	7 x 8 = 56	6 x 8 = 48	5 x 8 = 40	4 x 8 = 32	3 x 8 = 24	2 x 8 = 16	1 x 8 = 8
			9 x 9 = 81	8 x 9 = 72	7 x 9 = 63	6 x 9 = 54	5 x 9 = 45	4 x 9 = 36	3 x 9 = 27	2 x 9 = 18	1 x 9 = 9
		10 x 10 = 100	9 x 10 = 90	8 x 10 = 80	7 x 10 = 70	6 x 10 = 60	5 x 10 = 50	4 x 10 = 40	3 x 10 = 30	2 x 10 = 20	1 x 10 = 10
	11 x 11 = 121	10 x 11 = 110	9 x 11 = 99	8 x 11 = 88	7 x 11 = 77	6 x 11 = 66	5 x 11 = 55	4 x 11 = 44	3 x 11 = 33	2 x 11 = 22	1 x 11 = 11
12 x 12 = 144	11 x 12 = 132	10 x 12 = 120	9 x 12 = 108	8 x 12 = 96	7 x 12 = 84	6 x 12 = 72	5 x 12 = 60	4 x 12 = 48	3 x 12 = 36	2 x 12 = 24	1 x 12 = 12
12	11	10	9	8	7	6	5	4	3	2	1

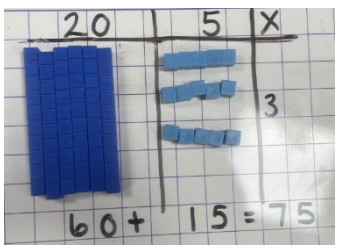
KIRF Benchmarks for Automaticity are used as part of the termly assessment process for mathematics. The aim is that by the end of the year, the pupil is able to fluently and accurately recall the facts for their year group benchmark – this will aid their mental maths fluency, agility and application when faced with a range of mathematical concepts.

PROGRESSION IN CALCULATION

	Year 2	Year 3	Year 4
Addition	Adding three single digits Partitioning with no regrouping/recombining Column method – no regrouping	Column method – regrouping/renaming (up to 3 digits)	Column method - regrouping. (up to 4 digits)
Subtraction	Counting back Find the difference Part whole model Make 10 Column method – no regrouping	Column method with regrouping (up to 3 digits)	Column method with regrouping (up to 4digits)
Multiplication	Doubling Counting in multiples Repeated addition Arrays-showing commutative multiplication	Counting in multiples Repeated addition Arrays-showing commutative multiplication Grid method	Column multiplication (2 and 3 digits multiplied by 1 digit)
Division	Division as grouping Division within arrays	Division within arrays Division with a remainder Short division (2 digits by 1 digit (concrete and pictorial)	Division within arrays Division with a remainder Short division (up to 3 digits by 1 digit- concrete and pictorial)

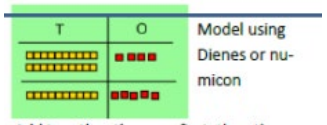
YEAR 3 CONCRETE RESOURCES

Base 10
Dienes
Numicon
Place Value Counters
Place Value Cards
Counting stick



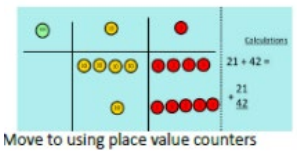
YEAR 3 PICTORIAL REPRESENTATIONS

Part -part whole model
Picture objects
Bar model
Numberline
Place value grid

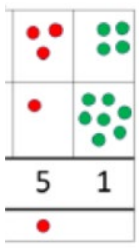


Model using Dienes or numicon

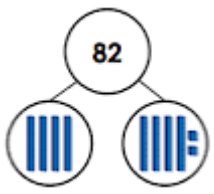
Add together the ones first, then the tens.

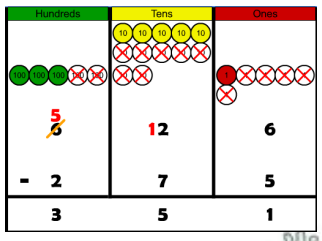


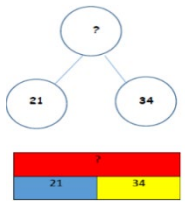
Move to using place value counters



Children can draw a representation of the grid to further support their understanding, carrying the ten **underneath** the line







100	
50	50

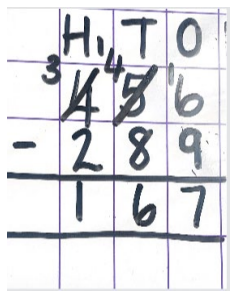
YEAR 3 ABSTRACT CALCULATION REPRESENTATIONS

Count in multiples of a number aloud.
Write sequences with multiples of numbers.

$$\begin{array}{r} 223 \\ +\ 114 \\ \hline 337 \end{array}$$

Add the ones first, then the tens, then the hundreds.

$$\begin{array}{r} 536 \\ +\ 85 \\ \hline 621 \\ 11 \end{array}$$



D11: Chunking Year 3a

18
4 | 72
- 40 (10) x 4
32
- 32 (8) x 4
0

72 ÷ 4 = 18

	T	O
	2	5
X		3
	1	5
+	6	0
	7	5

PUPILS WITH SEND

For pupils who are working significantly below age-related expectations, Sandwell Testing is used. This assesses the child's mathematical age and identifies key concepts which the child is not secure in. These key concepts are then identified on a child's Individual Education Plan and provision is put in place for the child to access the wave 3 intervention required.

CELEBRATING SUCCESS

- Weekly Maths Star of the Week is nominated by the class teacher and awarded by the class Maths Ambassador
- Maths Star of the Week is awarded a certificate and the maths bag of activities to take home and share with their family for one week.
- There is a weekly award for the Year 3 highest earner on Times Table Rockstars.
- An opportunity to win the 'You Rock' trophy for the highest earning class on Times Table Rockstars each week.
- Y3 Maths Ambassador
- Parent/Pupil Workshop in Spring term.

HOME LEARNING & EXTRA-CURRICULAR OPPORTUNITIES

- Low stakes home learning is set weekly. Pupils are provided with a fundamental number facts-based activity, which links to their fluency training lesson and step on the fluency Ladder, and encourages them to practise their fluency skills or number concepts.
- Pupils are expected to complete 15 minutes per day times table practice on either a paper document provided or the TTRS app.
- Key Instant Recall Facts are shared with parents in order for them to support their children with learning these facts at home.
- Year 3 Mathmagician Club every Wednesday.