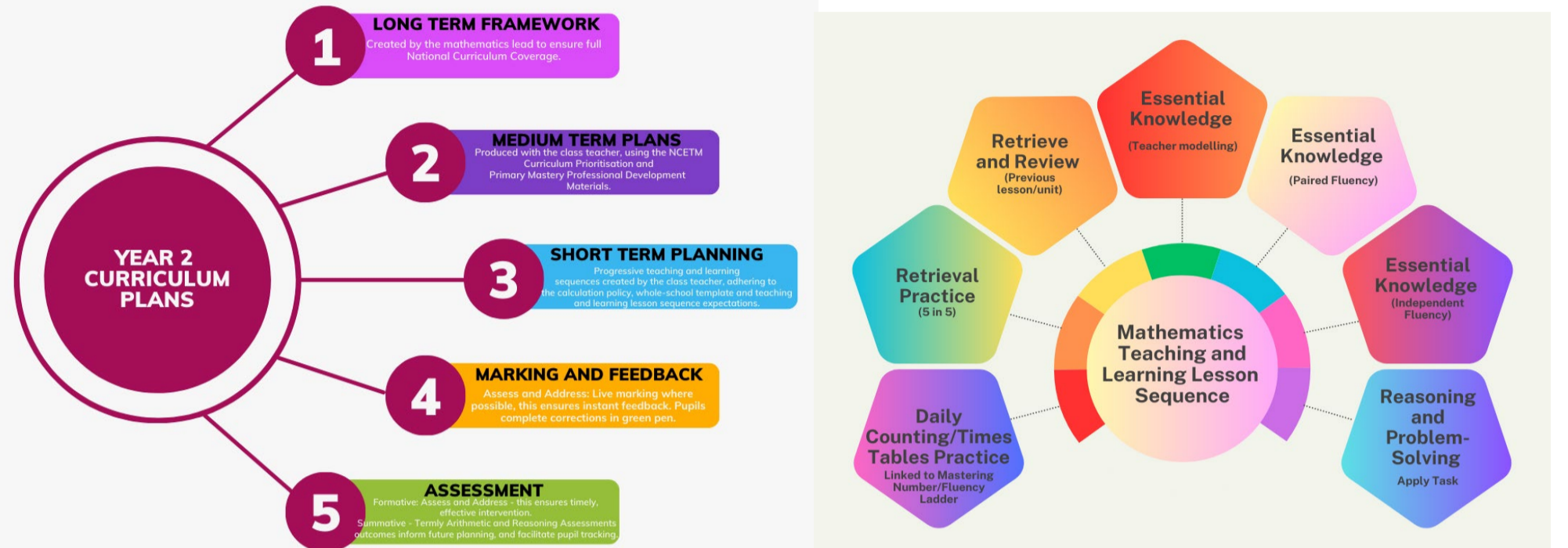


INTENT

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1 (National Curriculum 2014).

IMPLEMENTATION



YEAR 2 ESSENTIAL KNOWLEDGE

YEAR 2 NATIONAL CURRICULUM COVERAGE
LONG TERM FRAMEWORK

Brougham Primary School										
Year 2 Long Term Framework										
14 Week Term (11 weeks of planning before data collection)										
Autumn	Numbers to 100 (1 week)	NCETM Fluently Add and Subtract within 10 (1 week)	NCETM Calculations within 20, including statistics (3 weeks)	NCETM Numbers 10 to 100 (2 weeks)	NCETM Addition and Subtraction of two 2 digit numbers (2 weeks)	NCETM Money (1 week)	NCETM Shape (2 weeks)	Assessment Week (1 week)	Christmas Maths (1 week)	
11 Week Term (9 weeks planning before data collection)										
Spring	NCETM Addition and Subtraction of two 2 digit numbers (2 weeks)		NCETM Introduction to Multiplication (4 weeks)		NCETM Introduction to division structures (2 weeks)		Assessment Week (1 week)	NCETM Fractions (2 weeks)		
13 Week Term (10 weeks planning before data collection)										
Summer	NCETM Time (2 weeks)	NCETM Position and Direction (1 week)	NCETM Sense of measure – volume, capacity, mass (2 weeks)		Assessment Week / SATs (1 week)	NCETM Multiplication and division – doubling, halving, quotative and partitive division (3 weeks)		Statistics (2 weeks)	Addition and Subtraction Inverse (1 week)	NCETM Fractions review (1 week)

YEAR 2 FLUENCY LADDER

Week	learn	Fluency Facts to
39*	Division facts for 5x table: MTC 2,5 and 10 (data to be submitted to next class teacher; must inform Y3 autumn term intervention)	
38*	Division facts for 5x table	
37*	Multiplication facts for 5x table	
36*	Multiplication facts for 5x table	
35*	Counting: Multiples of 5	
34*	Division facts for 10x table	
33*	Division facts for 10x table	
32*	Multiplication facts for 10x table	
31*	Multiplication facts for 10x table	
30*	Counting: Multiples of 10	
29*	Division facts for 2x table	
28*	Division facts for 2x table	
27*	Multiplication facts for 2x table	
26*	Multiplication facts for 2x table	
25*	Counting: Multiples of 2	
24	Composition: Consolidating their recall of bonds of 20	
23	Number facts and arithmetic: Solving subtraction calculations, working within 20	
22	Number facts and arithmetic: Subtraction across the 10 boundary	
21	Number facts and arithmetic: Calculating across 10	
20	Counting, cardinality and ordinality: 100 can be composed of ten 10s	
19	Number facts and arithmetic: Doubles facts to derive 'near doubles'	
18	Number facts and arithmetic: Doubles facts to derive 'near doubles'	
17	Counting, cardinality and ordinality: Ordinal aspect of numbers within 20	
16	Number facts and arithmetic: Doubles facts to derive 'near doubles'	
15	Number facts and arithmetic: Doubles facts to derive 'near doubles'	
14	Number facts and arithmetic: Number bonds within 10 to calculate within 20	
13	Composition: Composition of 20	
12	Number facts and arithmetic: Even numbers and fluency with doubles within 20 (and with their related halves).	
11	Counting, cardinality and ordinality: Ordinal aspect of numbers within 20	
10	Composition: Composition of numbers 11-19	
9	Composition: Composition of 9 and subitise other numbers within 9	
8	Composition: Composition of 7	
7	Composition: Composition of odd numbers	
6	Composition: Recall of the bonds of 10	
5	Composition: Composition of 8	
4	Composition: Composition of 6, and the position of 6 in the linear number system	
3	Composition: Composition of even numbers	
2	Composition: Comparing the numbers of objects in two sets within 10	
1	Composition: Numbers 6, 7, 8 and 9	

YEAR 2 FLUENCY TRAINING

Pupils access short, daily NCETM Mastering Number sessions, in which they are taught to develop and demonstrate fluent number sense.

Lessons seek to build firm mathematical foundations, through the use of intentional teaching strategies focused on developing fluency in calculation and number sense for all children; they use of appropriate manipulatives to support your teaching of mathematical structures.

Once the 24 week programme has been completed, pupils receive a weekly fluency training lesson focussed upon the remaining steps of the ladder. This is followed by 15 minutes daily independent fluency training each day.

YEAR 2 KEY INSTANT RECALL FACTS

+	10	11	12	13	14	15	16	17	18	19	20
10	0+10=10	1+10=11	2+10=12	3+10=13	4+10=14	5+10=15	6+10=16	7+10=17	8+10=18	9+10=19	10+10=20
11	0+11=11	1+11=12	2+11=13	3+11=14	4+11=15	5+11=16	6+11=17	7+11=18	8+11=19	9+11=20	
12	0+12=12	1+12=13	2+12=14	3+12=15	4+12=16	5+12=17	6+12=18	7+12=19	8+12=20		
13	0+13=13	1+13=14	2+13=15	3+13=16	4+13=17	5+13=18	6+13=19	7+13=20			
14	0+14=14	1+14=15	2+14=16	3+14=17	4+14=18	5+14=19	6+14=20		Addition facts of		
15	0+15=15	1+15=16	2+15=17	3+15=18	4+15=19	5+15=20					
16	0+16=16	1+16=17	2+16=18	3+16=19	4+16=20		Adding 10				
17	0+17=17	1+17=18	2+17=19	3+17=20							
18	0+18=18	1+18=19	2+18=20								
19	0+19=19	1+19=20									
20	0+20=20										

12	11	10	9	8	7	6	5	4	3	2	1
12x12=144	11x12=132	10x12=120	9x12=108	8x12=96	7x12=84	6x12=72	5x12=60	4x12=48	3x12=36	2x12=24	1x12=12
		10x10=100	9x10=90	8x10=80	7x10=70	6x10=60	5x10=50	4x10=40	3x10=30	2x10=20	1x10=10
			9x9=81	8x9=72	7x9=63	6x9=54	5x9=45	4x9=36	3x9=27	2x9=18	1x9=9
				8x8=64	7x8=56	6x8=48	5x8=40	4x8=32	3x8=24	2x8=16	1x8=8
					7x7=49	6x7=42	5x7=35	4x7=28	3x7=21	2x7=14	1x7=7
						6x6=36	5x6=30	4x6=24	3x6=18	2x6=12	1x6=6
							5x5=25	4x5=20	3x5=15	2x5=10	1x5=5
								4x4=16	3x4=12	2x4=8	1x4=4
									3x3=9	2x3=6	1x3=3
										2x2=4	1x2=2
											1x1=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 1	Year 2	Year 3
Addition	Combining two parts to make a whole: part-whole model Starting at the bigger number and counting on Regrouping to make 10.	Adding three single digits Partitioning with no regrouping/recombining Column method – no regrouping	Column method – regrouping/renaming (up to 3 digits)
Subtraction	Taking away ones Counting back Find the difference Part Part Whole Model Part whole model Make 10	Counting back Find the difference Part whole model Make 10 Column method – no regrouping	Column method with regrouping (up to 3 digits)
Multiplication	Make, find and see equal groups. Doubling Counting in multiples Repeated addition Arrays- showing commutative multiplication	Doubling Counting in multiples Repeated addition Arrays- showing commutative multiplication	Counting in multiples Repeated addition Arrays-showing commutative multiplication Grid method
Division	Sharing objects equally Division as grouping	Division as grouping Division within arrays	Division within arrays Division with a remainder Short division (2 digits by 1 digit concrete and pictorial)

YEAR 2 CONCRETE RESOURCES

YEAR 2 PICTORIAL REPRESENTATIONS

YEAR 2 ABSTRACT CALCULATION REPRESENTATIONS

- Multilink
- Bead string
- Rekenrek
- Ten Frame
- Base 10
- Dienes
- Numicon
- Place Value Counters
- Place Value Cards
- Counting stick

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

Use part part whole and number line to model.

17 + 5 = 22

16 + 7 = 23

Regroup and draw representation.

13 + ? = 22

Use number line and bridge ten using part whole if necessary.

Associated facts

Draw the Base 10 or place value counters alongside the written calculation to help to show working:

27 + 30 = 57

20 + 5 = 25, 25 + 4 = 29, 29 + 7 = 36

20 + 40 = 60, 5 + 7 = 12, 60 + 12 = 72

Horizontal number sentences, progressing to formal column addition and subtraction.

17 + 5 = 22

Explore related facts

17 + 5 = 22

5 + 17 = 22

22 - 17 = 5

22 - 5 = 17

Partitioned numbers are written vertically:

For 54 - 22

Tens	Ones
50	4
- 20	2

30	+ 2
= 32	

Write addition sentences to describe objects and pictures.

Children can then record this onto an empty number line:

5 + 5 + 5 + 5 + 5 + 5 + 5 = 40

0 5 10 15 20 25 30 35 40

8 x 5 = 40

2 + 2 + 2 = 3 x 2

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 2 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.
- Y2 Maths Ambassador
- Y2 Parent/Pupil Maths Workshop in Summer term.

HOME LEARNING

- Low stakes home learning is set weekly. Pupils are provided with a fundamental number facts-based activity, which links to Mastering Number/the Fluency Ladder and encourages them to practise their fluency skills or number concepts.
- Key Instant Recall Facts are shared with parents in order for them to support their children with learning these facts at home.