



St Michael's CE Aided School

Maths

Progression for number facts and fluency

Progression for teaching number facts at St Michael's

Just learning to read through a carefully planned phonics progression, at St Michael's we understand that developing a solid foundation of number forms the building blocks for understanding the world of maths.

EYFS

The children's mathematical journey and understanding of number start in Reception. The children learn through play, singing, counting and following the NCETM Mastering Number Programme, taught in a daily session.

Number Early Learning Goals

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical Patterns ELG

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.



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Mastering Number: Overview of content – Reception



Strand/ Half-term	Subitising	Cardinality, ordinality and counting	Composition	Comparison
1 Children will:	<ul style="list-style-type: none"> perceptually <u>subitise</u> within 3 identify sub-groups in larger arrangements create their own patterns for numbers within 4 <u>practise</u> using their fingers to represent quantities which they can <u>subitise</u>. <u>experience</u> subitising in a range of contexts, including temporal patterns made by sounds. 	<ul style="list-style-type: none"> relate the counting sequence to cardinality, seeing that the last number spoken gives the number in the entire set have a wide range of opportunities to develop their knowledge of the counting sequence, including through rhyme and song have a wide range of opportunities to develop 1:1 correspondence, including by coordinating movement and counting have opportunities to develop an understanding that anything can be counted, including actions and sounds <u>explore</u> a range of strategies which support accurate counting. 	<ul style="list-style-type: none"> see that all numbers can be made of 1s <u>compose</u> their own collections within 4. 	<ul style="list-style-type: none"> understand that sets can be compared according to a range of attributes, including by their <u>numerosity</u> use the language of comparison, including 'more than' and 'fewer than' <u>compare</u> sets 'just by looking'.
2 Children will:	<ul style="list-style-type: none"> continue from first half-term <u>subitise</u> within 5, perceptually and conceptually, depending on the arrangements. 	<ul style="list-style-type: none"> continue to develop their counting skills explore the cardinality of 5, linking this to dice patterns and 5 fingers on 1 hand begin to count beyond 5 <u>begin</u> to <u>recognise</u> numerals, relating these to quantities they can <u>subitise</u> and count. 	<ul style="list-style-type: none"> explore the concept of 'wholes' and 'parts' by looking at a range of objects that are composed of parts, some of which can be taken apart and some of which cannot <u>explore</u> the composition of numbers within 5. 	<ul style="list-style-type: none"> compare sets using a variety of strategies, including 'just by looking', by subitising and by matching <u>compare</u> sets by matching, seeing that when every object in a set can be matched to one in the other set, they contain the same number and are equal amounts.
3 Children will:	<ul style="list-style-type: none"> increase confidence in subitising by continuing to explore patterns within 5, including structured and random arrangements 	<ul style="list-style-type: none"> continue to develop verbal counting to 20 and beyond continue to develop object counting skills, using a range of strategies to develop accuracy 	<ul style="list-style-type: none"> continue to explore the composition of 5 and <u>practise</u> recalling 'missing' or 'hidden' parts for 5 	<ul style="list-style-type: none"> continue to compare sets using the language of comparison, and play games which involve comparing sets



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	<ul style="list-style-type: none"> explore a range of patterns made by some numbers greater than 5, including structured patterns in which 5 is a clear part experience patterns which show a small group and '1 more' continue to match arrangements to finger patterns. 	<ul style="list-style-type: none"> continue to link counting to cardinality, including using their fingers to represent quantities between 5 and 10 order numbers, linking cardinal and ordinal representations of number. 	<ul style="list-style-type: none"> explore the composition of 6, linking this to familiar patterns, including symmetrical patterns begin to see that numbers within 10 can be composed of '5 and a bit'. 	<ul style="list-style-type: none"> continue to compare sets by matching, identifying when sets are equal explore ways of making unequal sets equal.
4 Children will:	<ul style="list-style-type: none"> explore symmetrical patterns, in which each side is a familiar pattern, linking this to 'doubles'. 	<ul style="list-style-type: none"> continue to consolidate their understanding of cardinality, working with larger numbers within 10 become more familiar with the counting pattern beyond 20. 	<ul style="list-style-type: none"> explore the composition of odd and even numbers, looking at the 'shape' of these numbers begin to link even numbers to doubles begin to explore the composition of numbers within 10. 	<ul style="list-style-type: none"> compare numbers, reasoning about which is more, using both an understanding of the 'howmanyness' of a number, and its position in the number system.
5 Children will:	<ul style="list-style-type: none"> continue to practise increasingly familiar subitising arrangements, including those which expose '1 more' or 'doubles' patterns use subitising skills to enable them to identify when patterns show the same number but in a different arrangement, or when patterns are similar but have a different number subitise structured and unstructured patterns, including those which show numbers within 10, in relation to 5 and 10 be encouraged to identify when it is appropriate to count and when groups can be subitised. 	<ul style="list-style-type: none"> continue to develop verbal counting to 20 and beyond, including counting from different starting numbers continue to develop confidence and accuracy in both verbal and object counting. 	<ul style="list-style-type: none"> explore the composition of 10. 	<ul style="list-style-type: none"> order sets of objects, linking this to their understanding of the ordinal number system.
6	<p>In this half-term, the children will consolidate their understanding of concepts previously taught through working in a variety of contexts and with different numbers.</p>			



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Years 1 and 2– Use the Numbersense progression to ensure the following number facts are secure. This ensures that children are not only taught number facts but are taught the skills calculate.

Addition Grid Facts

+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10
5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10
6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10
7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10
8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10
9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10
10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10

Subtraction Grid Facts

-	0	1	2	3	4	5	6	7	8	9	10
0	0-0										
1	1-0	1-1									
2	2-0	2-1	2-2								
3	3-0	3-1	3-2	3-3							
4	4-0	4-1	4-2	4-3	4-4						
5	5-0	5-1	5-2	5-3	5-4	5-5					
6	6-0	6-1	6-2	6-3	6-4	6-5	6-6				
7	7-0	7-1	7-2	7-3	7-4	7-5	7-6	7-7			
8	8-0	8-1	8-2	8-3	8-4	8-5	8-6	8-7	8-8		
9	9-0	9-1	9-2	9-3	9-4	9-5	9-6	9-7	9-8	9-9	
10	10-0	10-1	10-2	10-3	10-4	10-5	10-6	10-7	10-8	10-9	10-10
11		11-1	11-2	11-3	11-4	11-5	11-6	11-7	11-8	11-9	11-10
12			12-2	12-3	12-4	12-5	12-6	12-7	12-8	12-9	12-10
13				13-3	13-4	13-5	13-6	13-7	13-8	13-9	13-10
14					14-4	14-5	14-6	14-7	14-8	14-9	14-10
15						15-5	15-6	15-7	15-8	15-9	15-10
16							16-6	16-7	16-8	16-9	16-10
17								17-7	17-8	17-9	17-10
18									18-8	18-9	18-10
19										19-9	19-10
20											20-10

Calculation Strategies

One More, One Less

Two More, Two Less: Think Odds and Evens

Number 10 Fact Families

Five and A Bit

Know About Zero

0

Doubles and Near Doubles

Number Neighbours: Spot the Difference

7 Tree 9 Square

Ten and A Bit

Make 10 and Then

Adjusting

Swap It

1 + 6



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Year 1

Year 1 Yearly Overview

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	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Autumn 1	Stage 1 Book 1	Stage 1 Book 2	Stage 1 Book 3	Stage 1	Stage 2 Book 1	Stage 2 Book 2	Stage 2 Book 3
	Subitising 1 - 5	Subitising 6 - 10	Subitising on tens frames	Gap teaching and consolidation	Make and Break 5	Make and Break 4, 3 & 2	Make and Break 10
Autumn 2	Stage 2 Book 4	Stage 2 Book 5	Stage 2 Book 6	Stage 2 Book 7	Stage 2	Stage 2	
	Make and Break 6	Make and Break 7	Make and Break 8	Make and Break 9	Gap teaching and consolidation	Gap teaching and consolidation	
Spring 1	Stage 3 Book 1	Stage 3 Book 1	Stage 3 Book 2	Stage 3 Book 2	Stage 3 Book 3	Stage 3 Book 3	
	One More, One Less	One More, One Less	Two More, Two Less	Two More, Two Less	Number 10 Fact Families	Number 10 Fact Families	
Spring 2	Stage 3 Book 4	Stage 3 Book 4	Stage 3 Book 5	Stage 3 Book 6	Stage 3 Book 6	Stage 3	
	Five and A Bit	Five and A Bit	Know About Zero	Doubles and Near Doubles	Doubles and Near Doubles	Gap teaching and consolidation	
Summer 1	Stage 3 Book 7	Stage 3 Book 7	Stage 3 Book 8	Stage 3 Book 9	Stage 3 Book 9	Stage 3 Book 9	
	Number Neighbours	Number Neighbours	7 Tree & 9 Square	Strategy Selection	Strategy Selection	Strategy Selection	
Summer 2	Stage 4 Book 1	Stage 4 Book 1	Stage 4 Book 1	Stages 3&4	Stages 3&4	Stages 3&4	Stages 3&4
	Ten and A Bit	Ten and A Bit	Ten and A Bit	Gap teaching and consolidation	Gap teaching and consolidation	Gap teaching and consolidation	Gap teaching and consolidation



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Year 2

Year 2 Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	
Autumn 1	Stage 1 & 2 (review)	Stage 3 Books 1 – 3 (review)	Stage 3 Books 4 – 6 (review)	Stage 3 Books 7 & 8 (review)	Stage 3 Book 9 (review)	Stage 4	Stage 3 Stage 4	
	Subitising and partitioning	-One More, One Less -Two More, Two Less -Number 10 Fact families	-Five and A Bit -Know About Zero -Doubles and Near Doubles	-Number Neighbours -7 Tree 9 Square	Strategy Selection	Ten and A Bit	Gap teaching and consolidation	
Autumn 2	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5		
	Make Ten and Then: Addition	Make Ten and Then: Addition	Make Ten and Then: Addition	Make Ten and Then: Subtraction	Make Ten and Then: Subtraction	Make Ten and Then: Subtraction		
Spring 1	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5		
	More Doubles and Near Doubles	More Doubles and Near Doubles	More Doubles and Near Doubles	Adjusting	Adjusting	Adjusting		
Spring 2	Stage 5	Stage 5	Stage 5	Stage 6	Stage 6	Stage 6		
	Strategy Selection	Strategy Selection	Strategy Selection	Calculating with Multiples of 10	Two-Digit Numbers: Calculating with Ones	Two-Digit Numbers: Calculating with Tens		
Summer 1	Stage 6	Stage 6	Teacher decision on use of sessions over period of KS1 SATs					
	Make the Next Ten and Then	Make the Previous Ten and Then						
Summer 2	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5	Stage 5	
	Stage 6	Stage 6	Stage 6	Stage 6	Stage 6	Stage 6	Stage 6	
	Small group gap teaching and consolidation	Whole class gap teaching and consolidation	Small group gap teaching and consolidation	Whole class gap teaching and consolidation	Small group gap teaching and consolidation	Whole class gap teaching and consolidation	Small group gap teaching and consolidation	

In addition to this

- Counting in multiples of 2,5 and 10



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Years 3 and 4 – In Years 3 and 4 the children have a daily fluency session in addition to their daily maths lesson.

Key – the transition from counting in multiples of 2,5 and 10 towards fluency in times tables

Year 3

Term	Fluency focus
1	2s, 5s, 10s – Consolidation and progression towards abstract representation of multiplication facts e.g $2 \times 3 = 6$ Building on experience gained in Years 1 and 2 Introduction of use of TTRockstars Booklet – 3 minutes for 60 questions (3 seconds a question)
2	Explicit teaching of the 3 times table & daily TT Rockstars fluency practice Combine with 2s, 5s, 10s Introduce 4s just before Christmas
3	Explicit teaching of the 4 times table & daily TT Rockstars fluency practice Combine with 2s, 3s, 5s, 10s
4	Explicit teaching of the 8 times table & daily TT Rockstars fluency practice Combine with 2s, 3s, 4s, 5s, 10s
5	Mixed practice for fluency
6	Mixed practice for fluency

Year 4

Term	Fluency focus
1	2s,5s, 10s consolidation practice 3s, 4s consolidation practice 8s consolidation practice Varied games to practice and vary Mixed Practice – daily explicit teach & TT Rockstars fluency practice
2	Explicit teaching of the 6 times table & daily TT Rockstars fluency practice Combine with 2s, 3s, 4s, 5s, 8s, 10s Explicit teach of 11s – Daily fluency practice Explicit teach of the 9s – Teach finger trick and pattern (subtract 1 from the factor and add up to 9) e.g. 6×9 'if we are multiplying by 6, subtract 1 – the answer will start with a 5. What do we add to 5 to make 9? 4. The answer is 54' Assessment and bespoke homework cards
3	Mixed practice 2s,3s,4s,5s,6s,8s,9s,10s,11s Single weeks to target weakest times tables from Autumn assessment and ongoing teacher assessment. Suggested weekly practice 4s, 6s, 8s, 9s
4	Mixed practice 2s,3s,4s,5s,6s,8s,9s,10s,11s Explicit teach of 7s – remind about commutativity 7×7 7×12 key facts Daily practice of 7s Explicit teach of 12s – remind about commutativity 12×12 key fact Daily practice of 12s Introduce use of Maths Frame simulation of Times table Check Use Maths Frame to Assess and create bespoke homework cards for Easter
5	Daily Maths Frame session combined with daily mixed practice using TTRS booklets Target individuals with morning practice Assess 1 off scores – keep record and target individuals with missing facts
6	As above June – National TT check Pass on information to Year 5 teachers about missing facts and those not secure.



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Year 5/6 – Use of 99 club to target those children who are not yet secure on times tables

Progression for this:

- 11 club
- 22 club
- 33 club
- 44 club
- 55 club
- 66 club
- 77 club
- 88 club
- 99 club – fact fluency for times tables
- 99 Division Club
- 99 Fraction Club
- 99 Decimal Club
- 99 Percentage Club
- 99 Mixed Club