At St. Barnabas and St. Paul's, we are guided by our Christian Values and we endeavour to 'Be the best for God you can be.'

Mission Statement:

'Love the Lord your God with all your heart, with all your soul and with all your mind. And love your neighbour as yourself' - Matthew 22:37

Trust:
'Trust in the Lord with all your heart and lean not on your own understanding'
Proverbs 3:5

Compassion:
'Love the Lord your God with all your heart, with all your soul and with all your mind. And love your neighbour as yourself'
Matthew 22:37

Thankfulness:
'Be thankful in all circumstances. This is what God wants from you in your life'
Thessalonians 5:18

Hope:
'But those who hope in the Lord will renew their strength'
Isaiah 40:31

Perseverance:
'I know your deeds, your love and faith, your service and perseverance'
Revelations 2:19

Forgiveness:
'For if you forgive other people when they sin against you, your heavenly father will also forgive you'
Matthew 6:14

Fluency Policy

Date Agreed by Governors: February 2024

1. Intent

St Barnabas and St Paul's recognises the importance of mathematical fluency as it allows learners to understand the relationship between numbers. It means that children understand how to answer questions but also understand why they have reached that answer. This policy identifies when and how mathematical fluency is built into our maths curriculum and the school day.

Aims:

- To ensure consistency and progression in our approach to mathematical fluency
- To ensure that children develop an in depth understanding of number and key facts and are able to use this accurately

2. Roles and Responsibilities:

The subject leader is responsible for:

- Reviewing the policy
- Ensuring that teaching staff are following the policy

Teaching staff are responsible for:

- using the policy as a basis for planning fluency opportunities
- using AFL to identify suitable next steps in fluency for groups of children
- always using suitable resources, models and images to support children's understanding of key facts
- encouraging children to use key facts as a strategy to solve problems

As St Barnabas and St Paul's, we believe children learn better when they are encouraged to engage in meaningful repetition of key mathematical skills. Our dedication to fluency should enable quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.

We aim to provide lots of learning challenges throughout the year which will require our children to develop strategies, reason and become fluent mathematicians who can confidently apply their understanding to a variety of problems and contexts.

Our policy enables our children to benefit from both guided and independent practise and staff to check for pupil understanding whilst engaging pupils in daily / weekly / monthly reviews of concepts previously taught. (Rosenshine's Principles of Instruction -2021)

The National Curriculum recognises the importance of maths fluency. One of the three aims of the new curriculum states that pupils (of all ages, not just primary children) will: become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

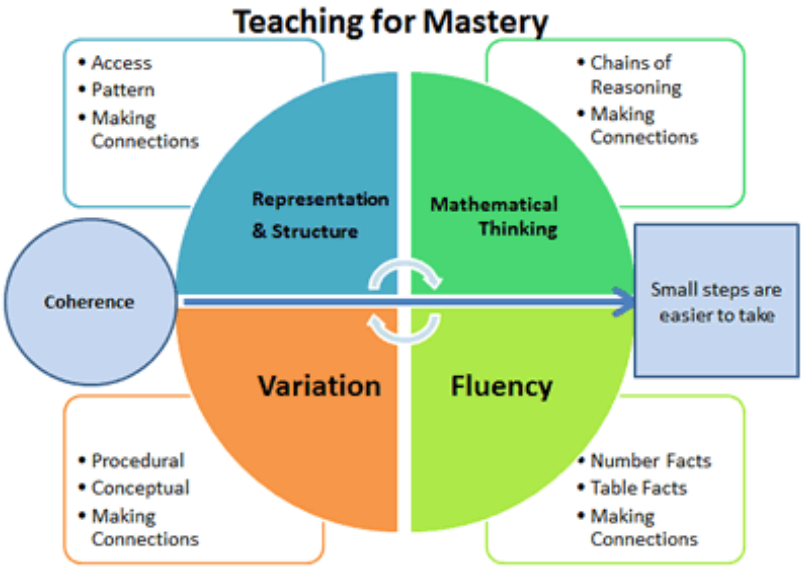
Government guidance sets out mathematical fluency in Key Stage 1 and 2 as:

Factual fluency progression

	Year 1	Year 2	Year 3	Year 4	Year 5
Additive factual fluency	Addition and subtraction within 10.	Addition and subtraction across 10.	Secure and maintain fluency in addition and subtraction within and across 10, through continued practice.		
Multiplicative factual fluency			Recall the 10 and 5 multiplication tables, and corresponding division facts.	Recall the 3, 6 and 9 multiplication tables, and corresponding division facts.	Secure and maintain fluency in all multiplication tables, and corresponding division facts, through continued practice.
			Recall the 2, 4 and 8 multiplication tables, and corresponding division facts.	Recall the 7 multiplication table, and corresponding division facts.	
				Recall the 11 and 12 multiplication tables, and corresponding division facts.	

Fluency involves;

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics



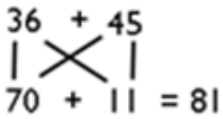
Fluency is one of the 'Five Big Ideas'. These are principles drawn from research evidence that underpin a 'Teaching for Mastery' approach. Fluency goes hand-in hand with the other ideas that lie at the heart of maths mastery pedagogy.

A child who is fluent in key maths facts has the ability to quickly and efficiently recall facts and procedures and has the flexibility to move between different contexts and representations of mathematics.

At St Barnabas and St Paul's there is an emphasis on the importance of developing fluency with mathematical facts. Children are given regular opportunities within and outside of maths lessons to practise basic facts and develop flexibility with these facts, including through the use of homework.

1. **<u>Developing fluency in addition and subtraction facts -</u>** *Why focus on fluency in addition and subtraction facts?*

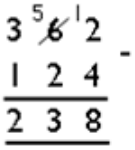
- A defined set of addition and subtraction facts build the basis of all additive calculation, just as times tables are the building blocks for all multiplicative calculation:



Informal/mental addition by partitioning:

Root addition facts

3 + 4, 6 + 5



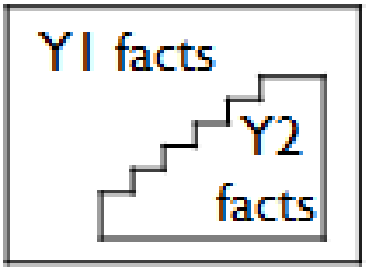
Formal subtraction with column method

Root subtraction facts

12 – 4, 5 – 2, 3 -1

- If children are not fluent in these facts, then when they are solving more complex problems the working memory is taken up by calculating basic facts, and children have less working memory to focus on solving the actual problem so fluency in basic facts allows children to tackle more complex maths more effectively.
- Fluency is one of the 3 aims of the national curriculum, and external tests focus heavily on fluency.
- Children need to be taught strategies to solve these facts. If children aren't explicitly taught to solve e.g. 6+7 by thinking 'double 6 and one more' or to solve 12 – 8 by thinking '2 more and 2 more again' then most children will use inefficient counting-based approaches.

+	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



These are the corresponding subtraction facts:

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

Note that not all subtractions within 20 are root facts, e.g. 17-5 is not considered a root fact (7-5 is the root fact for this).

2. Multiplication and Division

Children at St Barnabas and St Paul's are provided with regular opportunities, both in class and through engaging homework activities, to develop times tables knowledge. This ensures rapid recall of multiplication and division facts.

Through our Maths Scheme of Learning, White Rose Maths, times tables are taught explicitly and practised regularly. The teaching of times tables follows the format below:

Year 2 – 2x, 5x and 10x tables
Year 3 – 3x, 4x and 8x tables
Year 4 – all times tables up to 12x12

The use of times tables booklets also ensures that the children master all facts up to 12x12. These have been created by Maths Hub, a programme coordinated by the NCETM. These booklets are used daily and are small tests focusing on a particular times table. They also include the corresponding division facts. The booklets are started in Year 2 and completed throughout Year 3 and 4. Each year group completes the following booklets in the order stated:

Year 2: 10x, 5x and 2x times tables
Year 3: 10x, 5x, 2x, 4x, 8x and 3x times tables
Year 4: All times tables - 10x, 5x, 2x, 4x, 8x, 3x, 6x, 9x, 7x, 11x, 12x times tables

Times tables songs and 'Times Tables Rock Stars' are used to support the learning of times tables.

Fluency in times tables is reinforced through use of the very popular Times Tables Rock Stars programme. Children have the opportunity to use this at school and are encouraged to use it at home as regular times tables practice. The programme is used in classes in a competitive way and the children find the programme fun, engaging and motivating to use.

<u>Fluency in Action</u>

Fluency at St Barnabas and St Paul's is demonstrated at regular intervals throughout the day, not solely in timetabled maths lessons. It can be seen through the use of different strategies including:

CPA Approach

A CPA (concrete – pictorial – abstract) approach is followed which supports the development of fluency with key concepts. A number of concrete, pictorial and other resources are used to develop the understanding of basic facts and help children to become fluent in basic maths facts. Children may use the following resources to help secure fluency with number facts: stem sentences, Numicon, ten frames, bar models, part-whole models, counters and rekenreks. Children develop their understanding of basic facts using a range of concrete resources, and pictorial and abstract representations. When fluency with a fact develops, children will no longer need resources and will be able to automatically recall that fact. At St Barnabas and St Paul's there is a drive on fluency throughout school.

Mastering Number

Children in Reception, Year 1 and Year 2 are developing their fluency skills through our involvement in the NCETM Mastering Number programme. This project aims to secure the firm foundations in the development of good number sense and the aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. These daily sessions use the CPA approach to develop fluency in number facts as well as seeing the relationship between numbers.

Speaking frames / Stem sentences

At St Barnabas and St Paul's we believe that maths discussion is fundamental to the development and understanding of all aspects of the subject. Children are encouraged to use mathematical language and processes to explain their reasoning. This is achieved by using 'speaking frames' within whole class maths lessons to demonstrate an in depth understanding of a concept. Stem sentences are particularly useful to chorally 'rehearse' a step or fact. This aids the transition from working memory to long-term memory.

Mental Mondays

Each Monday, every class takes part in Mental Mondays to develop number fluency further. The format for this is:

1 week - Mental Arithmetic focus
Teachers teach an aspect of mental arithmetic from our progression grid. This may be something the children have not been taught yet. After this, the children complete a mental arithmetic test which includes an aspect of what has been taught. Teachers then go through the answers with the children, addressing misconceptions. Teachers then identify a key area to focus on the following week.

1 week - Mental Maths focus
Teachers teach a concept of maths that the children may have struggled with during their mental arithmetic session the previous week. After practise, the class then play mental maths games/mental oral games such as Fizz Buzz, around the world, etc.

Home Learning Opportunities and Parental Involvement

Children are provided with a variety of home learning opportunities and are encouraged to still practice number facts whilst at home. This is mainly through Times Tables Rock Stars which the children are expected to participate in at least three times a week.

In order to promote the importance of mathematical fluency to parents, workshops are carefully designed and delivered by the maths leads. The aim of this is to provide parents with key information and resources to use whilst at home.