FLASH LEY COMMUNITY PRIMARY SCHOOL & NURSERY

MATHEMATICS POLICY

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Flash Ley Primary School

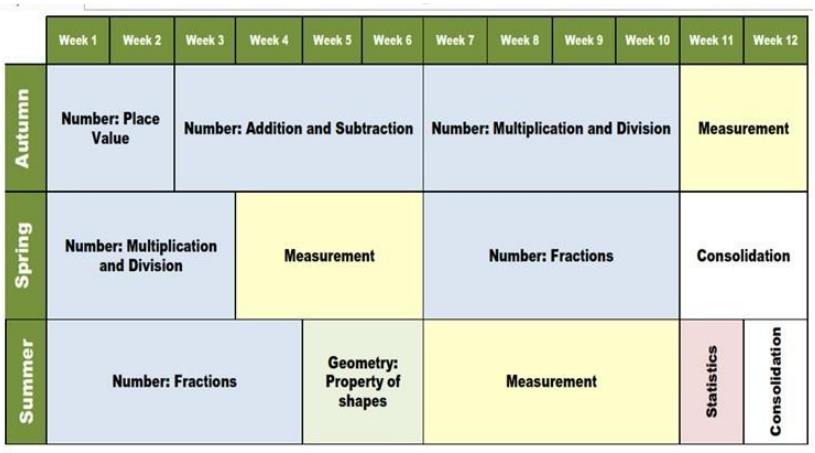
Mathematics Policy

Intention

Our vision is that all children, who attend Flash Ley Primary School, should enjoy and succeed in mathematics, regardless of background because mathematics is essential to everyday life. We believe that it is necessary to equip pupils with a high-quality mathematics education which provides 'foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.'(National Curriculum 2013)

Implementation

At Flash Ley we follow White Rose planning from reception to Year 6. The curriculum is organised to focus around number, place value and calculation during the Autumn term. This ensures that Pupils have good foundations on which to build new learning and enable pupils to make connections and pupils are given the opportunity to 'master maths'. By using previous learning throughout the school year they are able to develop mathematical fluency and conceptual understanding. To avoid teaching procedures we encourage pupils to develop a deep understanding in mathematics through 3 key principles; Conceptual understanding, Language and Communication and Mathematical Thinking. Each unit is then broken down into small steps to incorporate fluency, problems solving and reasoning.



Problem solving and Reasoning

Problem solving and reasoning is at the heart of the curriculum as the essence of everything we do as mathematicians. Problem solving should not be an add-on at the end of a maths lesson or a weekly investigation lesson. We believe that a problem-solving and reasoning approach is the key to mathematical success, and should be used continually throughout lessons to build on depth of understanding.

Learning Characters

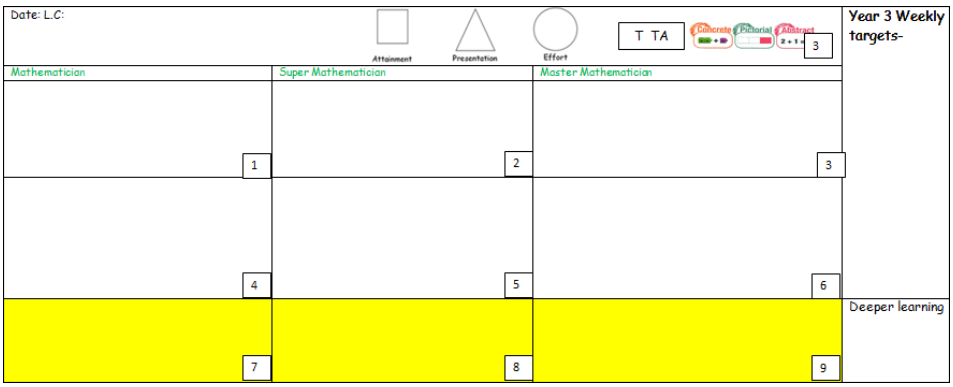
In reception and KS1, children can identify what type of learning they are doing by their learning characters; Fluency Freddy Frog, Problem solving Percy Penguin and Rebecca Reasoning Rabbit.



MYLO's (My Learning Objectives) Templates

In KS2 each child at the beginning of the lesson will stick in the template below showing the learning objectives and learning steps for the lesson. The activities for the lesson are listed in the boxes below the learning objective/steps. Activities should be differentiated in the columns left to right. ALL pupils should have the opportunity for problem solving and reasoning before moving onto the next column, to ensure they have the depth of understanding. At the end of the lessons pupils highlight how they have worked (concrete, pictorial and abstract) and the learning step they have achieved as well as the activities they have completed showing how they have progressed in the lesson.

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Place Value	Find 10 or 100 more or less than a given number.	• Find 10 more and less than the following numbers: 23, 65, 96 146, 192, 374 • What is 100 more or less than these numbers? 283, 591, 1392, 2901, 1892 • Fill in the missing numbers: 10 less / Starting number / 10 more 325 674 892 1001	• Emily has made the number: 3 0 5 Write down the number that is 10 less than 305. Now write down the number that is 10 less than this new number. Explain what is happening to the number each time. • **What comes next?** 536-10=526 526-10=516 516-10=506 • **True or False** When I add 100 to any number, I only need to change the hundreds digit.	• 10 more than my number is 100 less than 320. What is my number? • Using number cards 0-9 can you make the answers to the questions below: 10 less than 8 + 7: 10 more than 3 x 10: 100 less than 336: 100 more than 691: 10 less than 3 x 6: • I think of a number. I add 10 and then take away 100. My answer is 350. What was my number?



Morning Maths

Each morning children arrive to a morning Maths task. In KS1 and lower KS2 the Maths focuses on mental recall and the ability to answer arithmetic questions within 1 minute. In upper KS2, children's questions focus on varied fluency, revising all objectives within the national curriculum.

On a Friday, KS1 and KS2 revise all 4 operations within a 'Big Maths' task.

Maths Meetings

Maths Meetings are a vital part of the Mathematics Mastery programme, used to consolidate key learning for 20-30 minutes 2 times a week outside of the maths lesson. Maths Meetings provide an opportunity to teach and revise 'general knowledge maths' which may not explicitly be covered during the maths lesson, and also allows the daily integration of maths into the surrounding environment. This means that pupils are practicing concepts and skills on a regular basis, meaning they are continually building on their mastery of these concepts.

Pre Teach

Each week a pre teach is carried out based on the objectives due to be taught the following week. This is then used to inform planning to ensure all pupils are having appropriately challenging work to meet individual needs.

Timestables

Timestables are taught through the curriculum in Maths lessons and Maths meetings in KS1 and KS2.
In KS1 children have a paper test on the timestables they are learning weekly. In KS2 children will be tested through TTRockstars weekly.

Cross-Curricular

At Flash Ley we believe that mathematics lessons should be interactive, fast-paced and fun – with all pupils fully engaged therefore we understand the importance of creative freedom when planning lessons. Where links can be made with other areas of the curriculum to enrich experience for pupils they should be.

Calculation (See Calculation Policy)

This policy outlines the different calculation strategies that should be taught and used in Years 1 to 6 in line with requirements of the Primary National Curriculum .

Differentiation

At Flash Ley we stick by the idea that differentiation should not be through accelerating through the curriculum or task modification in the traditional sense (making numbers bigger, providing more questions, making calculations 'harder' etc.). Students should be encouraged to explore and investigate topics in greater depth, so they build a stronger understanding of the main maths concepts within that topic. Differentiation should involve the adaptation of tasks and learning opportunities so that all pupils can access the same material.

KS2 use the MYLOs to differentiate for different abilitlies. (See Mylos above)

Special Educational Needs

Children with SEN are taught within the daily mathematics lesson and are encouraged to take part when and where possible through differentiation, meeting the needs from their IEP's. In some instances this may mean personalised activities and learning.

SMSC

SMSC stands for spiritual, moral, social and cultural development. Through the teaching and learning within the lessons and through extra-curricular activities our Maths teaching actively encourages risk taking which enables students to explore and try new

ideas without the fear of failure. Below are a few examples of where SMSC can be seen within Maths at Flash Ley:

- Pupils are encouraged to challenge their understanding of Mathematics and how it relates to the world around them, exploring patterns in nature and making connections with real life situations.
- Exploring data related to school focus days, e.g. Children in Need/Comic Relief.
- Proving an answer is right or wrong through logical reasoning and exploring questions with numerous possible answers.
- Working in teams/pairs to solve problems and communicate effectively to explain their learning.
- Making connections with other cultures or time periods, e.g. Rangoli patterns, Greek number system, Roman numerals etc.

Impact

The Maths leads are regularly monitoring the impact of Maths through learning walks, book looks, pupil voice and CPD to ensure the teaching of maths is consistent and meeting the needs of our children. Adaptations to policy and procedure will be made in consultation with staff to ensure everyone is on board with the Maths journey.
The success of Maths in Flash Ley 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 and in real life
- Consistent application of calculations for staff, pupils and parents
- A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.
- Addressing staffs' subject needs/requirements to ensure Maths is taught confidently
- Constantly adapting teaching to meet ALL needs of ALL pupils of Flash Ley through close monitoring and timely feedback

Children are assess at the end of each block of work with an end of unit assessment. Misconceptions are then addressed during maths meetings and when children have mastered the skill they then complete a 'show me you now know' task. End of term assessments are completed at 3 points during the year and data formulated to show progress, formulating intervention groups if required.