Our Maths vision

At Bickerstaffe Primary School Mathematics is at the heart of the curriculum as the national curriculum states that 'Mathematics is a creative and highly inter-connected discipline that has been developed over centuries.' We want children to enjoy the challenges and curiosity that maths brings, enabling them to discover mathematical concepts and broaden their knowledge in an exciting and engaging way. Learning the fundamental skills is key and this enables children to make links between different areas of the mathematics curriculum.

Our aim at Bickerstaffe is to equip everyone to live life to its fullness and maths is essential to everyday life and employment. In maths they will develop transferable skills, a range of vocabulary, ability to solve problems, ability to reason and the can do attitude that will help them in the wider world.

During lessons children will have the opportunity for mathematical discussions, questioning concepts and explaining their methods. They will develop fluency with the ability to recall number facts and apply them to concepts and challenges. Children will also explore maths using a range of resources to best equip their individual learning whether it is concrete, pictorial or abstract resources.

We strive to ensure that children have the strongest foundations in maths, learning key skills and developing reasoning skills around the concept. Solving problems will develop confident, resilient and determined learners as well as the enjoyment and sense of achievement children will gain when they solve that problem that has tested them.

Statement of intent and aims:

At Bickerstaffe we intend to equip our children with mathematical skills and strategies that they will use in the wider world by teaching a rich, balanced and progressive curriculum developing reasoning, problem solving and fluent conceptual understanding in each area.

We aim be fluent –
For children to 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.

We aim to be able to reason mathematically – be able to follow a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

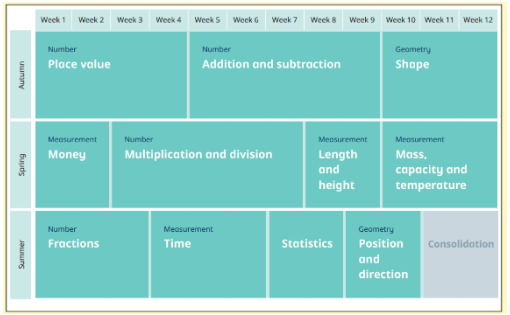
We aim to be problem solving - can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Our intent is –

- To provide the opportunity for children to develop the practical skills and understanding of concepts, facts and operations as outlined in the National Curriculum Programmes of Study for Mathematics.
- To develop children's mental arithmetic skills and their flexible mental methods ready for adult life.
- To encourage the use of mathematical language in order to discuss, explain and express ideas to interpret results.
- To ensure that all children regardless of race, gender, class, culture or disability have equal opportunity to develop their full potential in all areas of the mathematics curriculum. The contribution of all children is to be respected and valued.
- To help all children to experience pleasure, success and enjoyment in mathematical experiences in order to develop a confident and positive attitude towards mathematics.
- To ensure children experience opportunities to achieve economic well-being and understand the importance of mathematics in everyday life.

Long-term Planning:

Throughout EYFS and the Key Stages we follow the White Rose Scheme of work for Mathematics. This approach is inclusive to all children and embeds the mastery approach for maths. White Rose's motto is 'maths everyone can' which as a school we fully believe, we believe that everyone, no matter what their starting point is, can learn and improve at maths and engage in learning. We encourage staff use a bank of wide range of resources to support the needs of their children and support their teaching, this bank includes but is not limited to, White Rose maths, Classroom Secrets, Twinkl. NRich, testbase and NCETM. We follow the White rose maths long term plans which link learning from unit to unit and which ensures clear and constant re-visitation through the year so that learning is embedded.



Medium-term Planning:

White rose maths have developed clear medium term plans for each unit of learning which stipulates what should be taught on a week to week basis. Teachers are expected to use their professional judgement to adjust this according to the needs of the pupis in their class. Included in medium term plans are examples of key learning, STEM sentences and common misconceptions that can be addressed. Where concepts are not embedded, teachers could spend a longer (but appropriate) time on it, . Where concepts are embedded quickly, teachers should move the learning on. Concepts are embedded when pupils are fluent and have the opportunity to apply skills through reasoning and problem solving. White rose maths medium term planning has clear activities that embed fluency, reasoning and problem solving and all topics have end of topic assessments that can help teachers with assessment.

Daily lessons:

White rose maths split each unit into small steps that may be covered in one lesson or over a period of lessons depending on the needs of the children, teachers are trusted to structure lessons based on the needs of the children. However, there is an expectation that stringent AfL is taking place in every lesson in order to suitably challenge and support pupils and move them on when required. AfL strategies should be varied in order to best assess pupils' understanding. Within a lesson, children **must** have the opportunity to reason and problem solve once they are confidently fluent in a concept. During the teacher input, it should be modelled to children how to be fluent, how to reason and how to problem solve. Throughout the school children start each lesson with 'flashback 4' which allows children to revisit and recall skills and key number facts learnt.

Homework:

Homework is provided on a weekly basis and is designed to embed learning, recalling number facts and practicing skills and concepts learnt over the year. Children in Class 3 also have weekly times table homework as well.

SEND:

At our school, we teach maths to all children, whatever their ability. Maths forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our maths teaching, we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Class teachers liaise closely with the SEND coordinator during SEND reviews or when a concern arises. I.E.P's may include, as appropriate, specific targets relating to mathematics. These are taken into account when class teachers are planning for differentiated work. A reason we chose to use the White Rose scheme of learning to support teaching of maths was because it sets high expectations for all children and has the motto 'maths everyone can' no matter their starting point.

CPA approach:

Where applicable, we use a CPA approach to help make the learning more accessible not just for children with SEND but all pupils. Our calculation policy reflects this where clear guidance is given on how to develop knowledge around the four operations using concrete and pictorial resources that then lead onto an abstract understanding. This approach is not however, limited to the four operations and is applied to other areas of learning where appropriate.

Children will embed their learning and build competency through the following approach:

- **Concrete** – children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

- **Pictorial** – alongside this, children should use pictorial representations. These representations can then be used to help reason and solve problems.

- **Abstract** – both concrete and pictorial representations should support children's understanding of abstract methods.

Times Tables Learning:

In order to embed times tables knowledge across the school consistently, we follow a whole school times table half termly planner. Any pupils who are not secured in these will be given interventions to do so. The following table illustrates the order they will be taught.

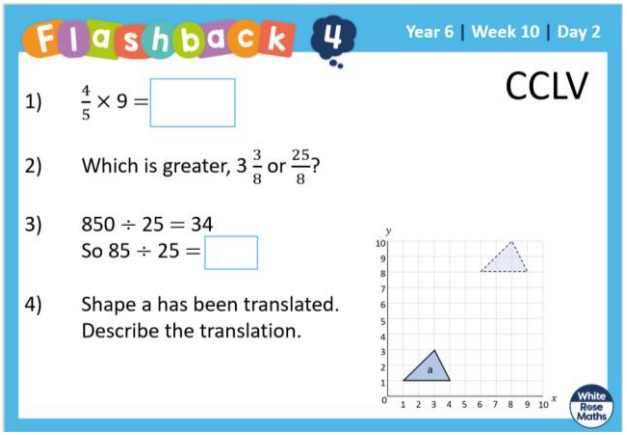
Time Table Rock Stars

In addition to the daily teaching within school, children also have access to Times Tables Rock Stars, which they are encouraged to access at home. Time will also dedicated in school for children to go on this.

There may be points in the year where there are directed and dedicated maths sessions to TTRS where children will have the chance to use the ipads to go onto the site to practice and complete whole class competitions.

Daily teaching of flashback 4

At the start each maths lesson, for five minutes, children will spend time answering 4 questions at the back of their book, the class teacher will then go through these questions with children self-marking them.



Arithmetic

In order for us to support our children learning key recall facts and mental arithmetic skills we dedicate a discrete lesson to this each Friday morning. Children will take part in a range of activities to support learning arithmetic objectives and times table knowledge. Children will also take part in half termly arithmetic tests from testbase and termly assessments from White Rose maths and interventions will be put in place for children who need it.

Monitoring:

The subject leader is involved in the monitoring of maths in a number of ways to ensure that the school policy and the National Curriculum are being implemented correctly both formally and informally. Monitoring takes place in the following ways:

- Learning walks
- Questionnaires of various stakeholders
- Book looks
- Pupil interviews
- Moderation exercises
- Pupil Progress Meeting
- Termly data analysis

The information collected is fed back to staff in a supportive manner. It may be used to inform Governors and other interested parties about Mathematics at Bickerstaffe Primary School and provide information for the School Development Plan.

The impact of the above is to ensure our children have achieved the aims set in this policy and have at least progressed in-line with the expectations for each individual child. The impact will be that every child, regardless of any barriers to learning, will be successful mathematicians at the level they are able.