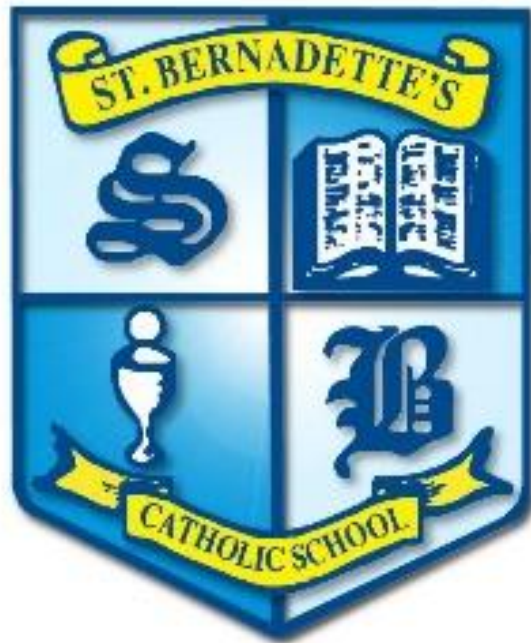


St Bernadette's Catholic Primary School



Mathematics policy 2022 - 2023

Learn to Love, Love to Learn

Intent

Mathematics teaching at our school aims to equip all children with life skills that help them to make sense of our world, give them the ability to solve problems, to reason and think logically, and work systematically and accurately. We want our pupils to experience success, so that they view mathematics with pleasure and confidence. Our curriculum allows children to build upon their prior knowledge, develop their mathematical vocabulary and embed knowledge and skills into their long-term memory. It is accessible and engaging for all pupils and they move through the curriculum at broadly the same pace whilst adopting a lifelong positive relationship with number. With those children who grasp concepts rapidly, rich and sophisticated problems are offered before any acceleration through new content, thus ensuring that depth takes precedence over breadth. We want our children to know that maths is essential to everyday life and instill in them the confidence that they need in order to become confident and resilient mathematicians, who are unafraid to take risks.

Implementation

- Our curriculum follows the 2014 National Curriculum, but is delivered through a blocking approach, which allows the pupils to immerse fully in the concepts being taught.
- Number is at the heart of our mathematics curriculum and a significant amount of time is spent reinforcing number in order to build competency. This enables the children to confidently access the rest of the curriculum.
- By using a variety of planning resources we believe that we provide a bespoke teaching and learning experience that is designed to interest, inform and inspire our children.
- Challenging and enjoyable mathematics lessons are taught daily, where questioning and modelling is placed at the centre.
- Children have the opportunity to develop their automatic recall of key facts through Key Instant Recall Fact (KIRF) starters. This includes recollection of the times tables.
- Children in KSI and EYFS develop their number sense through the Mastery Number Project.
- Concrete, Pictorial and Abstract (CPA) approach is used; enabling all children to experience hands-on learning when exploring new concepts, providing them with the scaffolding required to gain a deeper understanding of the concepts to which they are exposed.
- Flashback activities are incorporated into every lesson allowing teachers to revisit previously taught concepts and address any misconceptions and gaps in knowledge. This daily retrieval practice enables facts and skills to be embedded reducing cognitive load.

Impact

- Our mathematics curriculum supports children in becoming fluent and confident mathematicians.
- Children acquire core mathematical facts and an understanding of mathematical concepts, which they are then able to apply successfully and efficiently.
- Children become proficient at number, which then allows them to access the rest of the curriculum.
- Children demonstrate quick recall of facts and procedures.
- Throughout school children show a high level of pride in the work that they produce.
- Children leave school as confident and resilient mathematicians who are prepared for their future.

THE NATURE OF MATHEMATICS

The National Curriculum lies at the heart of our policy: it is this that we base our medium term planning on. The National Curriculum for Mathematics aims to ensure that all pupils:

- 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.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- 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.

The Curriculum specifies ten strands of mathematics namely:

- Number - number and place value
- Number - addition and subtraction
- Number - multiplication and division
- Number - fractions (including decimals and percentages)
- Ratio and proportion
- Algebra
- Measurement
- Geometry – property of shape
- Geometry – position and direction
- Statistics

ORGANISATION

In Nursery and Reception, children are taught in mixed-ability classes and groups. From Year 1 children are taught in ability sets, so as to enable teaching to be more specifically matched to their needs. There are 3 setting groups in Year 1 and 4 setting groups in each year from Year 2: BA, A-, A+ and AA. (Some year groups operate a parallel setting group which encompasses the A+ and A- sets.) Children are placed in their sets based on their end of year test results, moderated by teacher assessment. However, these setting groups are fluid and informed by teacher judgement as well as formal assessment. This is under constant review and membership depends upon the needs of the child.

To ensure that there is adequate time for developing numeracy skills, each class teacher in Key Stages 1 and 2 will provide a daily lesson for mathematics which should last at least 1 hour and 15 minutes.

PLANNING FOR MATHEMATICS

Individual class teachers will plan systematically for the teaching of mathematics in their classroom with their year band colleagues. The appropriate staged objectives for the set will be followed. Medium term planning shows that objectives are blocked across the year. There is a focus on number, place value and operations and as such these are covered before moving on to other objectives. Medium planning is flexible and allows teachers to ensure pupils have a secure understanding of the objective before they move on. In their weekly planning, staff record objectives for the number fact starter (KIRFs/Mastery Number Project), the flashback starter and the main part of the lesson. Work is differentiated to suit the individual needs of pupils, so that personal qualities such as independence, co-operation and perseverance are developed. New concepts are taught through the concrete, pictorial and abstract approach. All lessons end with a plenary, which is also recorded on the weekly planner. The staged objectives being covered during that week are also stated on the planning. KSI and EYFS are part of a nationwide projects to secure the firm foundations in the development of good number sense. The classes involved in this project will all begin their lessons with a number sense activity from this programme.

PRESENTATION OF WORK

In the Foundation Stage much of the work covered is practical, although there is some formal recording of work.

At Key Stage 1 children will work practically, on sheets and also in exercise books. Work is presented as detailed in the staff handbook. At Key Stage 2, children use 7mm squared books with a side margin and, when required, a centre margin. Work is dated. Where the class teacher deems it necessary, corrections will be done. (See Marking Policy)

All Key Stage 2 children will have the learning objective (Aim) recorded in their books. Towards the end of Key Stage 1 the children will record the lesson objective in their books.

TEACHING AND LEARNING

Teachers will structure their mathematics lessons according to the aims of the lesson and the needs of the pupils. Lessons will engage and challenge pupils, and will maintain a good pace. Teachers will provide concrete, pictorial and abstract work to develop and secure pupils' knowledge. Children are encouraged to reason and explain their thinking in all lessons through questioning and the use of carefully selected activities taken from the NCEM and White Rose (or other available schemes). Children are also regularly exposed to worded problems and taught how to tackle them using Bar Modelling as a tool. Pupils will be expected to use correct mathematical vocabulary and notation.

Teaching Assistants support the teacher in delivering the curriculum, working with small groups of children, often in the lower ability sets.

ASSESSMENT AND RECORD KEEPING

Staff view assessment not as an end product but rather, forming the basis of future action ('Assessment for Learning'). Assessment will be both formal and informal, based on observations and discussion as well as formally administered tests. The assessment of mathematics will be an integral part of teaching, continually providing both 'feedback' and 'feedforward', allowing us to establish what stage the children are at, where they have come from and where their learning should go next.

On entry to Reception, the children's mathematical skills are assessed by using the Standard and Testing agency 'Reception Baseline Assessment' and also additional baseline questions that have been devised internally. The children in Reception are then assessed against the Early Learning Goals at the end of the year. Children in Nursery are assessed using a baseline assessment on entry, alongside teacher judgement.

In KS1 and 2, each block will be assessed using staged objectives. Staff use an excel spreadsheet to record the achievement of each child against the curriculum objective. This allows staff to identify any gaps and to help with providing targeted intervention. Formal assessment takes place termly in Key Stage 1 and 2 using either NTS or Past SAT's papers for Years 2 and 6 (the scores are then centrally recorded). Staff also record when each child is secure with each of the times tables and relevant KIRFs.

The progress of all pupils is tracked throughout the year. This process enables children to be targeted for additional interventions, such as intervention groups and more able groups, and underachievers are identified and more closely supported and monitored.

End of term summative assessments and on-going teacher assessment allow us to assess and monitor pupil's progress and attainment. Assessment opportunities also allow us to review and record the progress children are making over time, in relation to the key objectives and specific individual targets.

Parents will receive a written report on children's progress at the end of the summer term, and will also be informed of their attainment and effort each term. One of the parents' evenings each year will focus on progress in mathematics, when parents will meet the teacher responsible for teaching their child's mathematics set.

SCHEMES

A range of published schemes and other published resources are available to support teachers in delivering the maths curriculum, including, but not limited to White Rose Premium, Hamilton Trust, Classroom Secrets. Power Maths and Abacus text books. Additionally, teachers are encouraged to generate their own resources, where they feel that this is beneficial to teaching and learning. The school are part of the Mastery Number Project, which provides resources and equipment to secure firm foundations in the development of number sense in EYFS and KS1. The school have received funding from the DfE following Lockdown and have purchased the Power Maths scheme which also includes a range of online resources to aid teaching.

MARKING WORK

Teachers mark children's mathematics work according to the school's marking policy. Children are encouraged to try things out without fear of 'getting it wrong'. Comments on pupils' work include praise for accuracy and effort, linked to the lesson objective or a child's personal target. Mathematical pointers towards improved performance are also included where relevant. When possible, work will be marked with the child present allowing a two-way dialogue and immediate feedback – this interaction will then be indicated by a 'v' being written in the child's book. Pupils are also encouraged to mark and report back on their own work, such as mental maths tests, as a diagnostic assessment tool. Self-assessment methods, such as traffic lights, are used to enable children to assess their own understanding against the lesson aim. The older children are encouraged to write self-assessment sentences and set their own targets where appropriate. Time is set aside for children to complete corrections and to read comments made by teachers.

HOMEWORK

Homework is given out weekly using the online platform Seesaw. Homework is designed to check understanding of previously taught skills, to extend their learning, practise basic number facts or to prepare them for future learning. Setting teachers provide the homework for the children on a Friday and this is to be completed by the following Tuesday. In order to further support the completing of homework, laptops are provided for the children who do not have access to technical equipment at home and a weekly homework club takes place at school, during which children have the opportunity to access and complete their homework.

MATHS OPEN WEEK AND OTHER FAMILY MATHEMATIC LINKS

It is important that parents and carers should feel actively involved in their children's mathematical learning as research shows that this improves children's achievement. In order to include parents in their children's mathematical education and best equip them in supporting their child's progress, parents have access to our online Calculation Policy and are invited annually to a welcome meeting where any questions can be addressed. Parents are also invited to Maths Open Morning, where they work with their children on fun, purposeful maths activities that can be extended into the home. Each workshop is planned and delivered by their child's maths teacher.

The school aims to include parents in their children's mathematical education by providing information about maths in annual year band curriculum guides and via the school website. Children's progress and attainment are shared throughout the academic year. The school Calculations Policy leaflet provides parents with guidance regarding the calculation methods which children are taught in school. As mentioned above, demonstrations of these are available on the

school website, which allows parents' to familiarise themselves with these methods so that they feel able to support their children's learning of maths in the home.

EQUAL OPPORTUNITIES

As a staff we will ensure equal opportunities in mathematics and will take into account culture, gender and special needs, in our planning and teaching. We will ensure that we provide flexibility for children to adopt their preferred learning style. The maths coordinator (along with faculty lead) will monitor results and address any differences in gender or culture.

SPECIAL EDUCATIONAL NEEDS AND DISABILITY

Children with Special Educational Needs and Disability (S.E.N.D) in mathematics are supported through a range of initiatives including smaller setting groups; this ensures that they receive a bespoke curriculum that has been tailored to their needs in an environment with a smaller child to adult ratio. Maths targets are also included in Support Plans for those children whom receive additional support from the S.E.N.D department.

INCLUSION AND EAL

Please refer to our school Inclusion and EAL policies to see how we ensure children's needs are met in school.

GIFTED AND TALENTED

Children with giftedness in mathematics (or those who are identified as underachieving but with potential higher ability) are challenged through a range of initiatives including setting, the provision of differentiated work in the classroom, work that requires children to reason and deepen their understanding, to master maths at a greater depth. Where possible, activities/occasions are manufactured so that our gifted children may showcase their talent.

UNDERACHIEVING CHILDREN

These children are identified by analysing school data from termly summative assessments and on-going teacher assessment. Children who are identified as making insufficient progress, relative to their prior attainment, are recognised as underachieving. Possible reasons for this underachievement are analysed, and the children are then targeted through a range of appropriate initiatives and interventions. These interventions may be implemented within the classroom, through targeted teaching by the class teacher or any additional teaching support, and/or through additional intervention groups such as ThirdSpace Learning. Referrals are made to appropriate members of staff, such as the learning mentor, to address other issues that maybe impacting a child's progress for example attendance.

K. Harston

Reviewed : October 2022