Maths Policy

Introduction

At Birkby Infant & Nursery School we believe that all of our pupils should achieve to their full potential: academically, creatively, socially, physically and personally. Mathematics is both a key skill within school, and a life skill to be utilised throughout every person's day to day experiences.

Aims

The National Curriculum sets out year-by-year programmes of study for key stages 1. This ensures continuity and progression in the teaching of mathematics. The aims of the 2014 National Curriculum are for our pupils to:
• become **fluent** in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time so that pipuls develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.

• **Reason mathematically**; by following a line of enquiry, conjecture relationships and generalisations. • Develop an argument, justification and proof by using mathematical language.

• **Problem solve** by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non statutory guidance.

The EYFS Framework in relation to mathematics aims for our pupils to:

• develop and improve their skills in counting

• understand and use numbers

• calculate simple addition and subtraction problems

• describe shapes, spaces, and measures

Intent

We believe mathematics is an important part of children's development throughout school, right from an early age. At Birkby Infant & Nursery School we intend on delivering a curriculum which:

•Allows children to be a part of creative and engaging lessons that will give them a range of opportunities to explore mathematics following a mastery curriculum approach.

• Gives each pupil a chance to BELIEVE in themselves as mathematicians and develop the power of resilience and perseverance when faced with mathematical challenges. Develops capability and confidence in using and applying mathematical knowledge, concepts and skills

•Recognises that mathematics underpins much of our daily lives and therefore is of paramount importance in order that children ASPIRE and become successful in the next stages of their learning

• Develops an ability to solve problems, to reason, to think logically and to work systematically and accurately creativity and motivation to work both independently and in cooperation with others

• Consistently emphasise and develop the use of mathematical vocabulary so children are confident talking about mathematics whereby the children can discuss different strategies, share their ideas and learn from mistakes.

• Makes rich connections (with the use of models and images) across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

• Is in line with the expectations in the National Curriculum 2014.

School Curriculum- Programme of Study

Breadth of study

Careful planning and preparation ensures that throughout the school children engage in:

- practical activities and games using a variety of resources
- problem solving to challenge thinking
- individual, paired, group and whole class learning and discussions
- purposeful practise where time is given to apply their learning

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Foundation Stage

EYFS Statutory Framework

The EYFS Statutory Framework sets out the standards that all early years providers must meet to ensure that children learn and develop wee and are kept healthy and safe. It promotes teaching and learning to ensure children's 'school readiness' and gives children the broad range of knowledge and skills that provide the right foundation for good future progress through school and life.

Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach. Mathematics in the EYFS is initially developed through stories, songs, games and imaginative play. A positive approach to maths around the classroom helps the children to relate mathematics to their everyday lives.

The EYFS environment includes visual images, models and resources to stimulate interest both indoors and in the outside learning environment. Numicon and number blocks play a part in understanding the recognition of umbers and in developing an awareness of the relationship between numbers and amounts.

Mathematics in the EYFS

Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in EYFS. The programme of study for the Foundation stage is set out in the EYFS framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems: and to describe shapes, spaces and measures

Number

Children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.

Shape, space and measures

Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects shapes and use mathematical language to describe them.

Key stage 1

The programmes of study for maths are set out year by year for Key stages 1 and 2 in the national Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domain. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving problems. By the end of each key stage pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Planning

Long term planning: The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in the school. Our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y2.

Medium term planning: We use the long term plans alongside the White rose Schemes of Work as a guide to support medium term plans. We use these plans to ensure that all objectives are covered for each year group and that we are planning to the three key principles to deepen children's understanding. These plans provide teachers with exemplification for maths objectives and are broken down to support a CPA (concrete, pictorial and abstract) and mastery approach to mathematics. They support a practical approach to teaching and learning and have number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. They support pupils working together as a whole group and applying their skills individually.

Short term planning: The above schemes of learning support daily planning. Plans are produced on a weekly basis through discussion in year group meetings. Class teachers are responsible for the relevant provision of their own classes and planning is adjusted to suit needs of a class and individual pupils.

EYFS planning is based on the medium term plans and delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next. Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach.

Teaching and Learning, Content and Sequence

In all lessons, learning objectives and success criteria are discussed. The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics. In the Foundation Stage children are given the opportunity to develop their understanding through a combination of short, formal teaching as well as a range of planned structured play situations, where there is plenty of scope for exploration.

- At the start of each new topic, key vocabulary is introduced and revisited regularly to develop language acquisition, embedding as the topic progresses.

- All lessons begin with a short assessment to support retrieval practice and develop long-term memory.

- Children are taught through clear modelling and have the opportunity to develop their knowledge and understanding of mathematical concepts. The mastery approach incorporates using objects, pictures, words and numbers to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels.

- Children work on the objective at whatever entrance stage they are assessed as being at. Children can ACQUIRE the skill, APPLY the skill or DEEPEN the skill within the lesson.

- Children move through the different stages of their learning at their own pace. Children who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills in a GREATER DEPTH activity. This should be challenging and ensure that children are using more than just one skill to be able to answer the mathematical problems.

• Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking.

• Resources are readily available to assist demonstration of securing a conceptual understanding of the different skills appropriate for each year group.

• Children are encouraged to explore, apply and evaluate their mathematical approach during investigations to develop a deeper understanding when solving different problems / puzzles.

• A love of maths is encouraged throughout school via links with others subjects, applying an ever growing range of skills with growing independence.

• Children with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those children who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.

Lessons involve elements of:

• Instruction – giving information and structuring it well;

• Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays;

• Explaining and illustrating – giving accurate and well-paced explanations;

• Questioning and discussing;

• Application and Consolidation

• Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;

• Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

Assessment

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through;

• regular marking of work

• analysing errors and picking up on misconceptions

• asking questions and listening to answers

• facilitating and listening to discussions

• making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated and edited in light of these assessments. Short term assessments are used to inform the Numeracy Assessment Booklets.

Medium term assessment

Termly assessments are carried out across the school. The results are put onto integris and are intended to give teachers and overview of children's progress.

Pupil Progress meetings are timetabled each term for all classes and are conducted by Mrs Wilson with each class teacher and the appropriate year group leader. Progress of pupils is discussed and appropriate intervention considered and put in place where appropriate. Tracking is used in order to provide interventions.

Long term assesment

At the end of the year children's progress is assessed against the key objectives for the year group.Y2 complete the national tests (SATs) in May.

Inclusion and Equal opportunities

As a school we aim to provide access to a stimulating, broad and balanced curriculum, within a culture of high expectations, where every child matters and barriers are tackled to enable all pupils to feel successful, valued and included, safe and secure. (see inclusion & equal opportunities policy)

We will provide an inclusive curriculum which will meet the needs of all pupils, where the teaching and learning, achievements, attitudes and well being of every learner matters. All children have equal access to the curriculum regardless of gender or background. We incorporate mathematics into a wide range of cross curricular subjects and seek to take advantage of multi cultural aspects of mathematics. A variety of individual work, group/paired work whole class teaching and demonstration are used to ensure the participation and inclusion of all children. Where ability groups are formed, care is taken to ensure decisions are made on grounds of mathematical ability and not fluency in the English language.

Special educational needs & disabilities (SEND)

Class teachers with the support of the SENCO have responsibility for integrating mathematics into a child's individual SEND support plan and ensuring that arrangements are made to accommodate this during mathematics lessons. Classroom support assistants for children with statements/EHCPs should be briefed by the class teacher before lessons and should be aware of their role in supporting a children's mathematical development. Within the daily mathematics lessons teachers also provide appropriate challenges for children who are high achievers in mathematics. (See special educational needs and disability (SEND) policy)

Racial Inclusion

The school is accepting of each person's culture, disability and level of poverty, learning difficulty, challenging behaviour, social class, gender and sexuality. We aim to develop and celebrate inclusion in education and to break down barrier to learning and participation.

Resources

Each class has a range of different resources to use for their mathematics lessons. Other resources that are not used daily or weekly are kept in centrally in the mathematics cupboard.

Marking

Marking of children's work is essential to ensure they make further progress. Work is marked in line with the school marking policy.

Role of the Subject Leader

It is the responsibility of the subject leader to ensure that overall standards for mathematics are good or better.

This involves:

Promoting up to date good practice by leading INSET and/or staff meetings.

Monitoring standards(observations, team teaching, pupil interviews, work scrutiny, moderation, learning walks) with the support of the Headteacher, link governor and members of the SLT

Contributing to whole school planning activities and curriculum development.

Providing support, guidance, coaching and mentoring of staff with the sim of improving their skills, knowledge and understanding of the teaching of mathematics.

Analysing data and tracking and monitoring children's progress in mathematics.

Regularly updating an action plan for subject development across school, in which strengths and developments points are evaluated and areas for further development and indicated.

Ensuring that uo to date knowledge of changes in the curriculum are cascaded to staff.

Ensuring that resources in school match the needs of the children.

Writing or updating policies in mathematics.

Liaising with the named ,member of the schools governing body to provide briefing of the teaching of mathematics in school.

Home school links

At Birkby Infant & Nursery School we encourage parents to be involved by:

Inviting them into school three times a year to discuss the progress of their child

Inviting parents to weekly parents' workshop to [provide them with ways of how they might help their child at home

Sending out half termly topic leaflets outlining the numeracy topics being covered

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Next review date 2023