RATIONALE

At Tickhill Estfeld we believe that Mathematics is a creative and highly interconnected discipline. It is essential to everyday life, critical to science, technology and engineering, and necessary in most forms of employment. A high-quality Mathematics education, therefore, provides a foundation for understanding the world, the ability to reason mathematically and a sense of enjoyment and curiosity about the subject.

Mathematics is a proficiency which involves confidence and competence with numbers and measures. It requires an understanding of the number system, a repertoire of computational skills and an ability to solve number problems in a variety of ways in which information is gathered by counting and measuring and is presented in graphs, diagrams, charts and tables.

Mathematics gives children a way of coming to terms with their environment. Practical tasks and real life problems can be approached from a mathematical point of view. Mathematics provides children with imaginative areas of exploration and study and gives them the materials upon which to exercise their mathematical skills. These skills are a necessary tool of everyday life. Mathematics should help children to develop an appreciation of, and enjoyment in, the subject itself; as well as a realisation of its role in other curriculum areas.

AIMS

At Tickhill Estfeld, we aim to develop lively, enquiring minds encouraging pupils to become self motivated, confident and capable in order to solve problems that will become an integral part of their future. 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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **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.

OBJECTIVES

The objectives covered can be found in National Curriculum 2015.

CURRICULUM

Foundation Stage

The programme of study for the Foundation stage is set out in the EYFS Framework 2012. 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 shape, spaces and measures.

Key Stage 1 and 2

The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated 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.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects and measuring tools). At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly

ENTITLEMENT

Children with SEND support are taught within the daily mathematics lesson and are supported as part of quality first teaching within the class. When additional support staff are available to support groups or individual children they work collaboratively with the class teacher (see Special Educational Needs policy). Within the daily mathematics lesson teachers not only provide activities to support children who find

mathematics difficult, but also activities that provide appropriate challenges for children who are high achievers in mathematics.

Teachers are expected to make regular assessment of each child's progress and to record these systematically. Work is marked quickly and returned to pupils with appropriate comments, either oral or written. Children are assessed against the National Curriculum objectives and teachers will use more formal end of term assessments along with external support for moderation. In Year 2 and Year 6 children are assessed using National Curriculum levels and partake in statutory end of year assessments. Opportunities for teachers to review the schools maths and calculation policies and to share information regarding published materials are given on a regular basis during staff meetings.

It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, but are valuable in promoting children's learning in mathematics. Activities are sent home on a regular basis and may take the form of number games, online activities and tasks with some formal exercises for older children.

HEALTH AND SAFETY

Teachers will assess risks and assure adequate supervision for all activities undertaken within mathematics sessions. Particular attention will be paid when using small mathematics apparatus and scissors/compasses.

ROLE OF CO-ORDINATOR

- Ensure teachers are familiar with the curriculum and help them to plan lessons
- Lead by example in the way they teach in their own classroom
- Prepare, organise and lead INSET, with the support of the Headteacher
- Work co-operatively with the SENDCO
- Observe colleagues from time to time with a view to identifying the support they need
- Attend relevant training to keep up to date
- Discuss regularly with the Headteacher and governors the progress of implementing the curriculum in the school.

Amanda Painter
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