Mathematics Policy

Enjoy Achieve Learn Succeed Share

Totley All Saints CofE Primary School

Believe Aspire Support Grow Care

Revised: Spring 2020

Approved by governors: Summer 2020

Next review date: Summer 2022

Introduction

At Totley All Saints, we aim to provide a caring environment where every child can thrive and is supported to achieve their unique & amazing potential as a child of God. As such, this means that we aim to equip all of our children with a love of learning and an enquiring mind. This is especially true of our mathematics teaching, through which we aim to give children the knowledge and skills they will need for an ever-changing world, in which fluency is maths is fundamental. At Totley All Saints, we place the child & their rights, as written in the UN Convention, at the centre of our school practice. This means that: "All children have the right to an education" (Article 28 UNCRC). The best interests of each and every child are at the forefront of all teaching and learning in mathematics (Article 3 UNCRC).

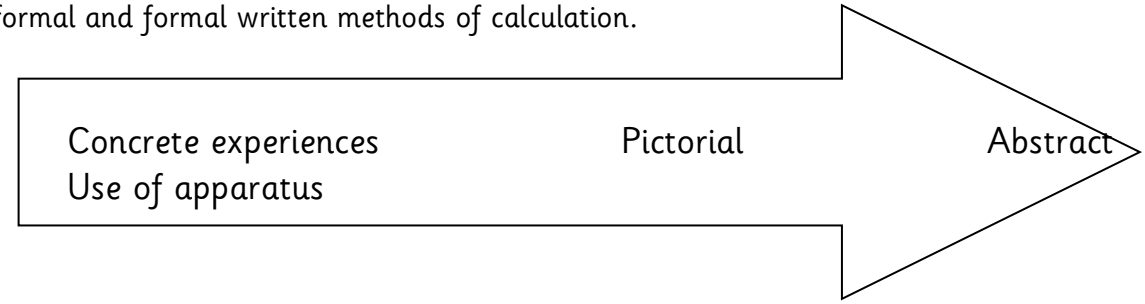
Aims

Our maths curriculum is designed to focus on the mastery and fluency of arithmetic, in-line with national curriculum expectations. Through our maths teaching, we emphasise practice, fluency and fun! It is our aim that all children, regardless of race, ability or religion (Article 2 UNCRC), will:

- become **fluent** in their mental and written calculations, through regular, well-paced, lively and varied practice so that they develop a secure understanding of mathematical concepts together with the ability to recall and apply knowledge effectively,
- **reason mathematically** by investigating concepts and following a line of enquiry, in order to establish relationships and generalisations, develop an argument, and justify or evidence their findings using mathematical language,
- **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing complexity, including breaking problems down into a series of simpler steps and persevering to find a solution.

Teaching & Learning

We plan opportunities for children to learn key facts by heart and understand concepts in a wide variety of contexts, working through increasingly demanding problems, pitched to their own level. We use maths apparatus and practical/investigative approaches in order to provide concrete experiences, before embedding more abstract concepts through the teaching of mental, informal and formal written methods of calculation.



We plan opportunities for children to work with talk partners, maths buddies, independently, and with a teacher or teaching assistant. Children are encouraged to regularly talk about and assess their own learning in maths, and to understand what their next steps will be (Articles 12 and 13 UNCRC). In this way, children understand what they are learning and why, and what they will learn next.

Our maths lessons begin with a mental and oral session, of about 10 minutes, aimed at improving fluency with key facts and knowledge. These are informally and formally assessed on a regular basis, and the objectives for these are shared with parents at the beginning of each term so that children can practise at home alongside their school lessons.

The main objective for the lesson is introduced to the whole class, and followed up with a learning activity. Lesson introductions aim to be lively and interactive with teachers using a variety of multi-sensory approaches in their teaching in order to ensure all learners' styles are catered for. They do this through the use of: interactive flipcharts, games, whiteboard practice, quizzes, songs, actions, and more!

A minimum of 3 differentiated levels of activities are planned for each maths lesson, in order to pitch work at the correct level so that all children are challenged according to their own ability. All children are given the opportunity to develop their problem solving and reasoning skills.

A plenary or mini-plenary is used by teachers to address misconceptions, secure understanding or establish the learning that has taken place in order to plan for the next steps in children's learning.

School Curriculum

We plan using the newly revised National Curriculum's programmes of study for mathematics which are mapped out for each year group from key stages 1 to 2. Within each key stage, teachers have the flexibility to introduce content earlier or later than set out in the programme of study according to individual needs. In addition, teachers can introduce key stage content during an earlier key stage, if appropriate for some pupils. Our school curriculum for mathematics follows the White Rose scheme, and is available to view on-line on our website.

Our Written Calculation Policy details the methods of calculation for each year group, and shows progression from year 1 through to year 6, using efficient methods in order to allow children to progress quickly. These have been shared with parents so that they may practise maths at home with their child/ren, using the same methods learned in school. Learning displays in classrooms reinforce these methods, and maths workshops take place regularly for parents to come and practise the methods we teach in each year group in a relaxed and informal setting.

The role of mental & oral activities

Mental and oral activities take place at the start of every maths lesson to sharpen children's recall and application of key facts, using the principles of the 6Rs (rehearse, recall, refresh, refine, read & reason). Fluency and knowledge are assessed both informally and formally on an on-going and weekly basis.

Equality

We believe strongly at TASS that all children's needs should be catered for within a maths lesson (Article 2 UNCRC), from children with a physical disability or special educational needs (Article 23 UNCRC), to the more able, gifted & talented (Article 29 UNCRC). Children's needs may be accommodated for by; providing additional activities according to ability, varying the contexts in which the concepts can be understood and applied to ensure mastery at a greater depth, varying the complexity of problems to be worked through, or by varying the amount of support given. In some cases, children may work on content from a previous or subsequent year group in order to ensure progress at an appropriate level.

Assessment

Children's understanding and application of maths is assessed regularly within lessons, weeks, units, and across terms, years, and key stages. Assessment makes use of informal observations and both formative and summative judgements. Judgements are made at the end of units of work, and once a term in line with our assessment calendar. These are made against age related expectations or steps, and ages and stages or early learning goals in foundation stage 2. We use the Sheffield Tracking and Assessment Tool assessment foci in years 1-6 with statutory SATs and Interim Teacher Assessment Frameworks at the end of key stages 1 and 2, and the Early Years Foundation Stage Profile in foundation stage 2.

Children regularly use maths learning ladders to assess their own understanding in maths. In every lesson, children write a child friendly learning objective or WALT on their work, next to which they place a smiley, traffic light spot or learning score at the end of the lesson. This encourages them to reflect upon their understanding and indicates to the teacher whether they feel they have mastered the skill, or need further practice or support.

Progress is shared with parents and carers in termly progress booklets and our annual report to parents/carers. Strengths and targets are also shared to enable children to be supported at home. Communication with parents and carers is extremely important to us at TASS and we work hard to ensure that they feel well informed about their child/ren's attainment and progress (Article 5 UNCRC).

Marking & Target Setting

Recorded work may take the format of drawings, photographs, matching exercises, pattern finding, photocopied whiteboards and informal or formal written calculations. All recorded work is marked against the lesson's learning objective, in accordance with school's marking policy. Marking comments and feedback aim to be positive and constructive in order to recognise children's efforts and guide their next steps.

Children are involved in their own target setting and use target assessments, where appropriate, to show their own understanding and confidence levels when revising skills or learning new concepts. This may be done over a week, or a unit of work, depending on the age and ability of the child or class. These are then completed by the teacher using the school marking policy. Targets are communicated to parents as part of the termly progress reports.

Homework

Our curriculum newsletter informs parents of the objectives to be covered each week, including the mental & oral objectives. Recommended weekly maths practice, such as number bonds and multiplication facts is also expected. As children progress through school, additional weekly maths activities are sent home to consolidate learning that has taken place in school.

Information and communication technology (ICT)

Calculators may be used in key stage 2, however, the emphasis is upon written and mental calculation. They are used to support pupils' conceptual understanding and exploration of more complex number problems, when written and mental arithmetic are secure. Interactive whiteboards and IPads are also used to support maths teaching on a regular basis.

Spoken language

With an emphasis on spoken language and the use of mathematical vocabulary in maths lessons, we aim to develop children's ability to reason, explain and justify a mathematical argument. Children are encouraged to explore their thinking to make it clear to themselves as well as others through the use of regular discussion in the form of talking partners, small groups and whole class. Teachers use open questioning to promote higher order thinking so that children make links with prior learning, identify misconceptions and challenge and refine their own understanding of mathematical ideas.

Monitoring & Review

Maths teaching and learning is monitored in school by the senior management team, governors, the maths subject leader and class teachers. Monitoring takes place in the form of staff group 'walk-abouts' to monitor the learning environment and quality of books, display monitoring, planning monitoring, work scrutiny, observations, termly pupil attainment and progress reports and pupil progress meetings.

This policy will be reviewed in 2022, or in line with any curriculum changes should these take place before then.