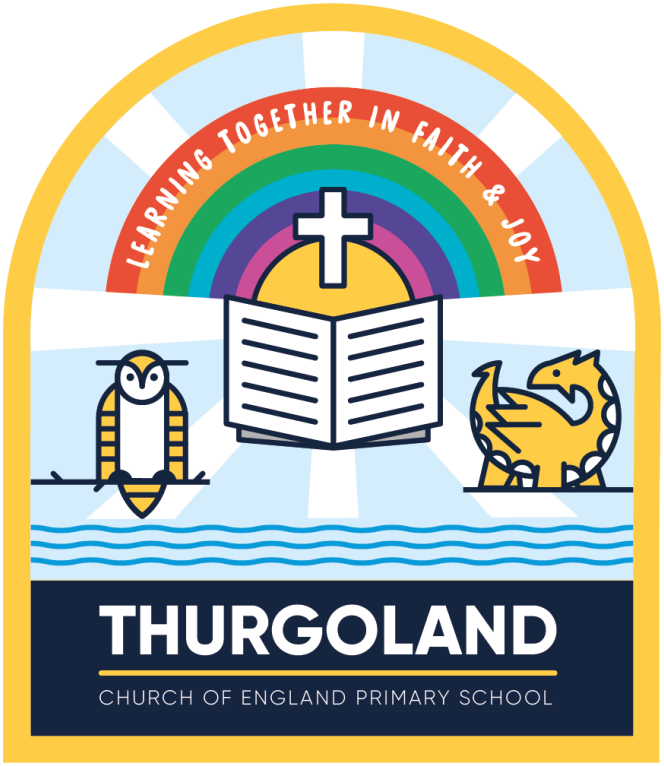
Thurgoland C. E.

Policy for Mathematics



Maths Policy

Mathematical Intent

We designed our mathematics curriculum with the aspiring goal of all pupils aiming high and achieving mastery in mathematics; developing a love of the subject and an ability to connect areas of learning whilst developing their resilience through problem solving; and know that they can achieve in the mathematics whilst at Thurgoland Primary and in the future.

At Thurgoland we intend to:

- Encourage ALL children to believe that they can achieve and aim high in mathematics!
- Show children that mathematics is a tool for everyday life.
- Ensure children are confident mathematicians who are not afraid to take risks.
- Fully develop independent learners with inquisitive minds who have secure mathematical foundations and an interest in self-improvement.
- Provide our children with a variety of mathematical opportunities, which will enable them to demonstrate a deep, conceptual understanding of the topic and be able to build on this over time

Mathematical implementation

- **Long term:** National Curriculum and Development Matters
- **Medium term:** WR Yearly overview and small steps, up-dated annually in response to misconceptions, data and in house monitoring of teaching & learning.
- **Short Term:** Short term planning is supported by the use of the White Rose Maths Hub materials.
- A typical Maths lesson will provide the opportunity for **all** children, regardless of their ability, to:
  1. Activate/revisit prior knowledge during the **Mastering Number (EYFS/KS1)/Fluent in 5(KS2)/Fact Friday**
  2. See how an answer can be formulated when **Learning is Guided** by the teacher
  3. Work through **Varied Fluency** questions
  4. Whole class problem solving and reasoning through guided problem solving
  5. Apply their learning to **Reasoning and Problem Solving** activities daily
  6. **Reflect** on their learning and progress made during the lesson against the objective

- There are multiple representations for all – using a CPA approach (Concrete, pictorial, abstract). Children who struggle to grasp concepts will continue make use of manipulatives to support their learning before transferring their learning to more abstract understanding.
- Objects, pictures, words, numbers and symbols are everywhere.
- Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.
- Work is marked during the lesson (live marking)
- Pupils who grasp concepts rapidly are challenged through sophisticated problems.
- Those pupils who are not sufficiently fluent with earlier material are provided with opportunities to consolidate their understanding, including through pre-teach sessions and Same Day Interventions.
- For children who are significantly below ARE, the use of several interventions this year include: Num Bots, TT rockstars and same day interventions.
- Times Tables Rockstars is used by all children to ensure rapid recall of all multiplication facts and corresponding division facts.

Mastering Number (KS1)

At the start of every Maths lesson in Key Stage One pupils will receive 15-20 minutes of the NCETM Mastering Number program at the start of their Maths lesson. This is designed to build children's understanding of subitising, composition of numbers, number facts and arithmetic. Children will all use a rekenrek to develop their conceptual understanding of number composition through to fluency in number facts.

Fluent in 5 (KS2)

At the start of most lessons, students are set a fluent in five tasks, which consists of prior knowledge for arithmetic, calculations, previously taught topics which the students revisit and revise for 5 minutes at the start of lessons. These tasks are planned and set by Class teachers to be responsive to the needs of the class.

Fact Friday

Each Friday students will revisit discrete mathematical knowledge relevant to topics previously taught in their year group. This provides an opportunity for students to maintain their mental recall of mathematical knowledge to support when problem solving, reasoning and applying contexts to real life situation.

Whole class Arithmetic

To promote our children developing automaticity with their arithmetic, each Friday the Maths lesson will be an arithmetic lesson. During this hour; teachers will plan for and teach any misconceptions/areas of weakness for the class. Children may respond to questions verbally, on whiteboards or in written forms, however there is no expectation for arithmetic to be in books. Fortnightly, all year groups from 1 through to 6 will do an arithmetic check using the Rising stars arithmetic assessments. They will mark their work through self-assessment and scores will be uploaded to insights for tracking. Teacher's will teach any misconceptions of methods during the marking process and give the opportunity for children to practise using the methods.

WISK – *What I should know*

At the start and end of every unit, children will be given a WISK (What I should Know) these are the White Rose unit assessments. At the start of a unit, Teachers will give pupils the previous year group to check for any misconceptions or gaps in prior learning, these will then be addressed before the unit begins. At the end of the unit, a WISK for their year group is given to ensure children have understood the unit and to consolidate any further gaps in learning.

Learning is guided

The teacher models as a scaffolding technique; teachers must consider child's position in the learning process. Modelling allows children to see how an answer can be formulated and provides the opportunity for the CPA approach (concrete, pictorial and abstract) to be demonstrated and embedded into the teaching of the skill. The correlation between thought process and articulation of ideas on paper is a powerful tool. It also allows teachers to question children and get their input. Pre-planned misconceptions may be addressed and the use of success criteria may be used as an additional scaffold. The children then complete guided questions in pairs, groups or as a class. The questions given link to each other and guide the children's thinking. For these questions, concrete materials may be available. The questions may become more abstract but still guide the children to the most efficient method of working.

Varied Fluency

After a concept has been introduced, children will have the opportunity to practice it. This allows the teacher to support those who are not confident and allows other adults in the room to support the children who may need a little extra support. The independent practice questions shouldn't be any more cognitive demanding than the guided questions modelled by the teacher so ensure that the children are familiar with the question types. Once a child has grasped a concept, the idea is that they are exposed to varied fluency activities which develop their understanding showing the questions through concrete,

pictorial and abstract ways. These activities also require them to use verbal reasoning to justify and explain their thinking in order to solve problems in an unfamiliar context. We use resources from WR Maths and Classroom secrets alongside resources we may create ourselves to generate ideas for varied fluency activities.

Reasoning and Problem Solving

All children complete reasoning and problem-solving questions daily. Unfamiliar questions are presented to the children, who have time to discuss the problem and how they would solve it to find the correct answer. The teacher then models the process of finding out the correct answer whilst reasoning out loud. Children are then presented with a 'problem pair' and have to find the solution before trying other examples and are supported with stem sentences to help articulate their response.

Reflect

All children are given the opportunity to reflect on their learning daily at the end of each lesson, this provides the children to reflect on their fluency, problem solving and reasoning tasks and feedback to the teacher on their confidence and personal achievements towards the learning objective for the lesson. The feedback can be given verbal, on Likert scales, using pictorial responses e.g. faces and allows the teacher to identify pupils who may need additional support towards that particular learning objective through the use of a same day intervention.

Same-Day Intervention (SDI)

Those who require additional support will work with an adult and will have an intervention to address their misconceptions. This lasts for approximately 20-30 minutes.

Although this is a typical maths lesson, we know there are times when there needs to be flexibility within the lesson to meet the needs of groups or individual children, for example, mini plenaries throughout the lesson, additional mental and oral sessions, extended main activities, etc.

Maths in the Foundation Stage aims to build basic skills which will be built upon in later years, objectives are taken from Development Matters and exemplary guidance that the LA have produced and mastery/reasoning is taken from year 1 maths hub documents. Areas of provision within the classroom support maths, ensuring children are able to access throughout the day to practise and develop skills being taught. In addition, consistent, daily maths lessons take the form of direct teaching, which is followed up by enhanced activities placed in areas of provision in the classroom which may be accessed independently or supported by an adult.

Planning

- Teachers short term planning will be based on the long-term schemes of work and medium-term plans, which are produced by subject leads and quality assured by SLT.
- The content, order and key knowledge delivered will be mapped out on the long/medium term plans and following these is a non-negotiable.
- Techers are to make pedagogical choices based upon the intent and implementation recommendations from the subject leader.
- Teachers should consider ways to stretch, challenge and support all groups of learners.
- Teachers will use formative and summative assessments and to identify gaps and misconceptions in order to inform their planning to ensure children are making at least good levels of progress.
- If there are significant gaps in a cohort's knowledge, the class teacher will bring this to the attention of the subject leader and review the sequence of learning to meet the needs of the class.
- All short-term planning is to be created by class teachers using Smart Notebook and saved into class planning files under the relevant subject, term and unit.

- All resources are printed prior to the start of the day the lessons are to be taught and teachers make the right choices regarding being as cost effective as possible e.g., printing in black and white, reducing text size, QR codes to display questions on iPads.

Our approach to homework

At Thurgoland our approach to homework is quality not quantity; we believe that children should have the time outside of school to grow and develop in different ways. Here is a little more information about our approach:

- Homework activities will be focused around developing children's basic skills in reading, spelling and number facts. If you would like to spend more time completing homework, we will also set optional creative topic research-based projects each term (see homework grid at the end of this document).
- From time-to-time, children may bring home a piece of work they have missed through absence, or for further reinforcement.
- Homework will be given every Friday to complement work done in class. All homework will be due back on the following Thursday.
- There will be a homework club in school for children who do not have a quiet space to complete activities at home.

Monitoring Teaching and Learning

- Subject leaders will be accountable for completing a yearly subject monitoring document. This document will be saved T:\1. Data Bank\1. Whole School Documents\14. Subject Leader\2023 24
- This will be undertaken by the Subject Leader and overseen and supported by SLT.
- Subject leaders are accountable for the performance and consistency of the teaching in their subject across school.
- Where performance does not meet expectations, subject leaders will support staff to improve performance.
- Subject monitoring should be completed on a regular basis through short informal lesson drop ins (10 minutes), book looks and discussions with class teachers and pupils.
- On a weekly basis, subject leaders are expected to carry out at least one monitoring activity, providing feedback and commentary coaching where necessary and updating the subject monitoring document
- On a termly basis, subject leaders will champion their subjects at a staff meeting to celebrate successes, outcomes and highlight next steps in their subject.
- Subject leaders will be available to discuss with the head teacher, class teachers, parents and termly meet with the link governor to discuss the progress of their subject in the school.

Assessment, Feedback and Record Keeping

- Assessment will be ongoing throughout the school year in line with the school's Assessment Policy.
- Marking should be in line with the school's Marking and Feedback Policy.

Inclusion

- Subject leaders will work alongside SENCO and teachers to ensure that pupils with special educational needs, EHCPs and school focused plans will access the appropriate curriculum and reasonable adjustments will be planned and implemented by class teachers.
- Where applicable children's SEND paperwork will incorporate suitable objectives from the National Curriculum.

- Intervention Groups will take place in order to give further support to children working below national expectations.

Greater Depth Children

- Within lessons teachers provide activities to stretch and challenge children who are more able.

Equalities

- All children at Thurgoland have an equal entitlement to access the curriculum and make progress in order to be their best self.