

SINCLAIR HOUSE SCHOOL
MATHEMATICS POLICY AND PROCEDURES

This policy, which applies to the whole Prep school inclusive of the Early Years Foundation Stage, is in support of the health and safety policy and the individual health and safety assessments. This policy is publicly available on the school's website. On request a copy may be obtained from the school's office.

INTRODUCTION

At Sinclair House School pupils are provided with lively, interactive learning experiences, fostering their enjoyment of, confidence in, and enthusiasm for Mathematics. The priority is to ensure that pupils grasp the fundamentals of the subject, so that they have a solid foundation for building their mathematical skills and knowledge to a high level and can operate effectively in everyday situations and their future working world. Pupils will thus learn number bonds and times-tables and will be taught a variety of methods for calculating mentally. As pupils progress through the years, they will be taught the skills needed for problem solving, algebra and more complex and abstract mathematical reasoning. They will have the opportunity of using the school's ICT facilities in order to enhance their mathematical learning experiences.

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of Mathematics. This is how we teach Mathematics at Sinclair House.

The aims of Mathematics are:

- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to promote confidence and competence with numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to understand the importance of mathematics in everyday life.

We aim to provide for breadth as well as depth of experience and aim to provide experiences that enable children to:

- develop mathematical skills, knowledge and understanding;
- develop an ability to think clearly and logically showing imagination, initiative and flexibility of mind;
- develop an ability to work systematically, independently and co-operatively in appropriate situations;
- develop an ability to think in abstract ways;
- develop an understanding of the relationships in Maths through enquiry, discussion and experiment;
- develop a positive attitude to Maths realising its creative, aesthetic aspects and its relevance to real life situations.

The Mathematics Curriculum and Planning

Mathematics is a core subject in the National Curriculum. The fundamental concepts, knowledge and skills are set out in the framework and include:

- Counting, partitioning and calculating;
- Securing number facts, understanding shape;
- Handling data and measures;
- Calculating, measuring and understanding shape;
- Securing number facts relationships and calculating.

The school uses the Collins 'Busy Ants' Scheme from the Reception Year throughout the school. The Busy Ants Calculation Policy sits alongside this Maths Policy and shows when and how the four operations – addition, subtraction, multiplication and division are taught. This ensures consistency throughout the school and supports the continuity and progression in skill development across the year groups.

The National Curriculum is the basis for implementing the statutory requirements of the programme of study for Mathematics. Supporting the National Curriculum, we embed the Independent Curriculum in order to fully prepare pupils for 11+ examinations.

At Sinclair House School we recognise that each child is unique. We acknowledge that they will all have strengths and, at times, need support as part of their academic enrichment and enhancement. From Year 1, each Maths teacher, with their awareness of each child's abilities and areas requiring support, will create a tailored schedule of work each week. During the week they will assess attainment in each of the subject areas set as they mark each piece of work and it is this that will inform their decisions for the following week's targets (Assessment for Learning). They may choose to reinforce, revisit or enrich particular subject areas depending on the child's progress. They may also feel that a child has grasped a particular concept and can move on.

Key points:

- We carry out the curriculum planning in Mathematics in three phases (long-term, medium-term, and short-term). The National Curriculum and the Independent Curriculum give a detailed outline of what we cover in each year, while our Long Term Plans identify the key objectives that we teach each term.
- Our Medium Term Plans, which are adapted from the Long Term Plans, give details of the main teaching objectives for each term and define what we teach each week. They ensure an appropriate balance and distribution of work across each term.
- It is the class teachers in the Pre Prep and the specialist Maths teachers in KS2 who complete the Short Term Plans for the teaching of Mathematics. These weekly plans list the specific learning objectives and success criteria for each lesson and give details of how the lessons are to be taught. The class teacher keeps these individual plans both in a file in their room, as well as electronically. These plans are evaluated on a daily basis by each teacher.

The Early Years Foundation Stage (EYFS)

Sinclair House School Early Years Foundation Stage follows the Montessori philosophy, methodology and Montessori learning programme together with the document "Development Matters in the Early Years Foundation Stage" to inform planning in the Nursery. The Reception class follows the National Curriculum 2014 in conjunction with the 2017 EYFS Statutory Framework. Our curriculum for the EYFS reflects the areas of learning identified in the Early Learning Goals. Our pupils learning experiences enable them to develop competency and skill across all the learning areas.

We relate the mathematical aspects of the pupils' work to the objectives set out in the EYFS Learning Goals, which underpin the curriculum planning for pupils aged three to five. The EYFS covers mathematical topics through the specific learning area of Mathematics and corresponding learning goals:

- Children count reliably with numbers from one 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 or count on or back to find the answer.
- They solve problems, including doubling, halving and sharing.
- Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.
- They recognise, create and describe patterns.
- They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

In the Nursery, children follow the Montessori sequence of learning materials in the areas of Sensorial and Numeracy. Across the EYFS, each child pursues an individual learning journey, planned daily by the teachers. Spontaneous learning opportunities, both indoor and outdoor, are provided to promote the social skills and developing Mathematical understanding of young pupils through stories, songs, rhymes and finger games, board games, sand and water, construction on a large and small scale, imaginative play, outdoor play and "playground" games, cooking and shopping, two - and three - dimensional creative work with a range of materials, and by observing numbers and patterns in the environment and daily routines.

To appreciate the approach in our Montessori Nursery please observe the pupils in this area of the school and consult the EYFS Policy, the *"Statutory Framework for the Early Years Foundation Stage"* (DfE: April 2017) and our internal document *Montessori Provision EYFS Links*.

Contribution of Mathematics to Teaching in Other Curriculum Areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the Mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter Mathematical vocabulary, graphs and charts when using non-fiction texts.

Information and communication technology (ICT)

Children use and apply Mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate Mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

Personal, Social, Health and Economic Education (PSHEE) and Citizenship

Mathematics contributes to the teaching of PSHEE, and Citizenship. The work that Sinclair House pupils do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do during target time and within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on the spending of money.

Spiritual, Moral, Social and Cultural Development

The teaching of Mathematics supports the social development of our Sinclair House pupils through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our children.

Inclusion

At Sinclair House we teach Mathematics to all children, whatever their ability. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Mathematics teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting weekly individual targets and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. When progress falls significantly outside the expected range, the child may have special educational needs. Pupils with Special Needs in Mathematics encompass:

Those who experience difficulty with number and spatial concepts.

Those who require and relish a challenge above their chronological level in all areas of the subject.

We work individually with these pupils providing extra opportunities for practical and written experience. We liaise with the Enrichment Team who work with the pupils to consolidate class work on a 1-1 basis. Pupils in this category are extended through the use of more complex problems and investigations. Intervention through the graduated approach from the Enrichment Team will lead to the creation of an Individual Learning Plan (ILP). The ILP may include, as appropriate, specific targets relating to Mathematics. We enable pupils to have access to the full range of activities involved in learning Mathematics. Where children are to participate in activities outside the classroom, for example, a maths trail, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

We work individually with these pupils providing extra opportunities for practical and written experience. We liaise with the Enrichment Team who work with the pupils to consolidate class work on a 1-1 basis. Pupils in this category are extended through the use of more complex problems and investigations.

To make mathematics lessons inclusive, teachers need to anticipate what barriers to taking part and/or learning particular activities may pose for pupils with particular SEN and/or disabilities. So, in their planning teachers will take into consideration ways of minimising or reducing those barriers so that all pupils can fully take part and learn.

In some activities, pupils with SEN and/or disabilities will be able to take part in the same way as their peers. In others, some modifications or adjustments will need to be made to include everyone. For some activities, teachers may need to provide a 'parallel' activity for pupils with SEN and/or disabilities, so that they can work towards the same lesson objectives as their peers, but in a different way – e.g. using tactile equipment for work relating to shape, space and measures rather than visual information. Occasionally, pupils with SEN and/or disabilities will have to work on different activities, or towards different objectives, from their peers. It is recognised that literacy problems and poor organisational skills may also necessitate different approaches so that all pupils can access the learning in Mathematics.

Teaching and Learning

At Sinclair House School we aim to maintain and/or stimulate a lasting pupil curiosity, interest and enjoyment in Mathematics. Specific work is not designated for a particular year group since ability varies considerably from child to child. Pupils are set weekly targets in mathematics, alongside opportunities to work in groups for practical experiences. Sinclair House appraises the range of texts that we give our children access to but the hierarchical concepts remain a constant. We are committed to enabling children to progress to levels of attainment matching National Curriculum and Independent Curriculum expectations but taking into account different levels and varying speeds for individuals. In order for pupils to achieve their potential and show maximum progress and fluency in Mathematics, we use a variety of teaching and learning styles and lessons include a proportion of:

- demonstration, explanation and instruction to the whole class, groups and individuals;
- whole class and group discussions;
- practical activities to provide concrete experience and to consolidate skills, developed through effective plenaries;
- Mental Mathematics involving quick recall and mental strategies.
- Working in small groups or individually;
- Developing and emphasising the correct usage of Maths vocabulary;
- Encouraging the explanation of methods and calculations (mastery approach);
- Using practical apparatus throughout the learning process;
- Reinforcing and revisiting topics frequently;
- Short and varied activities;

During the lessons we encourage the pupils to:

- ask questions and to question: how/why.
- demonstrate/explain their own/group methods.

In all classes there are pupils of differing mathematical abilities, we therefore provide appropriate learning opportunities by:

- matching the level of task to ability for both individual and group work.

Schemes of Work

- EYFS Development Matters Framework / EYFS Statutory Framework 2017
- National Curriculum for Years Reception – 6 following Collins 'Busy Ant' Scheme
- Common Entrance preparation will follow ISEB requirements and the Independent Curriculum

Assessment and Recording

At Sinclair House we assess children's work in Mathematics from three aspects (long-term, short-term and medium-term). We make short-term assessments, which we use to help us adjust our weekly targets (Assessment for Learning). These short-term assessments are closely matched to the teaching objectives. We make medium-term assessments to measure progress against the key objectives. We use the class record of the key objectives as the recording format for this.

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments.

Formative Assessment is carried out informally by teachers in the course of a lesson. It is used to:

- guide the progress of the individual.
- identify this progress in each area of the subject.
- determine what has been learnt.
- decide upon the next stage – whether it is a progression or consolidation.

Suitable tasks for assessment will include:

- small group discussions about a practical task.
- short tests in which the teacher questions orally and children record answers.
- specific assignments for individual pupils according to ability.

When assessing pupils, teachers plan carefully to give pupils with SEN and/or disabilities every opportunity to demonstrate what they know and are able to do, using alternative means where necessary.

Calculators

These are used to enable pupils to work on investigative activities or when experimenting with larger numbers (mostly in KS2). They do not take the place of pencil and paper computational/mental activities.

Feedback to pupils

Through effective marking we aim to:

- Be encouraging and supportive;
- Give helpful written comments or oral feedback indicating correct answers, whether targets and learning objectives have been met and next steps identified. This is often done whilst a task is being carried out through 1-1 discussion with the pupil. It is also done through self-assessment and peer assessment appropriate to age, group and topic (see Marking and Assessment Policies- 13(c))
- In KS2 the teacher will meet with each child to reflect and review their report cards and assessment cards

Summative assessment

- In January and June, KS2 will use an internal arithmetic assessment, in line with the Collins scheme of work. Those pupils who excel will also have the opportunity to sit an ISEB sample paper.
- At the end of each week, KS1 and KS2 will use the Collins End of Unit tests.
- Individual assessment results are recorded on the T Drive, under Assessment.
- Children will also sit a PIM (Progress in Maths) GL assessment to give an indication of the progress and standardised scores the children are achieving in the subject

Recording

This is covered by referring to the Key Objectives for each year of the National Curriculum and the Independent Curriculum. Each teacher records the pupil's progress:

- individual assessment records of Key Objectives from Year 1 to Year 5 are passed onto the next teacher.
- results of the formal Summative assessments are stored on the T Drive

Reporting

Reporting to parents includes:

KS1

- Two formal parent's evenings at the end of Autumn and Spring term
- One formal written report at the end of Summer term

KS2

- Parent's evening at the end of Autumn Term, alongside a report card
- Parent's evening at the end of Spring Term, alongside a report card accompanied with an internal assessment results card
- One formal written report at the end of Summer term accompanied with an internal assessment results card

All forms of reporting focus on the pupil's:

- attitude to Mathematics
- competence in basic skills
- ability to apply mathematical knowledge to a range of contexts/problems.
- attitude and standard/presentation of written work.

Homework

This is used to support Mathematics learning through such tasks as:

- the learning of tables (all pupils from Year 2 — Year 6)
- specific tasks set by teachers, which may involve gathering data or completing work started at school.
- regular revision exercises (Years 1 — 6)
- ICT homework (KS1- Education City, KS2 Mathletics)

Differentiation

In line with the above, work should be scaled up or down to enable all pupils to access the curriculum at a level which is appropriate to their needs

Health and Safety Issues

In Mathematics, these include:

- Special care/instruction given to pupils when working with apparatus such as compasses/scissors, even pencils/rulers.

- Close supervision of any weighing/cooking activities, always supervised by 1 or 2 adults depending on group size.

Monitoring and Review

Monitoring of the standards of children’s work and of the quality of teaching in Mathematics is the responsibility of the Mathematics subject co-ordinator. The work of the Mathematics subject co-ordinator also involves supporting colleagues in the teaching of Mathematics, the setting of individual maths targets and being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The Mathematics co-ordinator gives the Principal and Deputy Head feedback to evaluate strengths and weaknesses in the subject and indicates areas for further improvement.

Signed:

Date: 22nd May 2019



Review Date: May 2020

Mrs. Carlotta T.M. O’Sullivan
Principal and Proprietor