Chantry Community Primary School

Mathematics Subject Policy

January 2020

Signed ……..(Chair of Governors) Date ……..

Signed ……..(Headteacher) Date ……..

Mathematics Policy

Aims and objectives

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.

Through mathematics in our school we aim to develop;

- a fascination and enjoyment of mathematics as a subject in which all children can achieve and be successful;
- a vast mathematical vocabulary;
- fluency through intelligent practice, not just mechanical repetition, to give all pupils the ability to delve deeper into maths;
- the children's ability to recall number facts quickly and accurately and apply to both written and mental methods for calculating;
- children's abilities to use and apply mathematics with confidence in everyday situations using mathematical vocabulary;
- children's understanding of key concepts in mathematics through concrete, pictorial and abstract representations;
- an ability for children to communicate their ideas both orally and in written form;
- both independence and teamwork when working, encouraging children to explore ideas and activities in a variety of group settings;
- the confidence of our pupils and their ability to apply their mathematical knowledge and skills in a variety of challenging real life situations;
- children's number sense, logical thinking, reasoning and ability to problem solve as transferable life skills;
- the children's awareness of mathematics as a powerful tool that has applications both inside and outside of the classroom;
- a positive attitude towards mathematics and an awareness of the relevance of mathematics in the real world.

Principles of Teaching and Learning

We adopt a positive approach to mathematics and recognise the importance of motivating the children through the teacher's attitudes, the challenges the children are given and recognitions of their efforts and achievements. Mathematical displays and working walls are also used to support this. Our mathematics curriculum has a strong focus on place value and the four operations for the first two terms; this enables our children to become fluent in these areas as they underpin all other areas of the mathematics curriculum.

Through careful planning and preparation, we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games;

- problem solving;
- individual, talking partner, group and whole class discussions and activities;
- open and closed investigations;
- a range of methods of calculating, both mentally and written
- using ICT as a mathematical tool;
- using and manipulating a wide range of practical apparatus and resources;
- open and closed tasks.

As a school, we follow the small steps from the White Rose Maths Hubs scheme, supported by the Classroom Secrets resources. Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics coordinator.

The approach to the teaching of mathematics within the school is based on four key principles:

- a mathematics lesson at least 4 times per week;
- a clear focus on encouraging children to show their reasoning, including explaining their thinking and develop justifications for answers and decisions;
- an emphasis on mental calculation and arithmetic, particularly knowledge of number bonds and multiplication tables;
- regular opportunities to use and apply the mathematics they have learned, both within maths lessons and across the curriculum.

Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum. At Chantry, we use the White Rose Maths Hubs small steps as the basis for implementing the statutory requirements of the programme of study for mathematics.

We carry out the curriculum planning in mathematics in three phases (long-term/yearly, medium-term/termly and short-term/weekly). The National Curriculum gives an outline of what the children need to know in the long term, while our yearly teaching programme from White Rose Maths Hubs identifies the key objectives (small steps) in mathematics that we teach in each year.

Our medium-term mathematics plans, which are taken from the White Rose Maths Hubs small steps, define what we teach. They ensure an appropriate balance and distribution of work across each unit. These plans are kept and reviewed by the Mathematics Subject Leader and the rest of SLT. They are also put on the school website for parents and carers to access.

It is the class teacher who has the responsibility of the weekly plans for the teaching of mathematics. These weekly plans list a learning objective for the lesson, the small step being covered and any key questions. The class teacher puts plans onto the planning drive on Sharepoint. Teaching assistants also have the plans shared with them on a weekly (Monday briefing) or on a daily basis if there are amendments to the lesson sequence. Included in our weekly planning is a daily mental maths or arithmetic warm-up, where a range of mental strategies are explored each week. In the Autumn term, these focus heavily on key skills including number bonds and multiplication tables knowledge. On weeks where number is not the focused topic a separate number lesson will taught to help maintain fluency in number.

At Chantry the focus for the Autumn term is number as this is now interwoven throughout the Mathematics curriculum and it is important that children have a strong number base to build upon. Incorporated into the number teaching is:

- 4 basic operations;

- place value;
- multiplication tables knowledge.

Although the focus of this term is number – it is still taught in the Spring and Summer terms to ensure fluency is maintained.

Please see Appendix A for our written calculations policy.

Breadth and Balance

The curriculum will include a full range of mathematical activities covering all aspects of the subject:

- Number facts;
- Number (4 main operations);
- Geometry;
- Measure;
- Statistics.

Using and applying mathematics will be integrated throughout the scheme of work as lessons include practical, investigational, problem-solving and oral activities.

Foundation Stage

- Mathematics in the foundation stage
- Developing mathematical thinking and early vocabulary through
- Observation
- Communication
- Listening
- Reading
- Recording
- Manipulating
- Comparing / Classifying
- Estimating / Measuring
- Prediction
- Choosing / Testing
- Drawing conclusions

Inclusion

Through formal and informal assessments, we identify the needs of all children and use appropriate organisational strategies, resources and multi-sensory teaching methods to cater for these needs.

Where applicable, children's IEPs incorporate suitable objectives from the Framework for Mathematics and teachers keep these objectives in mind when planning work. Additional support staff are made available where necessary to support groups or individual children, working collaboratively with the class teacher.

Within the daily mathematics lesson, teachers also provide activities to support and challenge those children who are high achievers in mathematics to help them work in depth. Teachers are encouraged to provide opportunities for the 'most able' children to stretch and deepen their thinking in a variety of ways. Class teachers provide 'Low Threshold High Ceiling Tasks' which are activities that everyone in a group can begin and then work on at their own level of engagement. These tasks have lots of possibilities for the participants to do much more challenging mathematics.

Equal Opportunities

All children, regardless of their race, sex, religious belief or ability will be given equal opportunities to develop their knowledge, skills and understanding of mathematics. We recognise the wide cultural origins of our mathematics and illustrate this in our teaching so that children gain affirmation of their very varied cultural backgrounds. Additionally, mathematics is incorporated into a wide range of cross-curricular subjects and we seek to take advantage of the many multi-cultural aspects of mathematics.

Children with English as an additional language are supported in a variety of ways, including reading of questions, repeating of instructions, opportunities to talk the language of mathematics, mathematical games, etc - see Equal Opportunities Policy and Racial Equality Policy.

Assessment for learning

Assessment for learning underpins all teaching and learning at Chantry, recognising and raising pupils' achievements through appropriate, ambitious targets. Rigorous assessment (in line with the *Assessment for Learning Policy*) gathered from a variety of sources is used to plan inspiring lessons to develop identified learning needs. Assessment is used throughout the lesson to adjust any learning in light of pupils' knowledge.

Parental involvement

We recognise and value the interest, support and involvement of the parents in their children's mathematical development and keep them up to date with any developments in this area. We actively encourage parents to help their children in learning mathematical facts and skills, through formal and informal meetings as well as leaflets and booklets. Home learning is also set to consolidate schoolwork and encourage involvement of parents. All Key Stage 2 children have access to TimesTables Rockstars, Purple Mash and Mathletics from home and home learning for mathematics is set through these platforms in Key Stage 2. The parents have an opportunity at the beginning of each academic year and during parent consultations to learn and discuss how home learning can help their involvement in their child's mathematical development.

Resources

There are a range of resources in every classroom to support the teaching of mathematics across the school. All classrooms have a wide range of mathematic apparatus and resources such as numicon, number rods, bead strings, number lines, place value cards, multiplication wheels and digit cards. Calculators are also available in all classes. All classes are expected to encourage the use of models, images and practical apparatus to support the concrete, pictorial and abstract processes of learning. A range of software is available to support work with the computers. Teachers are expected to model how to use all available resources for the children so that they are confident to use them independently.

Classroom displays

Each classroom should have their own display and working wall. Flipcharts with key learning or print-outs from Lynx should be placed on the working wall to support learning. This should match the topic being taught that week in class. A working wall

should also include an interactive activity for the children to be involved with, key questions and mathematical vocabulary.

Roles and Responsibilities

Maths subject leaders will be expected to:

- teach demonstration lessons;
- ensure teachers and trainee teachers are familiar with the planning process and support them to plan lessons;
- lead by example in the way they plan, teach and assess in their own classroom;
- prepare, organise and lead INSET, with support of the head teacher;
- support the head teacher in carrying out the audit and setting targets for the future;
- work co-operatively with the SENCO in providing advice and support for staff;
- monitor, track and evaluate standards in maths across the school;
- analyse results to identify weak areas of teaching and learning;
- support staff in making provision for all pupils, considering use of resources and allocation of time;
- monitor and observe colleagues teaching and plans from time to time, with a view to identifying the support they need;
- monitor children's use of online resources such as Times Tables Rockstars and Mathletics;
- attend cluster meetings provided by LEA Mathematics consultants;
- provide information for parents in the form of booklets/leaflets and meetings;
- discuss regularly with the head teacher, phase leaders and Governors Achievement Committee the progress of mathematics;
- lead parent/children maths events;
- update the policy and guidelines.