

Maths Policy for Hillside Community First School

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| Adopted date: | Autumn 2017 |
| Signature of Headteacher: | Jeremy Harrison |
| Signature of Governing body: | Ben Mason |
| Next review date | Autumn 2020 |

Hillside Community First School
Working together to promote life-long learning for all.

Mathematics policy

There are four main purposes to this policy:

- To establish an entitlement for all pupils;
- To establish expectations for teachers of this subject;
- To promote continuity and coherence across the school;
- To state the school's approaches to this subject in order to promote public, and particularly parents' and carers', understanding of the curriculum.

Rationale

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills, and the ability to think in abstract ways. Mathematics is important in everyday life, many forms of employment, science and technology, medicine, the economy, the environment, and in public decision-making. Different cultures have contributed to the development and applications of mathematics. Today the subject transcends cultural boundaries and its importance is universally recognised. Mathematics is a creative discipline. It can stimulate moments of pleasure and wonder when a pupil solves a problem for the first time, discovers a more elegant solution to that problem, or suddenly sees hidden connections.

Aims

The overarching aim of the Maths National Curriculum is to equip pupils with high standards of numeracy and to develop their love of number, calculation and logical problem solving.

At Hillside we aim to:

- provide a relevant, challenging and enjoyable curriculum for all pupils;
- promote mathematics as an essential element of communication, which allows pupils to describe, illustrate, interpret, predict, reason and explain;
- provoke an appreciation of the relationships in mathematics; that mathematics is not an arbitrary collection of disconnected items;
- show pupils the fascination of mathematics and promote ways of doing mathematics which harness their imagination, initiative and flexibility of mind;
- develop pupils' logical problem-solving skills and their ability to reason, problem solve and apply their learning.
- build pupils' confidence by creating an "I can do this" ethos in the classroom, where everyone believes in the power of 'yet': I can't do this yet, but I am getting better;
- encourage pupils to work systematically and to show a respect for accuracy and meaning;
- encourage pupils to work independently and collaboratively with others.
- provide opportunities for pupils to develop and consolidate their depth of learning in maths.

Approaches to Teaching and Learning

Lessons may follow various formats depending on topic or aim, however we aim to provide all pupils with some direct teaching every day, which is oral, interactive and stimulating. A typical lesson is structured along the following lines:

- oral work and mental calculation (about 5 to 10 minutes) focusing on whole-class work to rehearse, sharpen and develop mental and oral skills. This may happen at the start of the maths lesson, or at a separate time of day, for example as a 'Going Mental' quick-session at the beginning of the afternoon.
- the main teaching activity (about 30 to 40 minutes) which comprises of a significant amount of direct teaching and pupils' activities involving work with the whole class, groups, pairs or individuals as appropriate;
- a plenary (about 5 to 10 minutes) to work with the whole class to sort out misunderstandings, identify progress, summarise key facts and ideas, make links to other work, discuss next steps and set learning challenges to do at home.

Teaching styles and lesson structure provide opportunities for pupils to consolidate their previous learning, use and apply their knowledge, understanding and skills, pose and ask questions, investigate mathematical ideas, reflect on their own learning and make links with other work.

Our approach to teaching is based on four key principles: a dedicated mathematics' lesson every day; direct teaching and interactive oral work; an emphasis on mental calculation and number fluency; and a broad variety of quality activities, which aims to engage all pupils. All pupils begin with a straightforward fluency activity, moving on when they are ready to deeper learning involving reasoning and problem-solving challenges. Some lessons will be entirely based on fluency or deeper learning, but most will follow a progression from fluency to deeper-learning activities.

As much time as possible is spent in each lesson in direct teaching and questioning of the whole class, groups or individuals. There is an appropriate range of elements in the teaching, namely directing, instructing, demonstrating, explaining and illustrating, questioning and discussing, consolidating, evaluating responses and summarising. Pupils are encouraged to make decisions, communicate their understanding to others and to reason. Teachers aim to create an environment where pupils are secure and feel confident in being able to take risks in their learning.

Teachers are responsible for planning and teaching all elements of the mathematics' curriculum to their pupils. The mathematics' subject leader provides support and guidance to all teachers.

Teachers are regularly supported by teaching assistants, whose work is directed by the teacher. In general, their role is to help the pupils they work with derive as much benefit and make as much progress in lessons as possible. They take part in staff development and have regular discussions with teachers about the purpose of activities and the progress that pupils they work with make. They may contribute to planning, assessment and evaluation.

Equal Opportunities and Inclusion

All pupils, regardless of race, gender, ability, culture or disability are entitled to a broad and enriching mathematics curriculum which caters for their individual needs. Activities are planned in such a way as to encourage full and active participation by all children, irrespective of ability, ethnicity, gender, disability or background (for further information refer to relevant school policies). All children are encouraged to do their best and all efforts and achievements are praised. Work is differentiated to enable pupils to progress at their own level by the use of pre-teaching, extra scaffolding, guided group-work and informal keep-up intervention sessions during the day. Children with learning and behavioural difficulties are supported either by the SENCO, outside agencies or by trained teaching assistants. In addition, other initiatives such as intervention groups like "First Class at Number" and small group mental calculation skills sessions are implemented where necessary. Children are identified as having specialist learning needs are taught either individually, in pairs or small groups by the SENCO, the inclusion leader or other trained TAs.

Resources

A range of display materials and resources are available for pupils to use in every class room. These may include: number tracks; a long number line; digit cards; place value or arrow cards; 100 squares; sets of shapes; clocks; squared paper of different sizes; numicon, dienes, place-value counters and dice.

Small apparatus, e.g. counters, interlocking cubes, pegs and pegboard, straws, rulers, coins, dominoes, dice, base 10 equipment, calculators (when needed), measuring equipment and some mathematical software to support whole-class teaching of mathematical concepts, is also provided as appropriate.

Classrooms are stimulating learning environments. Displays contain support materials for pupils and also problems to stimulate imagination and pupils' work to celebrate achievement.

Parental and Governor Links

We value our strong links with parents and governors and encourage their active involvement in our children's learning. A maths-based home-learning activity, designed to consolidate and develop work done in lessons, is set every week, usually mental-practice activities to encourage fluency. These tasks are varied, interesting and fun. They must motivate and stimulate pupils' learning and encourage good study skills. Activities may include: number games or puzzles; number facts to learn by heart; collecting data or taking measurements; problems to think through and discuss how to solve.

The role of parents is very important and school seeks to support the education partnership between home and school. Parents may become involved in the following ways:

- attending workshops, open days and open evenings so that national expectations, the mathematics curriculum and our approach to teaching can be explained;
- invitations for parents to help in classrooms;
- regular opportunities for parents to have confidential discussions about their child's progress with the teacher;
- prominent displays around the school which promote the subject and explain how it is taught;
- through work sent home which might require parents to work with or help their child;

Recording and Assessment

Assessment and recording are undertaken at three levels: short-term, medium-term and long-term.

Short-term assessments

Teachers keep their own informal records of those pupils whose progress is markedly different from that which is expected. These informal records are notes of anything which surprises them, either in terms of a lack of understanding or exceptionally good progress. These observations are supplemented by short, informal tests focusing on rapid recall of mental calculation skills, which are often followed immediately by marking and discussion with the whole class.

Medium-term assessments

Each unit of work is evaluated using information arising from short-term assessment and medium-term assessments. Teachers assess the extent to which pupils have met the objectives, including where pupils have responded but the objective needs more attention or where objectives were not covered, or pupils did not achieve them.

Several times every term, assessment activities are planned which involve a range of ideas and skills linked to one or more of the key objectives covered previously. Assessments are made as a result of this work. Teachers provide constructive written or oral feedback on any written work produced as soon as possible after the assessment activity in order to help pupils to appraise their own performance and focus on what they need to do to improve.

As a result of these assessments, individual targets are set and discussed with pupils. Parents are kept informed about these at parents' evenings and in pupils' written reports.

Short and medium-term assessments are designed to be largely formative.

Long-term assessments

These are undertaken through a combination of teacher assessment and end of year tests. The tests used are the national tests at the end of Year 2 and the optional tests for Years 3, and 4.

Summative teacher assessments are made in relation to each child at the end of each year. In order to moderate judgements teachers in each key stage examine samples of pupils' work, representing a range of ability, from each class and each year group.

At the end of each year, teachers use their informal records (from short-term assessment), their class record of key objectives (from medium-term assessment) and their highlighted termly plans to support them in writing annual report to parents.

Teachers' records are transferred to the next teacher (including information about objectives achieved highlighted on pupil-tracker), together with pupils' most recent written work. Each teacher has time allocated to discuss each pupil's attainment and progress with their existing teacher at the end of the term before pupils move class.