Parkside Community Primary School

Maths Policy

Date: September 2020

Review date: September 2021

Addendum: January 2021

Rationale

We share the belief that Mathematics is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

COVID 19 Lockdown

Due to unprecedented times during the Current Covid-19 Pandemic, our children at Parkside have missed out on a considerable amount of learning across the curriculum. Although online learning was available throughout lockdown, we understand that this does not replace high quality teaching and learning in mathematics. In order for the children 'keep up' as well as 'catch up', we have introduced the following:

The emphasis in the first instance will be on reactivating learning to prepare pupils for the learning to come. In line with Herts for Learning advise that teachers will not carry out summative assessments when pupils return to school. They are unlikely to give you a true reflection of learning; some pupils may not be emotionally ready and learning may be stored in long term memory and be difficult for pupils to recall immediately. We will follow a **Reactivate – Assess – Teach – Rehearse cycle.** This means that teachers will intentionally reactivate prior learning and start to assess this formatively. Learning experiences which are hidden deep in long term memories, don't need to be re-taught explicitly, but they do need to be nudged back into the working memory.

Back on Track

As an SLT, we made the decision to buy into the HfL Back on Track Mathematics packages to support teachers to prepare for the effective delivery of the curriculum upon wider school opening. They ensure that key learning is prioritised, breadth is maintained and learning sequences reactivated as well as addressing missed and insecure learning before new content is taught. Each teachers' suite explores six key focuses: The current situation;the long term overviews; How to get started in September; How to prepare for teaching a priority; How to plan to teach a priority.

Use precise formative assessment to inform teaching plans

Assessment will be essential to support teachers to identify particular areas where pupils have forgotten or misunderstood key concepts and initially this will be formative and highly focused. Teachers are clear about why they are using a particular prompt or activity and what they are looking for in the response supported by a secure understanding of the curriculum progression and likely misconceptions.

Enable responsive teaching

Teachers will be as responsive as possible to the needs of their pupils. This requires deep subject knowledge and effective deployment of assessment for learning strategies. HfL have put in place clear guidance within documents and digital training by year group to support teachers to both deepen their understanding of curriculum progression and to reactivate and practise their assessment strategies – considering how they can be flexible and how they can make effective choices. As subject lead, it is imperative that teachers are enabled to be as flexible and responsive as possible. This includes considering choices around what needs to be further embedded and rehearsed after teaching to secure understanding.

Assessment milestones

Summative assessments can be helpful to support teacher understanding of learning over time and after a period of reactivation and teaching, these can be used. HfL have revised diagnostic assessments so that they can be used after teaching particular priorities. It is important that teachers have a sense of the milestones that pupils need to reach over time and that these match what is being taught. The DFE guidance for statutory assessments states that "all existing statutory Key Stage 1 and 2 assessments should return in 2020 to 2021 in accordance with their usual timetables."[2] This has been planned for within Priorities and Pathways documents and all end of year statements have been drawn upon before the usual timetable for submitting Y2 teacher assessment and KS2 SATs. In

addition, the Year 4 Multiplication Tables Check is a key focus area within LKS2 and is reactivated significantly in UKS2.

The aims of the 2014 National Curriculum are for our pupils to:
•Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
•Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
•Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
•Develop an argument, justification and proof by using mathematical language.
•Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2 and EYFS (Early Year and Foundation Stage) Statutory Framework 2014 sets out the ELG (early learning goals) for Reception and Nursery. This ensures continuity and progression in the teaching of mathematics.

The EYFS Framework in relation to mathematics aims for our pupils to:
•Develop and improve their skills in counting.
•Understand and use numbers.
•Calculate simple addition and subtraction problems.
•Describe shapes, spaces, and measures.

The purpose of mathematics in our school is to develop:
•Positive attitudes towards the subject and awareness of the relevance of mathematics in the real world.
•Competence and confidence in using and applying mathematical knowledge, concepts and skills.
•An ability to solve problems, to reason, to think logically and to work systematically and accurately.
•Initiative and motivation to work both independently and in cooperation with others.
•Confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes.
•An ability to use and apply mathematics across the curriculum and in real life.
•An understanding of mathematics through a process of enquiry and investigation.

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and appropriate resources to maximise teaching & learning.

Breadth of study
Careful planning and preparation ensures that throughout the school children engage in:
•Practical activities and games using a variety of resources.
•Problem solving to challenge thinking.
•Individual, paired, group and whole class learning and discussions.
•Purposeful practise where time is given to apply their learning.
•Open and closed tasks.
•A range of methods of calculating e.g. mental, pencil & paper and using a calculator.
•Working with computers as a mathematical tool.

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Teachers planning and organisation:

<u>Long term planning:</u>
The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in the school.

Medium term planning

Years 1-6 use the Herts Essential MATHS termly overview to indicate the areas of curriculum that will be covered within each half term. EYFS are using the new Essential Counting documents to guide their medium term planning and map out the curriculum across the half terms.

Essential Maths provides the teachers with exemplification for maths objectives with the emphasis on fluency, reasoning and problem solving. In addition the planning outlines how the CPA (concrete/pictorial/abstract) approach is integral to each concept. The scheme supports the teachers to pitch correctly towards achieving ARE (age related expectations) across the years groups.

To support mastery, reasoning and greater depth, teachers are encouraged to use additional resources such as White Rose and NCTEM (National Centre for Teaching of Excellence in Mathematics). These resources develop mastery teaching and learning and have the understanding of number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. Furthermore, these resources support pupils working together as a whole group and provide plenty of time to build reasoning and problem solving elements into the curriculum.

Short term planning

The above schemes of learning support daily lesson planning. Lessons are planned using a common planning format and are monitored at intervals by the mathematics subject leader. EYFS planning is carried out weekly using the Essential Counting as a guide to support their delivery. In addition EYFS practitioners combine the children's interests and next steps to develop their planning. All classes in KS1 and KS2 have a daily mathematics lesson consisting of an hour. In EYFS there is approximately 40 minutes daily mathematics input and CIL (child initiated learning). EYFS teachers ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom.

Special educational needs & disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's SEND plans incorporate suitable objectives from the National Curriculum for Mathematics or Development Matters. Teachers regularly refer to these when planning lessons. These objectives may be incorporated into the lesson or on a 1:1 basis outside the mathematics lesson through intervention. Same day interventions help children with gaps in their learning and mathematical understanding, limiting their misconceptions in Maths. These are delivered by trained support staff or teaching staff and overseen by the SENCO and/or the class teacher.

Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability. Teachers have a responsibility to scaffold learning to allow lower attainers to meet ARE objectives, and extend high attainers to consolidate and challenge their understanding.

Equal Opportunities

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs to develop an enjoyment and confidence in mathematics, ensuring all children make optimum progress. Lessons involving visual, auditory and kinaesthetic elements benefit all children including those for whom English is an additional language (EAL).

Lessons

In all lessons, learning objectives, relevant vocabulary and success criteria are clearly displayed and discussed.

The emphasis in lessons is to make teaching interactive (through mathematical resources) and lively, to engage all children, encouraging them to discuss their learning. Lessons involve elements of:

•Instruction – giving information and structuring it well.

•Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays, which then are used to create a concept working wall.

•Explaining and illustrating – giving accurate and well-paced explanations.
•Questioning and discussing.
•Consolidating using reasoning based questions (riddlers and destination questions).
•Reflecting and evaluating responses – identifying mistakes and encouraging the children to self-correct and address any misconceptions.
•Summarising – reviewing mathematics that has been taught enabling children to focus on next steps.

Daily Fluency

We introduced a set time each day of around 30 minutes for fluency practice.

During this time the class teacher has a guided group where they either:

Work with pupils who have not fully grasped a concept during that day's lesson.
Pre-teach target children.
Work with target children on areas of arithmetic they are not yet fluent in.
The rest of the class work on whatever the focus is for that day. This is usually practising fluency in calculations or nailing the times table and related division facts they are working on.

In KS1 there is a heavy focus on number bonds and memorising number facts.

Using this approach has seen a big impact on pupil confidence in maths and resilience. As pupils gain fluency in calculations, they are no longer worrying about making mistakes, leaving them to focus on unpicking sophisticated problems with enthusiasm.

For Year 6 pupils it has had a great impact on arithmetic scores, leaving children plenty of time to learn the reasoning and problem solving skills needed for the KS2 SATs.

Pupils' Records of work

Children are taught a variety of methods for recording their work and are supported to use the most appropriate and convenient method. Where appropriate, children are encouraged to use mental strategies and their own jottings before attempting formal written methods. Pupils follow the Maths Expectations with regards to presentation within their books. Teachers use flip chart paper and interactive slides to model how to record concepts.

Marking

Marking of children's work is essential to ensure they make further progress. Work is marked against the success criteria, in line with the school maths marking policy, and includes next steps. Children are encouraged to self-assess their work and given time to read discuss and make corrections or improvements. Where possible, pupils have the opportunity to respond to feedback at the start of the next lesson.

Assessment

Short Term Assessments

Formative assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of learning daily through;

- Regular marking of work – written or oral.
- Analysing errors and picking up on misconceptions.
- Asking questions and listening to answers.
- Facilitating and listening to discussions.
- Making observations in EYFS.

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments.

Medium Term Assessments

Half termly assessments are carried out across the school using the assessment materials for each year group provided by the Herts for Learning. Teachers are required to have 6 profile children, who are assessed in depth according the Herts for Learning Phases and Steps outcomes. These 6 profile children are then used to extrapolate across to the rest of the class. Half termly moderations and Pupil Progress

meetings with SLT, ensure assessment outcomes are accurate and teachers are targeting their teaching following their assessments.

Long term Assessment
Year 2 use the National Curriculum TAF statements as guides to support their assessments and their planning. Y2 and Y6 complete the national tests (SATs) in May. YRS 1, 3, 4 and 5 have access to summative assessments in the form of diagnostics tests and White Rose, to support their termly judgements.

Resources
Each year groups have a wide bank of resources to support their teaching and learning. Audits are carried out by SL yearly and replenishments are made before year end. Teachers have had training in using a wide range of resources to support teaching of concepts and are supported by County advisors in ensuring the practical based curriculum is delivered.

Role of the Maths Subject Leader
The school is in the second year of the Maths Mastery working group.
Teaching assistants are taking part in a year long working group aimed at developing their knowledge of mastery.

•To lead in the development of Maths throughout the school.
•To monitor the planning, teaching and learning of mathematics throughout the school.
•To help raise standards in maths.
•To provide teachers with support in the teaching of mathematics.
•To provide staff with CPD (Continuous Professional Development) opportunities in relation to maths within the confines of the budget and the School Development Plan
•To monitor and maintain high quality resources.

Documents linked to this policy:

- Assessment & Marking Policy
- Remote Learning Policy
- Curriculum Policy
- Teaching Standards

Linda Taylor
September 2020

Addendum to policy January 2021

The National Curriculum assessments due to be held in summer 2021 have been **cancelled due to lockdown**.

Refer to Assessment policy for information on how and when pupils will be assessed by their teachers.