



Keresforth Primary School

Maths Policy

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This policy sets out the principles, aims and strategies for the teaching and learning of mathematics at Keresforth Primary School.

Principles of the Teaching and Learning of Mathematics

- Mathematics is a vital part of everyday life and provides children with vital skills for everyday living where it has been vital to all cultures in all parts of the world.
- Mathematics is an essential element of communication, widely used in society, both in everyday situations and the world of work.
- It is an essential element of communication and can be used to describe, illustrate, interpret, predict, explain and convey the meaning of a task.
- Mathematics is a fascinating and interesting subject which nurtures curiosity, enquiry and excitement.
- It is a flexible subject which allows pupils to use their initiative and imagination and develop their calculation, problem solving and reasoning skills in depth and to work within the mastery level.
- It is a subject which requires clear thinking and a systematic approach including an ability to problem solve, reason and develop an in-depth understanding at an appropriate level for the pupils' age.
- It requires children to work independently and co-operatively, making use of ICT as a tool to enhance learning.
- Mathematics provides a challenge and a sense of achievement; raising confidence within pupils own ability.
- It helps to develop personal qualities (including perseverance) and encourages co-operation with others; developing positive relationships and the understanding of others.
- The setting of differentiated tasks linked to the ability of the individual child and their starting points can increase the confidence of the child in their own ability to carry out tasks to solve problems. Thus it raises self-esteem.
- Mathematics allows pupils to make rich connections across mathematical ideas to develop fluency.
- Mathematics should allow pupils to apply their mathematical skills and knowledge across other subjects across the curriculum.
- Staff have high expectations of all pupils to reach their full potential across the school curriculum.

Strategies for the Teaching and Learning of Mathematics

Planning:

Good effective teaching is dependent on good planning and assessment. Each member of staff in Foundation stage, Key Stage One and Key Stage Two will prepare and plan work for their class/teaching groups in-line with the National Curriculum, the schools long-term mathematics plan and the calculation policy that have been developed through collaborating schools. Medium-term plans are created by individual or groups of teachers and short-term plans will be specifically for each teaching group. Planning will be developed throughout the year as a result of formative and summative assessment and therefore medium-term and short-term planning will not be in place at the beginning of the year. However, Medium-term plans will be evident at the beginning of each half-term.

The material used to support the deliverance of our school scheme of work is from various sources, as well as the National Curriculum. The materials include a range of text books, teacher files. For example: Maths on Target workbooks, Headstart work books, CGP Workbooks, White Rose and the Deepening Understanding online resources. Staff use ICT materials available on our school network and other interactive material they have researched to help deliver the curriculum. Key Stage Two have access to My Maths online which is used as a tool for Maths homework. Class teachers in Key Stage One classes have access to this when they feel it is relevant and necessary for the progression of their pupils.

Planning consists of:

Long-term planning

- Developed through collaborating schools.
- Includes objectives for each year group from Foundation Stage to Year Six to be followed each half-term (the order in which these are taught can be flexible).

Medium-term planning

- Developed from the objectives written on the long term plan.
- Includes a brief outline of the objectives to be taught throughout each half-term.
- These can be completed collaboratively when there are mixed-age class.

Short-term planning

- To be produced weekly and placed onto the shared drive each week.
- Starters involving a counting activity, recap of learning or reasoning based activity
- Lesson objectives need to be present where WALTs and Success Criteria are used.

These are to include the WALT for the starter and a WALT and Success Criteria for the main teaching activities

- Main teaching activities
- Differentiation including where TA's will be directed to work with specific groups
- Plenary activities
- To be shared with all staff members working in the classroom environment.
- May differ in the classrooms as a result of classroom teachers recognising sometimes misconceptions need to be addressed and topics need to be revised.

Foundation Stage

In The Foundation Stage mathematical activities will be planned by F1 and F2 staff using the Foundation Curriculum. These activities will allow the children to develop their understanding of number, measurement, pattern, shape and space, and enable the majority of young children to achieve the early learning goals for mathematical development at the end of the Foundation Stage. Children will be provided with a range of first-hand, practical experiences through continuous provision in workshop bays and through planned enhanced and targeted activities. Planned work will be based on assessments made by staff and delivered in small group situations. By the time the children progress to F2, there will be some opportunities for exploration through continuous provision but the balance of planned work will place more emphasis on focussed tasks. This will include a daily numeracy oral class interaction teaching time, followed by targeted group work. By the end of F2 it will be recognised that some pupils will have had only a limited time in formal school. During the summer term, F2 will focus preparing pupils to be Key Stage One ready.

Key Stage One

Good, effective teaching is dependent on good organisation. Children in Key Stage One will be taught in class groups; however some classes may have split year groups, for example, Year 1/2. This will be taken into account when organising objectives and tasks. Key Stage One classes will be supported by a teaching assistant. Year two children will take part in the compulsory mathematics SATs papers towards the end of the year.

- Each class or teaching group will have a daily mathematics lesson, usually in the morning.
- Each daily mathematics lesson will include a quick revision of previous learning or counting activity (sometimes involving multiplications). The learning objective for this will be clear on the WALT under the heading starter.

- The main teaching activity will follow with The main teaching activity will follow with appropriately differentiated tasks relating to the children's needs. Children will be aware of their learning objectives (WALT) and outcome (Success Criteria).
- A plenary session will end the lesson where children are able to assess their learning against their learning objectives.

Key Stage Two

Children in Key Stage Two also remain with their own class teacher whether they are mixed-aged classes or not. The teacher will be required to differentiate lessons appropriately for each individual/group in their class and be supported by a teaching assistant with this. Teachers of Year three and four will focus on preparing children for the multiplication times table check using times table activities regularly. Year six children will take part in the compulsory mathematics SATs papers towards the end of the year.

- Each class or teaching group will have a daily mathematics lesson, usually in the morning.
- Each daily mathematics lesson will include a quick revision of previous learning or counting activity (sometimes involving multiplications). The learning objective for this will be clear on the WALT under the heading starter.
- The main teaching activity will follow with appropriately differentiated tasks relating to the children's needs. Children will be aware of their learning objectives (WALT) and outcome (Success Criteria).
- A plenary session will end the lesson where children are able to assess their learning against their learning objectives.

TA Support

TA support will be directed to children when required with target groups/individuals regardless of the pupils' ability. TA's are briefed and given copies of planning at the beginning of each week regarding the work they need to cover when working with groups/individuals. TA's regularly have in-school training to up-skill their knowledge and understanding in mathematics in order to support pupils effectively.

Mathematics in the wider areas of the curriculum

At Keresforth, we believe the pupils should acquire a deep, long-term, secure and adaptable understanding of the subject; applying it across other subjects of the curriculum using a cross-curricular approach. This embeds a deeper understanding of mathematics by using concrete, pictorial and abstract approaches so that pupils develop a deeper understanding to solve problems and reason. As a school, we ensure Mathematics is embedded throughout the wider curriculum. Mathematics can be seen throughout other subject areas and these are evident in books and through photographs taken and added onto shared files. The use of the outdoors is encouraged to enhance real-life links for pupils as well as the use of STEM projects.

Monitoring and Progression

In Foundation stage, Key Stage One and Key Stage Two, each teacher develops their mathematical planning to suit their pupils' individual needs, using the long-term plan and national curriculum objects that are required to be taught.

- The Medium and short-term plans will be monitored by SLT and the mathematics co-ordinator who will support and help staff to ensure progression.
- Lesson observations/enquiry walks will be conducted by SLT and the mathematics co-ordinator and feedback will be given back to individuals and support will be given to help staff ensure progression.
- Mathematics books will be viewed by SLT and the mathematics co-ordinator to be checked for coverage and progression. The mathematics co-ordinator will give feedback to individuals and support will be given to help staff ensure progression.
- Mathematics books will have the WALT and success criteria printed and stuck into books at the beginning of each mathematics lesson and class teachers will highlight these each session using the traffic light colours according to the children's successes and marking policies and address any misconceptions and plan revision sessions from there.
- Learn it's and CLICS (part of Big Maths) is used as a scheme which children in Key Stage 1 and Key Stage 2 (FS2 begin to work on these in the Summer term in preparation for Key Stage One)- this identifies children's gaps in learning as well as enhancing and developing their understanding of calculations. This is monitored termly by SLT and mathematics co-ordinator.
- Every Child Counts has been purchased and specific members of staff have

attended the course to be used with groups to boost mathematical skills.

- Throughout Year 6, past SATs papers are used and CGP practise papers have been purchased to use as revision purposes and to identify gaps in children's learning to enhance progression.
- A range of single copies of other textbooks and published materials are available where each class teacher has been given books relating to their year group. These are also added on shared drive so all members of staff have access to the electronic copies. These resources are updated regularly and aid with progression from each year group.
- Mega Multiplication is used from Y1 as appropriate. Each half-term children can be tested using the Bronze, Silver, Gold, Platinum and Diamond tests. Certificates are awarded to pupils and pupils photographs are displayed on the Mega Multiplication chart give an incentive for them to learn their times tables and show the progression they have made from the start of their year group. This has been very successful and has resulted in many pupils developing multiplication and division skills. The Mega Multiplication sheets were updated in-line with the new curriculum and the multiplication test introduced into Year four in 2019-20.

Inclusion of SEN children in mathematics lessons

At Keresforth Primary School teachers aim to give every pupil the opportunity for success. Special needs pupils are catered for by:

- Mathematics lessons are differentiated appropriately according to age and ability.
- Structured support plans for individuals and groups of children.
- Input from TAs directed towards an individual or group of children.
- TAs withdraw some children from during maths lessons in agreement with the class teacher to:-
 - a) Use 1-1 programmes.
 - b) Work on precision teaching on 1-1 basis or small groups.
 - c) Allowing these pupils to have concepts and strategies explained in a broken down and much slower pace to the whole class.
 - d) Individual support is reinforced throughout lessons from TA/Teacher.

Special Needs Intervention in Maths

Children with Special Needs are closely monitored by the SENCO, class teacher and Mathematics Co-ordinator. Their progression is closely observed and recorded on Support plans. Pupil premium children throughout school are also recorded and tracked for progression. As well as this, focus children are selected for monitoring CLICs and Learn its and the math co-ordinator checks the progression of these children and addresses any children not making sufficient progress.

- KS1 children who are deemed to be falling behind in their maths development are put on maths intervention programmes. TAs working closely with the SENCO and class teacher use
 - a) Every Child Counts
 - b) Targeted precision teaching
 - c) Numicon
- In KS2 highlighted children use
 - a) Targeted precision teaching
 - b) Every Child Counts
 - c) Numicon

They work with designated TAs

- Wave 3 materials are also available online
- Homework is given weekly in KS2. A variety of materials are used for this however My Maths is the most used. Parents are welcome to come and see the set teachers should problems arise.

Assessment Reporting and Recording

Assessment is continuous. Teachers assess pupils from the beginning of each session to identify next steps of learning. Misconceptions are addressed and dealt with immediately. Interventions are planned where misconceptions can be addressed. Higher attaining pupils are given many opportunities to deepen their understanding through the use of Mastery resources and extra small group work when the class teacher feels it is necessary.

Assessments recording and reporting are important elements of teaching. KS2 (Year 6) classes undertake practice SATs relevant to their ability. These occur throughout the year (mainly beginning from Spring Term). Children are made aware of their levels, progress and targets.

Long-term assessment can be seen in the published school results which are compared to National Targets for mathematics and summative assessments are

collected termly in SIMS and reported to Governors.

Assessments can be based on observations, questioning, informal testing, incisive feedback and marking and evaluation of work. This will inform day to day teaching and learning and provide feedback to children. Alongside this, teachers need to allow for time for children to respond to the feedback by using purple pens (Purple polishers). Pupils are also taught to self-assess, peer-assess and evaluate their own achievements. They recognise their successes, learn from mistakes and identify areas for improvement. Teachers use a variety of AFL strategies and maths working walls are in classrooms which are altered regularly and referred to throughout lessons thus providing a mathematically stimulating environment that supports teaching and learning of the mathematics curriculum. Teachers provide a wide range of resources to support.

Assessments throughout Foundation Stage and both Key Stages:

- In Foundation stage, observations and baseline assessments are used. Observations are ongoing during group times and provision. The observations are regularly updated onto Early Essence and they are recorded in a graph termly.

Teachers have access to:

- Headstart termly assessments – to be conducted each term then assessments reported to SIMs and pupil progress forms are completed and discussed. These can also be discussed in parents meetings and on individual pupil's reports.
- Headstart Module tests which be used at the class teacher's discretion at the end of teaching a specific unit to inform planning.
- CLIC and Learn its progress is reported every term and pupils should make at least three steps of progress throughout the year.
- Mega Multiplications to be conducted every half-term – boards to be changed and certificates to be handed out.
- Teachers highlight the success criteria using green or orange at the end of each mathematics lesson to inform planning for the following session and to allow the children to see their successes and improvements to be made.

Approaches to calculation

Key Stage Two staff have met to discuss methods of calculation including those of the collaborating schools to develop a calculation policy so that children progress easily and are not confused by different approaches to calculation by individual members of staff. The calculation policy has been shared with all members of staff and an electronic copy is accessible on shared, non-pupil, and maths. Therefore, calculations and the written methods throughout school are to be consistent.

In accordance with the Numeracy Framework approaches to written and mental calculation will be as follows:

- Emphasis in all year groups will be given to teaching the four rules and developing mental skills to help children become numerate.
- In the Foundation Stage, children will be given opportunities to discuss and develop mathematical skills in provision as well as through focussed activities.

CPD opportunities within the Mathematics curriculum

Opportunities exist for staff development in the form of Inset days and courses provided by the LA. Teachers and TAs are advised by the Mathematics leader or SLT members which courses may be helpful to them for their personal development. Staff communicate their views and ideas about mathematics and their concerns regarding the implementation of the New Framework in informal discussions, Staff Meetings and in Key Stage meetings.