

MATHEMATICS POLICY



Introduction

This policy outlines the aims, organisation and management for the teaching and learning of mathematics at Linby-cum-Papplewick CE Aided Primary School.

Aims

Mathematics is a life skill. It is an essential element of communication, widely used in society, both in everyday situations and in the world of work.

Our aims in teaching mathematics are:

- To equip pupils with the mathematics in order for them to become numerate.
- To develop their ability to apply mathematical skills with confidence and understanding when solving problems.
- To enable pupils to express themselves and their ideas using the language of mathematics with assurance.
- To develop positive attitudes to mathematics, recognising that mathematics can be both useful and enjoyable.
- To nurture a fascination, excitement and love of mathematics
- To be able to use and apply the skills in other curricular areas.

Teaching Mathematics

Organisation

Class Ash

- Each child will undertake some mathematics on a daily basis.
- Number and Patterns and 'Development matters: Guidance in the Early Years Foundation Stage', is being used to support the teaching and learning of mathematics for children at the foundation stage. At this stage, pupils experience mathematics on a daily basis. This early introduction to mathematics will generally be undertaken orally and often in the context of a class theme.
- Children work towards the Early Learning Goals for Mathematics in Numbers, Shape, Space and Measures. Opportunities for mathematics should be developed through daily routines, games and in the maths area as part of the continuous provision.
- Pupils are taught as whole classes, in groups and as individuals.
- The skills acquired in the numeracy lesson are applied across the curriculum in direct teaching situations and through continuous provision.

In Classes Oak, Fir and Elm a typical 45 - 60 minute lesson in Year 1 - 6 will be structured like this:

- Oral work and mental calculation (about 5 to 10 minutes)
This will involve whole-class work to *Rehearse, Recall, Refresh, Refine* and *Reason* mental and oral skills.
- The main teaching activity (about 30 to 40 minutes)
This will include both teaching input and pupil activities and a balance between whole class, guided group work, paired and individual work.
Children may work in mixed or ability groups according to the intended learning outcome.
Practical and investigative work and games will be included whenever and wherever possible.
- A plenary (approximately 10 minutes)
This will involve work with the whole class, as appropriate, to refer back to the learning objective and success criteria, address misconceptions, identify progress, to summarise key facts and ideas, clarify what needs to be remembered, to make links in other work and to discuss next steps in learning. This section of the lesson also provides an opportunity for children to reflect on their learning.

Teaching strategies

In order to provide the children with active and stimulating learning experiences, a variety of teaching and learning opportunities are adopted:-

- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- Wherever possible practical 'real' activities are used to introduce concepts and reinforce learning objectives.
- Opportunities to transfer skills learnt, to real situations, are used whenever possible.
- Activities are planned to encourage the full and active participation of all pupils.
- Teachers differentiate tasks throughout the lesson in order to meet the needs of all abilities.
- High quality questioning skills are used; these may be general questions aimed at the whole class or targeted questions aimed at specific groups or individuals. Through questioning teachers aim to challenge the children to make connections between concepts and explain their thinking.
- Teachers place a strong emphasis on correct use of mathematical language; this is supported by the display and frequent reference to, key vocabulary.
- Teachers value pupils' oral contributions and create an ethos in which all children feel they can contribute.
- Games, challenges and fun activities are used to develop a positive learning attitude to mathematics.

Curriculum Planning

Medium Term Planning

Teachers use the Primary Framework or EYFS Development Matters materials, to plan lessons that develop understanding of areas of mathematics. The emphasis is to develop a sequence of teaching and learning that encompasses the cycle of assess, plan, teach, practise, apply, and review through every unit. An emphasis on Using and Applying mathematics is embedded within the curriculum.

Class Ash uses the 'Numbers and Patterns' framework and 'EYFS Development Matters Materials' guidance to structure their teaching of mathematics.

Classes Elm, Fir and Oak follow the planning structure from the Primary Framework using the Hamilton Teaching plans and National Numeracy Strategy Framework to support the teaching and learning of mathematics. Areas of mathematics covered 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

Each area of mathematics listed above is visited at least once in each term to enable the children to consolidate previous learning and build their conceptual understanding on a firm basis. Each unit of work covered is formatively assessed at the start, end and throughout the series of lessons to ensure that children's learning needs are met, work is appropriately targeted and misconceptions are identified and addressed.

Short term planning

- Each class teacher is responsible for the planning and teaching of the daily maths lesson in their class.
- Each lesson has a clear learning focus and builds on the work covered in previous lessons.
- Teachers consider how to best utilise their time, and that of their teaching assistants, to ensure that all children receive targeted teaching at some point in a week.

- Teachers evaluate units of work noting which pupils have exceeded or not achieved expectations to inform future planning.

Teaching methods and approaches

In order to provide the children with active and stimulating learning experiences, a variety of teaching and learning opportunities are adopted:

- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- The school has discussed the presentation of work in mathematics, *including books and number formation. Books are monitored by the maths subject leader on a yearly basis.*
- There are agreed approaches for the teaching of calculation (See calculation policy document)
- ICT is used where appropriate by teachers and pupils to support teaching and learning in Mathematics.
- The use of the calculator is formally introduced in year 4 but used more extensively in Class Oak- years 5 and 6.
- The school uses the RM learning system to support all children on an individualised teaching programme. Each half term, children are targeted for extra work on RM which is monitored weekly to identify and deal with misconceptions. These children visit the head teacher each week to review and celebrate their progress.

Assessment, recording and reporting

Assessment takes place at three connected levels: short-term, medium-term and long-term. These assessments are used to inform teaching in a continuous cycle of planning, teaching and assessment.

Day-to-day assessments

As part of the on-going teaching and learning process, teachers will assess children's understanding, achievement and progress in mathematics. Assessment may be based upon observation, questioning, informal testing and the marking and evaluation of work. This will inform day to day teaching and learning and provide feedback to children. Learners will also be taught to assess and evaluate their own achievements by recognising successes, learning from their own mistakes and identifying areas for improvement.

Unit assessments

Take place at the end of a teaching sequence. Teachers assess key ideas, targets and areas of concern that have been covered during these units.

The outcomes of short term assessments are recorded on a record sheet which is used to support the tracking of progress.

End of Year Assessments

These are carried out towards the end of the school year to assess and review pupils' progress and attainment. This enables attainment to be tracked year on year and will inform future teaching and learning and identifies children requiring intervention programmes. Targets are recorded on the children's end of year report to parents and monitored by the head teacher.

Assessments are made through compulsory National Curriculum mathematics tests for pupils in Years 2 and 6 (following National directives) and the optional SATs for Years 3, 4 and 5. Teachers also draw upon their class records of attainment and supplementary notes and knowledge about their class to produce a summative record. Accurate information is then reported to parents and the child's next teacher, if the child is transitioning to a new class.

Intervention programmes.

Children with special needs have time allocated to meet their individual needs. This time allocation and planned programmes of work are managed by the class teachers and the teaching assistants in each class. This support may be delivered on a one to one basis or within a small group. Targets are set, and monitored, for each term and programmes modified as required.

Information is kept on each child needing support. The 'mathsletics' programme can be used to support children who need extra support with their mathematics; this programme can be worked accessed at home as well as at school.

Equal Opportunities

All pupils will have equal opportunity to reach their full potential across the mathematics curriculum regardless of their race, gender, cultural background, ability or physical disability. Extra targeted support is provided for those children who are working significantly above and below the expected levels of attainment for each teaching group. The 'Mathsletics' programme is used to set extension work for those children working significantly above national expectations or for those children who require extracurricular support or intervention; this can be used at home and school to allow those children with a gifting in mathematics or who require additional support with mathematics, the opportunities to extend their mathematics out of school.

Inclusion

The school's equal opportunities policy applies to the teaching of mathematics as to all other subjects.

Environment

It is important that the classroom environment supports both the learning and teaching of mathematics.

The school aims to provide a mathematically stimulating environment:

- through interactive displays that promote mathematical thinking and discussion
- by providing a good range of labelled and organised resources which are accessible to both teachers and pupils
- to promote effective use of teaching aids through careful modelling with the children
- to maximise use of games and challenges to raise confidence and enthusiasm

In every classroom, resources such as number lines, hundred square, place value charts and multiplication squares are displayed as appropriate and used for whole class or individual work.

A list of resources is included in Appendix.

Homework

We recognise the importance of making links between home and school and encourage parental involvement with the learning of mathematics. Learning homeworks are set from Y1 upwards to encourage children to learn their number bonds and tables facts by heart. The expectation is that the majority of children should know their times tables to x10 by the end of year 4.

Homework provides opportunities for children

- to practise and consolidate their skills and knowledge,
- to develop and extend their techniques and strategies, and
- to share their mathematical work with their family
- to prepare for their future learning.

In Key Stage 2 homework is set on a regular basis. (See **Homework** policy for further details.)

A parents meeting is held for all parents entering a new class (YR, 1,3,5) in the Autumn term to ensure that parents are informed of policies and practices in each class.

This policy will be reviewed in the summer term of 2018.