



Hanley St Luke's C of E Aided Primary School Mathematics Policy

Updated: Spring 1 2015 by: E Facey, W Moreton, K Ziemann

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Numeracy Leadership Team: Emma Facey (KS2), Wendy Moreton (KS1), Kelly Ziemann (EYFS)

Numeracy Link Governor: Heather Emery

Introduction

Mathematics is a core subject within the national curriculum. This policy outlines the teaching, learning, organisation and management of the mathematics at Hanley St Luke's CofE Aided Primary School.

The policy has been drawn up as a result of staff discussion and has the full agreement of the Senior Management Team and the Governing Body. It will be reviewed as necessary.

The implementation of this policy is the responsibility of all teaching and support staff. It is monitored by the mathematics leader team with a representative from each key stage.

Mathematics leaders can also conduct mathematics lesson observations in addition to the senior management team or outside agencies.

At Hanley St Luke's we believe that mathematics is an essential life skill and a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas, and to tackle a range of practical tasks and real life problems. Our primary aim is for all children to become **fluent** mathematicians.

All of our mathematics teaching and learning will have the clear aim of developing children's ability to calculate, to communicate, to reason and to solve problems, to understand shape and space, to reason about number,

to interpret data and use and apply learned strategies in a wide range of contexts across the curriculum. Lessons are sufficiently challenging, pacy and allow children's learning to improve rapidly.

At Hanley St Luke's we aim to promote enjoyment and enthusiasm for mathematical learning through a range of diverse activities including written work, practical activity, ICT, exploration and speaking and listening.

Teaching and Learning Ethos and Curriculum Organisation

At Hanley St Luke's mathematics is taught creatively, with the needs of the children at the forefront. Children are grouped according to needs and abilities.

Through this approach we encourage and allow children to ask, as well as answer mathematical questions, challenge ideas and responses, make connections and see relationships, explore ideas, reflect critically on their own and others ideas, actions and outcomes.

Careful planning of differentiated key questions following Bloom's Taxonomy; promotes higher order thinking skills and informs assessment as learning. We strive to ensure that all children are mathematically fluent in a number rich environment.

A daily mathematics lesson is taught in all year groups across all key stages.

In key stage 2, lessons last for one hour, sometimes more for special projects. In EYFS and KS1, mathematics is taught for at least 4 hours per week according to timetable and class needs. However, mathematics can be seen across the whole school curriculum e.g. mathematical vocabulary in English and spellings, SODA, science, history, displays, art days, assemblies etc.

Our school uses a variety of visual, kinaesthetic and auditory teaching and learning strategies in mathematics lessons to ensure a curriculum that is inclusive, accessible and relevant to all pupils.

In Key stage 1 and 2, ability groups within year groups are created at the beginning of the school year (In Spring Y1), based upon previous teacher assessment and data from the DCPro tracker; with reference to children with special educational needs and those who are more able and talented.

Ability groups will vary across the year, term and throughout the teaching of a topic in response to ongoing teacher and self assessments. Their work, targets and support will be planned for, adapted and differentiated according to individual needs.

Extension tasks are always planned for and utilised for every ability in every lesson. Some year groups plan across the year as a whole to ensure that no child is left behind, and utilise a children led approach to learning where the children choose a challenge according to their confidence (bronze, silver, gold and platinum).

Children who grasp concepts quickly are given enriching challenges to complete to broaden their knowledge and understanding before moving on to new concepts.

Our principal aim is to develop children's knowledge, skills, understanding and confidence in mathematics.

We do this through a mix of whole class, group and individual teaching assisted by teaching and support staff and resources where relevant and applicable. Warm ups mini plenaries, and plenaries are differentiated to provide challenge or support as necessary.

All staff follow the school calculation policy for written methods for all four operations which is followed by all staff.

There is a strong focus on basic skills including all four number operations. Mental recall and multiplication tables are practised and

formatively and summatively assessed on a regular basis in all classes from Year 2 upwards.

Mathematics is taught as independent subject but wherever possible we encourage the children to use and apply their learning in everyday situations with links to real life, and, where possible link to other subjects and areas of the curriculum.

Well organised cross curricular links allow scope for independent enquiry and rich investigations. Mathematics featured across the curriculum, and in real life situations wherever possible and relevant.

We use teaching assistants and support staff to provide appropriate support and focused teaching to individuals or to groups of pupils throughout the mathematics lesson.

They may deliver differentiated inputs as planned by the class teacher to extend or support children's learning as necessary. Teaching assistants and support staff within Hanley St Luke's are an important asset to the teaching and learning and as such are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding are regularly updated through involvement in school based INSET where possible and year group team planning.

We encourage the use of different response strategies such as talk partners, number fans, mini whiteboards and Talk Partners to aid assessment as learning. Teachers then adapt their delivery of the curriculum according to individual and group needs throughout the lesson, and sequences of lessons.

Mathematics homework is given on a weekly basis in key stage 2. All classes use a creative approach focussing on key mathematics skills where the children have scope to choose their activities and how to approach them. In year 6, extra mathematics homework is given and a lunch time 'drop in' session is available during Spring term. All children are able to attend homework club at lunch time every day if they wish.

Mathematics events such as theatre shows, problem solving challenge mornings and team quizzes take place across the school to focus on and improve children's; using and applying, speaking and listening, working systematically, fluency and logical thinking skills. Also to promote cross curricular links and enjoyment

Displays of children's work, in the classroom, The Counting House, and wider school environment, are used to share and celebrate the children's achievement and success. Key mathematics concepts, Numicon, targets vocabulary and information are displayed in every class. There is a stronger focus on 'working walls' where current mathematical learning and vocabulary is displayed and used throughout lessons by the children.

The Foundation Stage

We relate the teaching and learning of mathematics to the objectives set out in the Early Learning Goals which underpin the curriculum planning for children from birth to five. Within the levels differentiation takes place using age related targets. Children's progress is accelerated through the emerging, expected and exceeding objectives that occur within each level. All staff in the foundation stage use the same planning format.

We give all of the children ample opportunity to develop and improve their skills in counting, understanding and using number, calculating simple addition and subtraction problems, and to describe shape, space and measures through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

Children's mathematical development is carefully planned for through adult-led focus activities and through mathematical learning in all areas of provision. Children's mathematical understanding is observed, monitored and recorded on an ongoing daily basis. Fix-it time and next steps have been introduced to show children how to improve their work.

Throughout the Foundation Stage, children are encouraged to appreciate, use and develop mathematics through play in all areas of provision (Cross

Curricular). Mathematics takes place in outdoor and indoor learning environments.

Mathematical resources such as number lines, compare bears etc are available throughout. Concepts of shape, space, direction, size, length, money, time, capacity and mass are developed through sand, water and tactile play, outdoor provision, role play, storytelling, nursery rhymes and songs.

Mathematics Curriculum Planning and Assessment

Mathematics is a core subject in the National Curriculum and we use this to implement the required statutory elements of the NC programme of study for Mathematics.

The National Curriculum is used to plan from according to the needs of the learners.

Using the Rising Stars scheme amongst other resources, prior assessments are completed before each new unit of learning, for example - Fractions or geometry. This is to enable the teacher to pitch the learning at the right level for the children, and to ensure any misconceptions can be addressed. These are glued into the children's books for easy reference.

At the end of the unit of learning, children complete the next Rising Stars assessment. This is to demonstrate their learning and progression. After their completed work on that unit, these are also glued into the children's books for easy reference.

Teachers keep a record of scores for both prior and after tests. These are assessed against the expectations for their age/ year group. Either: Emerging, Expected or Exceeding Expectations. This is highlighted in record books as pink, green and blue respectively. These are then used as evidence, alongside children's work to make a judgement about a child's progress.

Expectations for the end of year- Parents are given a copy of the key objectives for their child's year group with advice on what their child's next steps are, and what they are doing well at.

These are recorded by teachers, and put on the DCPro assessment tracker each term. These expectations are referred to during planning to decide what to teach the children.

They are also shared and discussed during parents evening with parents/carers. Achievement and progress of the children's mathematics learning is monitored by the mathematics coordinators and SLT.

National SATs are taken at the end of year 2 and year 6, including the more able and talented pupils in year 6 entering for the level 6 paper.

All staff in EYFS, key stage 1 and 2 use the same planning grids with differentiated spaces to include the ability, starter, main part of the lesson, resources, plenaries and boxes to detail the differentiated tasks for application and work. TAs are identified on plans (and plans are shared with TAs) with regards to children they are working with, groups and tasks.

Plans should be uploaded onto Global on a weekly basis to allow ease of monitoring for coordinators.

Assessment as Learning informs planning on a daily basis and informs the next part of the lesson, day or week's planning, teaching and learning.

Teachers' and support staff make ongoing assessments and respond appropriately to pupils during 'day to day' teaching. These immediate responses take the form of marking and verbal feedback (see marking policy).

The level of the work provided for the children closely matches to their needs, allowing for support and a high level of challenge as necessary. They often choose for themselves according to their confidence and

understanding, and they can also self differentiate. Teacher's have consistent high expectations of what children can achieve, this is encouraged in the children and the choices that they make with their work.

Written feedback and visual stamps in books are used in response to the success criteria and challenges set during the lesson. Learning challenges and Success Criteria are displayed and self or peer assessed in books on every piece of work. It will identify the next steps in the children's learning, show children how to improve and praise current achievement. (See marking policy).

We encourage children by highlighting positive achievements in both work and lesson participation. This could include praise for use of a viable method (even if the end result were incorrect), effort, enthusiasm, involvement and attainment.

Rewards for mathematics are given including use of the behaviour chart, certificates and stickers/ stamps. In FS, key stage 1 and 2 a 'Mathematician of the Week' is awarded. Many children are entered each week into the 'prize draw', all of the children stand up in assembly and the reason for their nominations are celebrated, they each receive a sticker; the child whose name is drawn out receives a £5 voucher. In addition, excellent pieces of mathematics work and homework can be sent for 'Work of the Week'.

Children work in blue maths books. In KS1 on cm squared paper, in KS2 0.5 cm squared paper. Uniform maths books covers are used in EYFS, KS1 and KS2. These can be found on Global in the maths folder.

Self and peer assessment of work and knowledge is encouraged through the use of student friendly measures such as traffic lights , talk partners, thumbs up and down, smiley face cartoons, Gold Lesson challenges, next steps, two stars and a wish and so on.

Moderation of children's learning and progress, and consistency across classes and year groups takes place regularly (360 Monitoring/ Book

trawls) by SLT and mathematics coordinators. Following this all staff are given a handout detailing what we are doing well, and even better if's to ensure improvement and progression for the following term.

Professional conversations happen as necessary, and support is available from the maths team and SLT.

Resources

Each class should have a well maintained stock of core resources (including Numicon) kept in a defined area to use regularly to provide visual and practical support during the lesson and interactive teaching sessions. Children should have independent access to this. Calculators should be used as a teaching tool from Nursery and as a calculating tool from Year 5.

Stocks of resources are kept in the Counting House - located upstairs near the staffroom including scales, stories for maths, equipment for capacity and games.

There are excellent resources on the internet and programs for use on our interactive whiteboard (including Numicon), such as Maths Fiery Ideas, Purple Mash, Education City and Interactive resources.

A range of textbooks, story books, activities and resources are used by the class teachers in addition to specific resources produced by staff. Numicon is available in all classrooms as a resource, and through display from FS to Year 6.

All classes use a wide range of equipment to enhance and aid their teaching and learning including whiteboards, number fans, number lines, counters, protractors and dice.

It is the responsibility of the mathematics coordinators to maintain and order stock in accordance with the yearly allocated budget

Equal Opportunities

We provide opportunities for all our children, regardless of age, ability, gender, ethnicity or vulnerability. Creative teaching is used to develop children's learning in mathematics, particularly for those with special needs, including gifted and talented children. We offer a broad and balanced curriculum encompassing year groups, key stages and the whole school. Our school has an equal opportunities policy which all staff adhere to.

Effective pupil tracking (DCPro Data) enables identification of pupils who may benefit from intervention or further challenge at an appropriate level. Data is monitored by coordinators and SMT on a termly basis to ensure that children are identified and provision is planned. These specific children's needs and provision are addressed in planning and evaluating. SEN and G and T children are identified and relevant co-ordinators are notified.

Work in mathematics takes into account the targets set for individual children in their Pupil Passports (PPs). PP targets can be obtained from the wave 3 mathematics screening test available from the SENCO.

Children identified with SEN in mathematics receive intervention strategies including daily diaries, extra sessions, small group and individual teaching, support and scaffolding.

Children who are on the more able and talented register attend workshops, challenges/ quizzes where available and more challenging extension work. Higher ability sets in KS2 plan and deliver some lessons across the year to younger children in KS1. In year 6, some children may attend high school mathematics sessions.