



Hollywood Primary School

-Mathematics Policy -

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Hollywood Primary School Mission Statement

“Working together realising potential”

This policy contributes towards the fulfillment of the whole school aims and mission statement.

“Our Mission is to develop each child as a caring, confident and independent young person able to play a full part in a changing world.”

We aim to create opportunities for every child within a climate of success for all. We will strive to enable each individual to achieve their personal best at all times, encountering challenges not problems, planning for success at every level. Ours will be a school with a sense of community: secure, comfortable and yet challenging.

Aims and Guiding Principles

1. We aim for the highest possible standards of learning and teaching in all subjects through a broad and balanced curriculum.
2. We aim to promote an enthusiasm for learning that is lifelong and will enable our children to grow as independent, confident young people in a changing world.
3. We aim to foster an ethos, which creates an atmosphere of mutual trust, respect, courtesy and co-operation.
4. We aim to provide a safe, secure and happy environment.
5. We aim to develop and maintain strong links with our parents and community in a spirit of partnership in the education process.
6. We aim to always consider the needs of our children as individuals regardless of gender, race, ability or disability.
7. We aim to develop a child’s creative, physical, and aesthetic talent, awareness and appreciation

This policy outlines the teaching, organisation and management of Mathematics at Hollywood Primary School.

The Nature of Mathematics

Mathematics is a tool for everyday life and is *critical to science, technology, finance and engineering*. Maths is a powerful, universal language used to explain, predict and represent events and tackle problems. Through a whole network of concepts and relationships, mathematics provides a way of viewing and making sense of the world. It is used to analyse and communicate information as well as to tackle practical problems in a range of contexts, and will be a key skill our children require when they approach the ever changing jobs of tomorrow.

We recognise that pupils need to acquire fluency in procedures, alongside developing conceptual understanding if they are to be able to reason mathematically and solve increasingly complex problems in life and later in the workplace. We endeavour to make the mathematics curriculum accessible to all pupils; this year we have started to work towards a mastery approach, with the aim of moving children through the programme of study at broadly the same pace. As the year progresses, we aim for children to get a deep understanding of the mathematics they are learning in order that future learning is built upon firm foundations.

Using the Programme of Study from the Primary Curriculum 2014 it is our aim to encourage children to develop:

- ✓ competence and confidence in mathematical knowledge, concepts and skills acquired through a wide range of mathematical experiences
- ✓ An ability to solve problems through reasoning, logical thinking and working systematically and accurately.
- ✓ initiative and an ability to work both independently and in cooperation with others
- ✓ an ability to communicate mathematically and enrich their discussions with mathematical vocabulary
- ✓ an ability to use and apply their mathematical skills and understanding across the curriculum and in real life situations

Through a range of teaching and learning strategies, we aim to equip children with secure mathematical knowledge, skills and understanding and foster positive and curious attitudes towards learning.

1. Curriculum for Mathematics at Hollywood Primary School

Knowledge Skills and Understanding

Reception teachers plan for the objectives from the Early Years Foundation Stage Statutory Framework to be taught, in particular from the Early Learning Goal of Mathematics.

KS1 and KS2 teachers plan for the objectives from the Primary Curriculum (2014) to be taught. Teachers ensure the 3 aims of the Primary Curriculum are central to sequences of lessons. These aims are:

- Problem Solving
- Reasoning
- Fluency

We aim for children to develop a positive attitude toward and sense of excitement about mathematics and support them as they progress to abstract recording, with carefully planned use of concrete materials, pictorial representations and a culture of enquiry and investigation. Children will be given opportunity to develop reasoning and problem solving skills through structured teaching sessions, and then given time to apply these skills in their day to day maths lessons.

Breadth of Study

Through effective planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- √ practical activities and mathematical games
- √ problem solving and using and applying their skills
- √ individual, group and whole class discussions and activities
- √ open and closed tasks
- √ a range of methods of calculating
- √ opportunity to deepen and make connections between their learning
- √ working with computers as a mathematical tool
- √ Application of Mathematics skills in other curriculum areas and a range of real life contexts.

2. Organisation of Mathematics at Hollywood Primary School

Daily Mathematics Lesson

Children in Reception and year 1, 2, 3 and 4 are taught in their classes. Children in year 5 and 6 are currently taught mathematics in sets (2 sets per year group). Children are taught Mathematics for one session per day.

A typical lesson format may have elements of the traditional 3 part lesson, as follows. However, this 3 part lesson is certainly not a rigid structure. Teachers will use their judgment and the learning needs of the children as a starting point to adapt the lesson structure to meet these requirements. Lessons should be rooted in context as much as possible, so children are aware of the real life applications of their maths skills.

Lessons are structured with assessment opportunities throughout. This provides opportunities to evaluate what has been learnt, review success and address misconceptions. It should also provide opportunity for peer/self assessment so children understand what they attained and where to go next. A key focus in our lessons is reflection on learning, and we seek to provide time for the activities summarised in the plenary section above at least once during a lesson. There are no specific time limits for the different parts of a lesson.

- **Fluency warm up (oral and mental skills).** This will involve work to rehearse, sharpen and develop mental and oral skills. Teachers will provide opportunities for children to work on their basic skills (mental recall, times tables, maths vocabulary etc). Children may also do mental maths and arithmetic tests in this time.
- **The main teaching activity.** This will include teaching input and pupil activities, involving whole class, grouped, paired and individual work. Throughout the week children will get opportunities to work independently as well as part of guided groups. This time may also include opportunity for children to explore concrete apparatus and deepen their understanding of a mathematical concept.
- **A Review of learning.** The review session or sessions within a lesson will provide opportunity for children to review their own progress by reflecting on learning in the lesson, evaluating their work against success criteria or using self/ peer assessment. A review may also allow identification of misconceptions, a summary of key facts and ideas and what to remember, make links to other work and discuss next steps in learning. These activities do not need to only occur at the end of a lesson and may occur many times within one lesson.

Each teacher completes a weekly plan for the group of children they teach:

- Teachers in KS1 and KS2 use objectives from the Primary Curriculum 2014. All planning for KS1 and 2 is completed on a common planning proforma and saved on the school network. At Hollywood Primary School, we recognise that many teachers choose to set out lessons step by step on flipcharts or powerpoint presentations. We expect an outline plan of each lesson as a minimum, as long as detailed lesson resources and flipcharts are also saved on the school system for reference, monitoring and to identify any need for support.
- Teachers of the Foundation Stage plan their teaching on objectives from the Early Years Foundation Stage Statutory Framework; this ensures that they are working towards the Early Learning Goals for Mathematics. Planning for the Foundation Stage is completed on a weekly proforma which includes all EYFS areas of learning, including Mathematics.

Across the school, mathematics lessons last up to 1hr 30 minutes, depending on the key stage. Additional mathematics may be taught or skills applied within other subject lessons at different times of the day. Throughout the whole curriculum opportunities exist to extend and promote mathematics. Teachers seek to take advantage of these opportunities, while linking their Mathematics teaching to topic work as appropriate.

Responsibility for Mathematics

The Mathematics Leader, through monitoring and evaluation, identifies areas for development within the subject, and feeds these into the termly and yearly action plan, which is amended and added to as appropriate. The Mathematics Leader works closely with the Maths Team (Miss Prottey who has responsibility for KS1 Maths support and Ms Rose who is MaST trained), as well as the Head teacher and Senior Management Team.

The school has identified a Mathematics governor, who visits the school regularly to take part in Learning Walks with the Head teacher and informally talk to teachers, teaching assistants and children. The Mathematics Leader/Head teacher keeps the Mathematics Governor updated on relevant changes and developments in the way Mathematics is taught or new initiatives within the school.

All class teachers are responsible for the delivery of the Mathematics curriculum.

Resources

All teachers have an area within the classroom dedicated to storage of mathematics resources. This area is easily accessible and clearly labelled to all children, allowing them to become familiar with all resources. Children in Reception have access to Mathematics linked resources throughout each day, which they can select and use independently while in the classrooms and in the outdoor area. Each table also has a Maths Toolkit, with a range of commonly used resources to support learning. There are also additional resources kept in the resources room which are accessible to all. In Reception and KS1, Numicon and Base 10 are used regularly to support learning. Numicon is also available as required in KS2.

To support planning, and in addition to the National Curriculum, teachers use various

websites and published materials to ensure they plan motivating, purposeful and challenging learning opportunities for the children. These include:

- White Rose Mastery Planning Documents (used as a basis for planning)
- Abacus online planning (Ks2) (used to supplement planning as required)
- Maths Map website (used to find steps in learning and show progression in skills required to meet an objective)
- Calculations Guidance (in association with White Rose Maths Hubs)
- NRich tasks and NCETM website for guidance
- MyMaths website (to support homework and class teaching activities)
- Other websites, textbooks and teacher made resources.

Information and Communication Technology

We recognise the impact ICT can have on engaging children, and throughout the Computing Curriculum there exist many links to Mathematics. Throughout the school, wherever appropriate, ICT will be used in various ways to support teaching and motivate children's learning in the Mathematics lesson and beyond. Every classroom (and the ICT suite and the hall) is fitted with an interactive whiteboard or interactive screen, making interactive teaching an integral part of the children's education. ICT will involve use of computers, video clips, data loggers, Roamers, audio-visual aids and more. Children have opportunity to use ICT Mathematical Software such as MyMaths, as well as using handling data programmers, position and direction loggers and a range of educational websites.

There is a dedicated mathematics folder on the school network system with a bank of online resources for staff to access. The Mathematics Leader has put together a list of useful websites for staff to use, as well as links to online Mathematics resources which the school has subscribed for.

3. Catering for the Needs of all Children at Hollywood Primary School

We aim to encourage every child to achieve their potential by creating a positive learning environment. To achieve this, Assessment for Learning is used to ensure children are provided with appropriate challenge or support. We have changed the setup of our groups and classes for 2016/17 and now children are not limited to one "ability" group within their class or set. We use teacher assessment and input from the children to decide whether additional support or challenge is required. It is expected that all children within the class (with some exceptions of children working significantly below the current stage) will work on the same objectives at the same time, but the tasks they complete to help them achieve that objective may vary according to their needs.

As we work towards a Mastery approach**, all children will be given opportunity to deepen and strengthen their mathematical knowledge and understanding. Children who regularly achieve understanding at depth will be identified and given further opportunities to work at greater depth at their National Curriculum Stage. This follows guidance from the National Centre for Excellence in Teaching Mathematics. In line with the Primary Curriculum (2014) we do not

**By the end of 2016/17 we aim for all classes to be using an embedded mastery approach to teaching mathematics. Further training is planned for this year, including Maths Leader's involvement in the NCETM PD lead program.

accelerate children onto the curriculum content of a higher year group, but instead provide further challenge and help the children make deeper connections between the learning at their own year group stage.

Depending on the need, sometimes children who have been identified as requiring some extra support to enable them to progress will work with a 1:1 or mathematics tutor, or form part of a booster or focus group with a teacher or TA. This aims to bridge the gap and enable these children to progress at a similar level to their peers.

Within lessons, teacher may use one or many of the different methods below, designed to support all children to make progress in Mathematics.

- Intelligent Practice – children can be given a range of mini tasks to help master fluency with a mathematical concept or skill. Tasks may require higher level thinking or reasoning as they progress.
- Low threshold, high ceiling tasks - open ended activities/investigations where children can work at different levels of depth. These tasks may be taken from NRich examples.
- Resourcing and Scaffolding –a variety of resources available to all children, e.g. counters, Cuisinare Rods, multilink, 100 squares, number lines, mirrors, Numicon, Base 10 etc. Use of concrete and pictorial approaches as a support before moving to abstract strategies will be carefully planned.
- Use of adults – adults may provide support for children and use skilful questioning to probe for and address misconceptions, or to deepen and extend thinking.
- Resources to support depth in understanding – children who rapidly grasp learning may complete further tasks linked to NCETM Mastery assessments and Levels of Reasoning documents, as well as more complex problems and investigations.

Children with Special Educational Needs

Children with Special Educational Needs are taught within the daily mathematics lesson and their needs are catered for through use of a range of teaching strategies, resources and provision of support staff. Where a need is identified, Teaching Assistants work with whole classes, groups or individual identified children to support them in their learning. When teachers and teaching assistants regularly work with children to provide additional support, we still encourage the children to work independently wherever appropriate. All support staff work in collaboration with the class teacher so when children are supported, their progress is monitored and used to inform evaluations, assessment and future planning.

Where applicable children's IEPs incorporate suitable objectives from the Mathematics Curriculum or EYFS Statutory Framework and children with IEPs have their targets recorded in the front of their Mathematics books. Additional time outside the Mathematics lesson is provided once a week for children to work 1:1 on their IEP targets, which may include focus

on Mathematics targets.

Children for whom English is not their first language

We aim to link mathematics to cross-curricular subjects and topics and seek to take advantage of multi-cultural aspects of mathematics. In mathematics lessons we support children with English as an Additional Language and children with various educational needs in a variety of ways, e.g.: repeating instructions, speaking clearly, emphasising key words, using picture cues and visual representations, playing mathematical games, encouraging children to join in counting, chanting, playing finger games and use of rhymes.

4. Pupils' Work, Marking and Assessment

Pupils' Records of Their Work

All children are encouraged to work logically and neatly when recording their work, in line with our school presentation policy. Children in Ks1 and Ks2 work in exercise books with 7mm or 1cm squares and the ideal expectation is that children record one digit in each square. Children draw a margin on each page and record the short date and the learning objective at the top of their work. Children in Ks1 and Ks2 also have a Maths Jotter book, which is A5 and consists of plain paper pages. The purpose of this book is to give children a blank canvas when recording investigation jottings or when supporting their learning through pictorial representations. There are times when squared paper can hinder this process (for example when representing fractions) and children may choose to work in their Jotter instead.

Children in Reception have a Learning Journal, in which all adult led and child initiated work is stored and annotated by staff.

Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording. It is important for children to be able to use multiple representations and identify the most suitable for them in different contexts. Children are also encouraged to select whether a mental or written strategy would work best for them. Please see Calculations Guidance for a detailed description of different methods for each year group and the progression in calculations throughout the school.

Marking

September 2016 – our whole school marking policy is under review. We are in a trial period until November 2016, where all staff will feed back on the marking process. We are currently trialling a marking method using a form of distance marking. Books are marked and children's understanding of the LO is recorded on a separate sheet. There is no expectation for comments, if children have made 'slips', then these can be identified with a green highlight and when appropriate, the teacher may encourage pupils to correct them.

Based on their progress each lesson, children are given a number (1,2,3 written in the margin next to the LO) to reflect the next step in their learning. At the start of the next lesson, children start the task next to their number on the board. This task may be further practise, working with adult support or a range of opportunities where children can consolidate their learning before moving on. If marking demonstrates lack of understanding for a small number of children, the teacher will address this by working with or setting an appropriate task for the child at the start of the next lesson as described. If errors demonstrate lack of understanding for a large number of children, the errors will be addressed in the next lesson.

The information below relates to our pre September 2016 policy. Many of the points are still appropriate, but it is currently not a routine expectation that comments will be included on children's work.

- *Books may be marked by teachers or teaching assistants, with the teacher being ultimately responsible for the marking of their children's work. If an adult other than the teacher marks the work, they should initial their comments. Children are involved with marking their own work where appropriate also. All marking carried out by an adult should follow the school marking policy. Key expectations for marking in Mathematics are as follows:*
- *If a child has achieved their learning objective, it should be highlighted in pink. If a child has not achieved their learning objective, it should be left blank. If a child has almost achieved the learning objective, a green question mark should be written in the margin next to the LO.*
- *If comments are written, they should clearly be identified in pink or green. It is not always appropriate for a comment on every piece of work, but teachers should use marking to clearly support the learning and progress of their children. Comments written in green may pick up on any errors or provide modelled examples for corrections.*
- *Children should self assess their work by drawing a happy, straight line or sad face next to the learning objective. If children feel they have met their current target they should write T in a circle next to the margin. Each lesson, teachers will provide time for children to reflect on their previous work and, if appropriate, discuss it with a teacher. In this time, children should initial comments written by an adult to show they have read them, and do any corrections or answer questions set. We aim to encourage children to do this from as early on in the school as possible.*
- *There may be occasions where children self or peer mark work. This is a useful tool to foster independence in children and can encourage them to reflect on and correct their*

own work. All marking done by children will be checked by the teacher or teaching assistant.

- *If the child has struggled with an objective and a teacher deals with this as part of a booster session or follow up work, this should be noted in their book.*

Assessment

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

- Short-term assessment will be an informal part of every lesson. The teacher will share the objectives and success criteria for the lesson with the children and make sure they are clear what is being expected of them to successfully achieve the objective. This is a necessary part of Assessment for Learning and helps the children take ownership for their own learning. Teachers will use Assessment for Learning strategies on a regular basis to assess the children's understanding and inform future planning.
- Medium-term assessment will take place on a half termly basis. Children will all take a Mathematics test using an Assertive Mentoring test (part of our consistent assessment policy, reading, writing and maths are all assessed using the AM system). There are 6 tests for each stage (year group) and the children should be working on their age appropriate stage or the stage below as needed, although there will be exceptions when children work at lower stages. Children will never attempt a test at a higher stage than their age appropriate stage, as this goes against the school and National Curriculum policy of deepening learning rather than accelerating ahead. The outcomes of every question in each child's assessments will be recorded by the teacher on an electronic system, and used to analyse gaps in learning and inform future planning. Assessments are reviewed by the Assessment Leader and Mathematics Leader.
- Standardised assessment will take place at the end of KS1 and 2. Pupils in year 2 and 6 this will take compulsory SATS tests in May each year.
- Assessment in EYFS is an on-going and integral part of the learning and development process. The staff make systematic observations and assessments of each child's achievements, interests and learning styles. These assessments are used to identify learning priorities and plan the next stages in the learning experiences for each child. Assessments may take the form of written observations, photographs, examples of work and notes. These judgements are then matched to the Early Learning Goals and recorded each term on the EYFS profile. Near the end of the Reception year, teachers may make use of Assertive Mentoring strategies from KS1 for assessment as appropriate.

Tests of Mental Arithmetic/ Basic Skills

Children will complete a Basic Skills Maths test once every two weeks. This is followed immediately by discussion with the whole class so that any misconceptions can be put right and the merits of different methods discussed. Children may also complete additional mental arithmetic or times tables tests during the teaching week, in or outside of the maths lesson time.

5. Home- School Partnerships at Hollywood Primary School

The school makes use of the following strategies to involve parents/carers with their child's learning in Mathematics:

- ✓ Parents are invited into school during the year to discuss progress with their child's class teacher at parents' evenings. At other times during the year, the Mathematics Leader and class teachers provide additional support or resources as required.
- ✓ When significant changes have been/are made to the mathematics curriculum parents are invited to a meeting or sent information via the weekly newsletter.
- ✓ Throughout the year, parents are invited to workshops, run by the Mathematics Leader or other teaching staff. These may be on mental and written calculations, problem solving skills, SATS or use of new ICT initiatives to help them support their children at home.
- ✓ Parents are able to see the school Calculations Policy online so they can see the methods their child is using, and previously has used. They are also sent a "how to help your child at home" booklet with ideas for games and activities.
- ✓ Parents can access MyMaths for support materials for homework.
- ✓ The website National Numeracy is shared with parents for further maths support for children and adults.
- ✓ The school aims to utilise the skills and interests of parents to help support our cross curricular mathematics teaching

Homework

It is our school policy to provide parents and carers with opportunities to work with their children at home (see separate Homework Policy).

Children in year 1, 2 and 3 will have a continuous cycle of one English, Mathematics or topic task set per week. Year 4 and 5 will have two tasks set per week out of English, Mathematics or topic. Year 6 will have at least one weekly Mathematics task to complete in addition to other daily homework. Children can complete homework online, using the MyMaths program, when it is appropriate to set this.

6. Monitoring and Evaluation of Teaching and Learning in Mathematics

Monitoring and evaluation of Mathematics teaching and learning is completed on a regular basis by the Mathematics Leader, in collaboration with other staff and the head teacher as appropriate.

Staff save their weekly Mathematics resources, teaching flipcharts, plans and highlighted National Curriculum Objective grids onto the school system where they can be accessed and looked at regularly by the Mathematics Leader, to ensure the objectives from National Curriculum and EYFS Framework are being covered as required. Any issues arising from this ongoing monitoring are then dealt with promptly.

At least once a term, a sample of children's books is collected in for detailed monitoring, including evaluation of progress. Planning/lesson resources are also formally collected in to look at planning alongside the outcomes produced by the children. In addition, a more specific sample of books may be collected to monitor provision for key groups (e.g: Pupil Premium, girls/boys etc). Oral or written feedback is then provided to staff.

Sample groups of children are interviewed to allow them to give their opinions on how their learning is being effectively facilitated and to allow them to suggest how they think their learning could be improved. This is done through lesson studies, IPRs and feedback to staff.

Opportunities for all teachers and teaching assistants to review the Policies and published materials/ICT are given as required during staff meetings. Where appropriate, the Mathematics Leader is released to work with other teachers in their own classrooms in order to work together to promote positive and effective Mathematics teaching throughout the school.

