



Hollywood Primary School

-Mathematics Policy -

Jenny Elvins

September 2017

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. Some children will work at greater depth, but we aim for all children to be given opportunity to work at depth within their own level of mathematics.

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
- √ 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, 4 and 5 are taught in their classes. Children in year 6 are currently taught mathematics in 2 sets. Children are taught Mathematics for one session per day.

We are currently moving towards a teaching for mastery approach and this year is a transition year as we work to embed teaching for mastery in the school. By the end of 2017/18, all lessons should make use of episodic teaching and a “ping pong” approach. Lessons should be rooted in context as much as possible, so children are aware of the real life applications of their Maths skills. Lessons begin with anchor tasks followed by a discussion of the findings and learning in the anchor task. Often there will be concrete or pictorial representations used here, and in other parts of the lesson. The first half of a lesson will usually feature discussions, paired work and episodic teaching of small steps of maths learning. The children will then complete a journal and/or maths book task and have chance to demonstrate the depth of their understanding. Teachers will use their judgment and the learning needs of the children as a starting point to adapt the lesson structure as required.

Lessons are structured with formative assessment opportunities throughout. Through effective questioning, teachers and children can evaluate what has been learnt, review success and address misconceptions. Lessons 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 children to evaluate, discuss, challenge and reason about their learning throughout a lesson.

Teachers in KS1 and KS2 use objectives from the Primary Curriculum 2014. They use the exemplified objectives on the White Rose Planning (White Rose Maths Hub) documents as a starting point when planning a series of lessons. No paper planning is required but all teachers must save their lesson flipcharts/powerpoints and lesson resources on the school system for reference, monitoring and to identify any need for support.

It is expected that from this, it will be clear to see the lesson structure and the resources and activities the teacher planned for the children to complete.

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 Shadow 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 and to ensure they have the subject and pedagogical knowledge to teach each concept excellently.

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. Children can also access 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.

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)
- Calculations Guidance (in association with White Rose Maths Hubs)
- NRich tasks and NCETM website for guidance
- "Maths No Problem" resources
- TES website
- 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 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 changed the setup of our groups and classes in 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. In line with the Primary Curriculum (2014) we do not 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.

As we work towards a Teaching for Mastery approach, all children will be given opportunity to deepen and strengthen their mathematical knowledge and understanding by working at “depth”. Children who 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 (NCETM).

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, place value counters, 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 as well as using skilful questioning to probe for and address misconceptions, or to deepen and extend thinking.

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 year we are selecting children to work on Catch Up Numeracy, a bought in scheme provided by TAs to aim to accelerate

progress of underachieving children. This aims to bridge the gap and enable these children to progress at a similar level to their peers.

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 or teachers work with 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 a 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 Journal book, which is A5 and consists of plain paper pages. The purpose of this book is to allow children a place to show the depth of their understanding of concepts and explain their thinking. Children write the date in their journal, currently no LO is expected to be written, as it should be clear from the children's work what the learning objective was.

Children in Reception have a Learning Journal, in which all adult led and child initiated work is stored and annotated by staff. They are developing the use of a Maths Journal too.

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

Please see Mathematics Marking Policy for more detail (included at the end of this policy)

In line with the whole school policy, books are marked using pink and green and children's understanding of the LO is recorded on a separate sheet. There is no expectation for comments. When teachers identify the positive aspects of the work, they use pink pen. 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.

Books may be marked by teachers or teaching assistants, with the teacher being ultimately responsible for the marking of their children's work. Children can be involved with marking their own work where appropriate also. Children should self assess their work by drawing a happy, straight line or sad face next to the learning objective.

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 involve the children with discussing and shaping the learning objective lesson with the children and make sure they are clear what is being expected of them. 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. Questioning is an excellent tool to support and challenge and teachers will have a range of planned questions to assess and deepen learning.
- Medium-term assessment will take place on a termly basis using PUMA tests.
- 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 the KS1 strategies 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). We have chosen to focus on times tables for homework. Children will be given a target times table/s to learn each week and practice at home.

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 and teaching flipcharts 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.

Date created – September 2017

Date updated – January 2018
Jenny Elvins

Hollywood Primary School Mathematics Marking Policy

Introduction

This policy is based upon the NCETM Marking and Evidence Guidance for Primary Mathematics Teaching (2015). In this document, 'marking' is taken to mean the process whereby a teacher looks at pupils' written work, examines it for errors, misconceptions and/or conceptual and procedural fluency, and then responds in some way, either in writing, speech or action.

Research (Black et al 2003) shows that the most effective and beneficial forms of assessment are ones which support learning (i.e. are formative) and are built-in to lesson design. In primary mathematics they require:

- well-structured classroom activities (involving conceptual and procedural variation and intelligent practice);
- regular opportunities for discussion of answers and strategies to support pupils' reasoning skills and check and deepen their understanding;
- interaction and dialogue (between teacher and pupils, and between pupils themselves), focusing in particular on key ideas and concepts (including misconceptions and difficult points) and effective, efficient strategies of working mathematically.

We believe that the most important activity for teachers is the teaching itself, supported by the design and preparation of lessons.

Marking and evidence-recording strategies should be efficient, so that they do not steal time that would be better spent on lesson design and preparation. Neither should they result in an excessive workload for teachers.

The policy must be:

- ✓ consistently applied by all staff;
- ✓ clear in its purpose;
- ✓ manageable;
- ✓ productive in its outcomes;
- ✓ informed by pupils' individual learning needs and assessments.

Teacher's handwriting

All teacher comments should model the school's handwriting policy. **It is vital that all teacher comments are legible.**

If writing any written comments, consideration should be given to the following questions:

- Can children read your comments?
- Have you modeled effectively the school script?
- Can the children understand your comments?
- Do you allow time for the children to read your marking?

Initialling work

When anyone other than the class teacher has marked the work, for example a supply teacher, teaching assistant or child, the work must be initialed. If the work is not initialed, the assumption is made that the class teacher has marked that work. This supports the monitoring process.

Marking in Books

When marking books (maths books or journals), teachers fill in a marking sheet for the lesson. On here, they will identify children who are secure with the LO, those who may need some additional practice and those who are not secure and need further intervention. This will inform planning for the next lesson. If a maths book and a journal has been used in the lesson, the marking sheet should reflect the child's overall learning that lesson.

In the books, correct work is highlighted/ticked in pink when it is correct (tickled pink) and green when it is incorrect (green for growth). When marking errors, it is important for teachers to distinguish between a pupil's simple slip and an error that reflects a lack of understanding:

For slips, teachers simply indicate where each slip occurs through highlighting. When appropriate, the teacher may encourage pupils to correct them.

If errors demonstrate lack of understanding for a small number of children, the teacher will address this by making a comment as appropriate in their book, noting their names on the marking sheet or working with or setting an appropriate task for the child in the next lesson

It is not be a routine expectation that next-steps be written into pupils' books. The next lesson should be designed to take account of the next steps. However, if teachers wish to write appropriate comments, including next steps, in the children's books, they may.

The emphasis in marking should be on both successes against the learning outcome and improvement needs against it.

Other forms of marking and feedback

- **Formative feedback/markings**

Episodic teaching in Maths allows many opportunities for oral feedback. Oral feedback is the most powerful form of feedback and has maximum impact when pointing out successes and improvement needs against the learning outcomes. It may also give reassurance or a quick check on progress.

In the course of a lesson, teachers' comments to children should focus firstly on issues about the learning outcome and secondly on other features.

- **Peer and self-assessment**

By developing the skills of self and peer assessment, the children learn how to check their own work and to identify their own targets for development.

For self and peer assessment to be effective the following points should be considered:

- A growth mindset culture should be prominent within the classroom and peer assessment should not hinder self esteem
- Children should be trained in the process of self-evaluation/peer assessment.
- This process should be regularly modeled by the class teacher;
- Feedback/peer assessment can be oral or written, according to the ability of the child/ren and the nature of the task.

- **Shared marking**

Using the visualiser at regular intervals to either model effective AfL or to look at, dissect or mark a child's work is a powerful tool. This helps to model the marking process and teaches particular developmental points at the same time.

Another strategy is to show two pieces of work, for example written explanations of reasoning, to discuss the differences and how to improve the work.

Date created – January 2018

Jenny Elvins