

# WELLGATE PRIMARY SCHOOL

## POLICY FOR MATHEMATICS

“Excellent teaching gives children the life chances they deserve...  
Enjoyment is the birthright of every child.  
The most powerful mix is the one that brings the two together.”

(Quote from home page of The Primary Framework for Literacy & Mathematics.)

### Rationale

Mathematics plays an important role in all of our lives. We use it in everyday activities such as shopping, measuring, keeping time, making estimations and judgements about speed and distance whilst driving and when playing sports and games. An understanding of mathematical skills and concepts, together with the ability to apply them, can equip our children with a powerful knowledge with which to understand the world and to improve it.

### Purpose

The purpose of our mathematics policy at Wellgate Primary School is:

- To establish an entitlement for all pupils.
- To establish expectations for teachers and pupils.
- To promote continuity and coherence across the school.
- To promote better understanding of mathematics within school and the wider community.

### Aims and Objectives

We aim for each child to:

- Have a positive attitude towards mathematics.
- Have confidence in their mathematical ability.
- Be able to work systematically, co-operatively and with perseverance.
- Be able to think logically and independently.
- Experience a sense of achievement regardless of age or ability.
- Understand the appropriate underlying skills, concepts and knowledge of number, measurement, shape & space and handling data.
- Be able to apply previously acquired concepts, skills, knowledge & understanding to new situations both in and out of school.
- Understand and appreciate pattern and relationship in mathematics.
- Be able to communicate with peers and adults, ideas, experiences, questions, clearly and fluently, using the appropriate mathematical vocabulary.
- Be able to explore problems using the appropriate strategies, predictions and deductions.
- Have equality of opportunity regardless of ability, gender or race.
- Be aware of the uses of mathematics beyond the classroom.
- Encourage the use of mental calculations and efficient strategies to work out solutions.

We would like parents to:

- Be actively involved in their children’s mathematical learning both in school and at home.
- Develop positive attitudes towards mathematics and actively support their children in practising mental strategies at home, in particular their times tables.
- Understand and support the school’s mathematics policy and teaching.
- Be well informed of their children’s progress through annual Records of Achievement, parents’ evenings and target leaflets each term.

### Expectations

By the time children leave our school we expect them to be confident and able mathematicians able to communicate their thoughts and understanding effectively.

By the end of Key Stage 1 the majority of children will be working within the range of Levels 1 – 3. Most pupils are expected to achieve level 2B or above.

By the end of Key Stage 2 the majority of children will be working within the range of Levels 3 – 5. Most pupils should achieve level 4 or above.

## Management of Mathematics

### Roles and Responsibilities

The Maths Co-ordinator will lead by example and will support other teachers in planning, teaching and assessment. She will work to secure high quality teaching, effective use of resources and the highest standards of learning and achievement for all pupils across both key stages. The co-ordinator will monitor standards in maths across the school through classroom observation, work scrutinies, teachers' planning, pupil dialogue and, alongside the Senior Leadership Team, data analysis and pupil progress meetings. She will work with the Head Teacher to monitor and evaluate teaching and progress. She will identify staff training needs, plan and deliver staff meetings. The co-ordinator will attend LEA meetings for subject leaders and other appropriate courses.

The Head Teacher supports the mathematics co-ordinator and staff in carrying out the Mathematics Policy. She sets high expectations and monitors teaching and progress and discusses the implications of these with the co-ordinator. She encourages a whole school approach, keeping staff, support staff, governors and parents well informed. She regularly reviews the current Maths Action Plan. The Head Teacher will ensure that mathematics is given a high profile in the school's development work for excellence.

The Special Needs Co-ordinator will support the mathematics co-ordinator and teaching staff in managing children with special educational needs. All teaching staff will use the objectives in the Framework when preparing Individual Education Plans.

The teachers will implement the daily three part maths lesson sharing clear learning objectives with the children. They will use a range of teaching styles such as whole class direct teaching, group/paired and individual work. They will use the Primary Framework (2007) for planning appropriate, differentiated and challenging lessons with an awareness of end of year objectives for assessment. They will use the designated medium and short term planning formats agreed on by all staff. They will set differentiated sub-levelled targets for their ability groups/classes and will remind children to practise their times tables at home along alongside rapid recall of other number facts (dependent on each child's ability).

Teaching Assistants will be included in staff training for mathematics where appropriate. They will have a copy of/access to teachers' plans and a clear understanding of their role in each part of the lesson. They will share the learning objectives for each lesson and know, demonstrate and encourage the use of the key vocabulary for the lesson.

### Time Allocation for Mathematics

Children in our Nursery and Foundation Unit will be taught maths daily. The main focus of the lesson will be taught in larger groups during the day and activities and follow up work will occur in a range of cross curricular activities during later sessions.

In KS1 the daily mathematics lesson will last between 45 minutes and 60 minutes.

In KS 2 the daily mathematics lesson will last 60 minutes, beginning at 9:10am.

### Cross Curricular Maths

Mathematics is taught discretely each day with opportunities for cross curricular learning planned for regularly. We identify the mathematical possibilities across the curriculum at the planning stage. We also draw children's attention to the links between maths and other curricular work so children can see that maths is not an isolated subject. As maths is such a vast subject that is embedded in everyday life it is expected that it will be applied across the curriculum in all subject areas. In role play activities, children will have a range of opportunities to use the 4 operations, estimate, measure and problem solve in real life situations. Children will be encouraged to use and apply their mathematical skills and knowledge in all areas of the curriculum.

## The Daily Maths Lesson

Children in our Nursery and Foundation Unit are taught maths daily. They are taught in groups that have been differentiated by ability. The main focus of the lesson is taught in larger groups during the day and activities and follow up work for smaller groups, pairs and individuals occurs in a wide range of cross curricular activities undertaken during the day.

The daily 'Numeracy Hour' in KS1 and KS2 classes is taught as a three part lesson. The first part, the 'Mental and Oral Starter' is a lively session, which may/may not be related to the main part of the lesson, and is designed to 'switch children on', get them thinking and catch their interest. They may practise targets, recall and use a range of resources with which to show their answer.

The middle part of the lesson contains the main teaching points and differentiated activities for the three groups. The final part is the plenary which is used to rectify any difficulties or misunderstandings, to consolidate learning, to move the children's learning on in anticipation of the next lesson or for children to report back what they have done and how they did it and to explain their reasoning.

The teacher will plan which group the T.A. will support, which group to support as 'Guided Maths' during the lesson and in addition will check on the other groups/tables during the lesson to keep them on task and to understand how they are progressing. The T.A. will need to quickly communicate how her/his group have managed so that the teacher may address any issues in the plenary session.

In some year groups, where deemed advantageous by the class teachers, co-ordinator and SLT, the children in that cohort may be arranged in ability sets. The same planning and objectives will be used for both sets but the pace, opportunity to move on further faster, the time for further consolidation or the targeting of a particular group of pupils is made more feasible where there is a very wide range of ability.

## **Mega Maths Multiplication Mission**

Pupils from Years 2-6 take part in Barnsley LEA's Mega Maths Multiplication Mission. This aims to encourage pupils to make particular efforts to learn their times tables. Pupils undertake tests for this award once per half term. Pupils who successfully achieve one of four awards – Bronze, Silver, Gold, Platinum, have these presented in a special assembly. Pupils who are working below age related expectations can be presented with a special achievement certificate at the discretion of their class teacher. Children in Year 1 participate in a similar award which focuses on knowledge of number bonds. All class teachers have been provided with a Mega Maths File which contains information relating to this award.

## **Display**

At Wellgate, we recognise the importance of interactive and kinaesthetic displays in order to encourage mathematical enquiry and stimulate the interest of pupils. Display can also provide an invaluable opportunity to present maths in a range of real life contexts. Each classroom should have an attractive interactive maths display with hands-on activities for pupils to experience. The whole schools maths display aims to engender a love of maths and provide activities for all ages.

## Planning and Assessment

### **Planning**

All maths lessons are planned from the new Primary Framework (2007) and have learning objectives and mathematical vocabulary taken from the appropriate termly blocks. Learning objectives are changed into simple, child friendly language by the teacher and used as a WALT and WILF for the mental and oral starter and the main part of the lesson. Differentiated WILFs are used for the three ability groups' activities if this is relevant to the age and task. The objectives should be clear, and referred to during the lesson, so that children are sure what is required of them to achieve success during that lesson. Their success is marked against their WILF and this is fed back to them during or after the lesson as either oral or written feedback.

Short term weekly planning should list the key mathematical vocabulary to be used and this should be demonstrated and practised during the lesson. The role and positioning of the Teaching Assistant should be made clear on the plan, a copy given to the T.A. and precise instructions given before the lesson so that the T.A. has a clear understanding of what is required of them.

Main teaching points, key facts and leading questions should be noted in the main part of the lesson, along with an outline of each group activity. Resources for the lesson should be noted and organised ready for the lesson. A brief outline of focus, key points and questioning for the assessment for learning is required for the mental and oral starter and for the planned plenary as well as the main part of the lesson. Afterwards both the teacher and the teaching assistant should use the class APP file to make notes on the children in their group and mark which children have completed the relevant statement. Medium, half termly plans are again taken from the objectives set down in the new Primary Framework (2007). Teachers will plan from the termly units but may change the order of the blocks A – E as required.

They are:

Block A: Counting, Partitioning and Calculating

Block B: Securing Number Facts, Understanding Shape

Block C: Handling Data and Measures

Block D: Calculating, Measuring and Understanding Shape

Block E: Securing Number Facts, Relationships and Calculating.

Medium term plans need to show how much time will be allocated for an objective to be taught and some similar objectives may be taught together.

A copy of all planning, medium and short term, should be placed in the appropriate folders in the maths folder of the computer staff area (some is also given to the coordinator).

### **Assessment**

Each class has an APP file which is split into table groups. Each section has the relevant APP statements for that group (these are split into levels and organised into a table format). Some classes also have a book for each group so that teachers and teaching assistants can make notes about individual children (this can be something a child has done really well or found really difficult). Teachers and teaching assistants make continuous, small, immediate on the spot assessments about how a child, group or class is progressing during every lesson and this can be noted in the group's APP book or on the short term planning.

Each half term children are set individual sub-levelled targets. These are stuck in the children's books and they know which targets they are currently working on and what they need to do to achieve them.

Teachers will use the APP statements to judge what level each child is, these levels will be recorded at the end of the Autumn and Spring term. In the summer term Y2 & Y6 will participate in the national SATs tests and Y3, Y4 & Y5 will sit a 'internal' SAT. Y1 will be assessed with the level 1 maths tasks twice a year. All results will be recorded and analysed by the maths coordinator.

Next steps:

The 'Rising Stars' assessment unit tests will be used at the end of each unit and then again at the beginning of the next unit (e.g. A1 will be used at the end of A1 and at the beginning of A2). These will help teachers to make informed decisions about where each is alongside the APP judgements.

Children are informed of their success in a lesson both verbally and through written forms of communication. If the child achieves the WILF the teacher will stamp 'objective achieved' beside it thus informing the child of their success. The teacher will inform the child of where they can take their learning next or which sections they need to work on (again this could be verbal or written).

### Self Assessment

Children are encouraged to think about what they are learning and to make judgements about how well they think they are doing. These assessments are ongoing during lesson time taking the form of a show of 'thumbs' to show if they understand or not, discussing work, ideas, explanations etc. with a 'Talking Partner' or answering questions and explaining to the rest of the class.

### Talking Partners

The opportunity to reiterate what they have just learnt, to consolidate a point, to explain a method, idea or your thinking is invaluable for children during the maths lesson. It will accelerate learning and increase confidence and is therefore a vitally important part of every lesson.

### Recording

Much of the mathematics done in KS1 will be practical activities and will not be formally recorded. Generally, the younger the age group, the less written recording they will have done. In Foundation and Year 1 photographs showing the children working on an activity are used to supplement class/group recording. These will contain a quote of what the child is saying about their work with a brief outline of the task and the learning objective it is covering. Year 1 upwards will begin to record some of their work in books and folders or loose papers. Children in year 2 have many opportunities to record to prepare them for their end of year SATs.

Recording should always be purposeful, to practise a written strategy, to explain a method or reasoning, to use signs and symbols etc.

### Reporting Progress to Parents

Parents are given information about their child's progress at anytime. Our school has an 'open door policy' at all times and a parent is able to arrange to speak to a teacher at anytime (parents also receive leaflets each term which contain information about their child's maths target and which ability group their child is currently working in). Parents are invited to regular open days/evenings, family learning sessions and other events during the year and towards the end of the summer term receive a Record of Achievement for their child and an opportunity to come into school to discuss it with the class teacher.

### Monitoring & Review

The Senior Leadership Team and/or mathematics co-ordinator will monitor lessons during each academic year. They will discuss their findings and give positive, helpful feedback to teaching staff. They will monitor planning before and after the lessons are delivered and will check that the teacher's observations and assessments about the lesson are noted on the plan to inform future planning and assessment. They will conduct regular work scrutinies and pupil dialogue sessions and use these to help support their conclusions about mathematics in our school.

Towards the end of each summer term the mathematics co-ordinator will complete a Maths Action Plan Evaluation, draw up a list of priorities to be acted upon in the next school year and build them into the Mathematics Action Plan for the coming academic year. The Head Teacher will then use this to inform the school's Developing Excellence Plan.

The Maths Action Plan is reviewed regularly during the year.

### Homework

Children are encouraged to practise their times tables at home and other number facts (relevant to their ability group). They are encouraged to use maths in real life situations e.g. when they are shopping, helping to bake at home. Children in year 6 take maths homework home weekly to prepare them for their transition to secondary school. This can be written or practical.

### Staff Development

Teachers are expected to keep up to date with subject knowledge and use current materials that are available on the Standards website or in school.

Staff training needs are identified by the Head Teacher, Senior Leadership Team and maths co-ordinator as a result of whole school monitoring and evaluation and performance management. These will be reflected in the school's Developing Excellence plan which includes the Mathematics Action Plan. The maths co-ordinator will arrange for relevant advice and information, such as the feedback from courses, to be disseminated. Where necessary, the maths co-ordinator will organise and lead school based training for teachers and T.A.s.

The Local Education Authority run courses each year for co-ordinators, NQTs, SATs teachers, teaching assistants, teachers in KS1, KS2 and in specifically targeted year groups.

### Special Educational Needs and Intervention Programmes

Children who do not achieve average attainment for their age group will be identified from the Traffic Light Assessment forms. The needs of many of these children will be catered for in the use of appropriate methods and activities, adult support in lessons and the differentiation of the daily maths lesson. Children in Y4/Y5 who are deemed 'just below' by one or two sub levels may be eligible for a Springboard Mathematics course which consists of ten units, two lessons in each, designed to support and consolidate work done in class. KS2 children who are significantly below the average may be suitable to try WAVE3 SEN maths program. The maths co-ordinator and class teacher will decide which children would benefit from an intervention program or IEP. Children in KS1, and occasionally in KS2, may need a maths target including on their IEP.

Planning for more able pupils, who may be listed for mathematics on our Gifted and Talented register, is in line with our policy for these children. There are regular opportunities for them in lessons to extend their thinking further and challenge themselves.

### Inclusion

Mathematics is offered to all children in our school irrespective of ability, gender or race and in line with the school's Equal Opportunities policy. All children receive teaching on a daily basis and activities are differentiated accordingly.

The needs of children with English as an additional language will be met through planning and support from outside agencies where appropriate. This is supported by our Equal Opportunities policy.

### Gifted and Talented

Although we believe at Wellgate that all pupils have gifts and talents, we recognise that some pupils have areas in which they are particularly able, one of which is maths. Mathematically able pupils are identified and placed on the school's Gifted and Talented Register. The class teacher makes provision for pupils who are particularly able in maths. All teachers provide differentiated activities for pupils, in addition other provision may be made including mathematical challenge activities, and the use of a teaching assistant to develop thinking and provide additional challenge.

### Resources and ICT

General maths resources for Foundation and KS1 and KS2 are kept in the infant corridor below the Mega Maths display. Each class will also have a wide range of equipment and resources appropriate to their year group and both classes will have the same items. Some resources, such as digit cards and arrow cards, will be in use through both Key Stages. Other resources should demonstrate some continuity and progression between the year groups.

The school has some good ICT resources available to use such as 2Simple Maths. We also have access to the maths resources on ESPRESSO and other educational sites on the internet. Teaching games can be accessed on classroom computers, interactive Smartboards and, for the whole class together, in the computer suite. There is also a range of programmable toys and 'bots' available for use in maths lessons to support topics such as position, movement, shape, angles and problem solving.

### Transfer to Secondary Education

For continuity, progression and liaison a copy of each child's progress will be forwarded to the appropriate school. Children in year 6 are also given homework to help prepare them for this transition.

### Review

Review of the Mathematics Policy and any programmes of work takes place as part of the annual renewal of the Mathematics Action Plan which informs the school's Developing Excellence plan.

Julie Simm

Mathematics Coordinator, TLR, SL.

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