A WHOLE SCHOOL POLICY FOR MATHEMATICS

At Waverley Primary School we recognise that mathematics equips children with uniquely powerful ways to describe, analyse and access the world around them. The National Curriculum (2014) states that *'pupils who are functional in mathematics and financially capable are able to think independently in applied and abstract ways, and can reason, solve problems and assess risk.'* It is important that we provide the children in our care with a broad maths curriculum that enables them to progress in the skills and experiences needed for 'real life'.

AIMS

It is our aim that each pupil should achieve the highest level of performance they are capable of in every aspect of the mathematics curriculum. In accordance with the National Curriculum our school aims to enable its pupils through:

- ✓ The inclusion of all children in daily maths lesson, using a range of approaches;
- ✓ A broad and balanced mathematics curriculum;
- ✓ Challenge for all children no matter of their ability;
- ✓ The promotion of mathematics as a subject for enthusiasm and enjoyment;
- ✓ The use of mathematics in a range of contexts;
- ✓ The use of ICT;
- ✓ Practical and relevant activities which develop skills and experiences in real life contexts;

Mathematics is 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. It also provides the materials and means for creating new imaginative worlds to explore.

Using the Programme of Study from the National Curriculum it is our aim to develop:

- ✓ A positive attitude towards mathematics and an awareness of the fascination of mathematics;
- ✓ Competence and confidence in mathematical knowledge, concepts and skills;
- ✓ An ability to solve problems, to reason, to think logically and to work systematically and accurately;
- ✓ Initiative and an ability to work both independently and in cooperation with others;
- ✓ An ability to communicate mathematics and use mathematical vocabulary effectively;
- ✓ An ability to use and apply mathematics across the curriculum and in real life;
- ✓ An understanding of mathematics through a process of enquiry and experiment.

TEACHING MATHEMATICS

Teaching Time

To provide adequate time for developing numeracy skills each class teacher will provide 5 daily mathematics lessons per week. This may vary in length but will usually last 60-70 minutes. Additional mathematics may be taught within other subject lessons when appropriate, such as Geography and Science. Throughout the day, the children are encouraged to recall mathematics, for example, using times tables to line up.

Teachers of the children in our EYFS unit, base their teaching on objectives in the 'EYFS Framework'. Towards the end of Reception teachers aim to draw the elements of a daily mathematics lesson together so that by the time children move into Year 1 they are familiar with longer, direct 'numeracy hour'.

From Year 1, all pupils will have a dedicated daily mathematics lesson. Within these lessons there will be a good balance between whole-class work, group teaching and individual practice.

Mathematics Lessons

At Waverley Primary School, we do not have a set structure for the delivery of mathematics. Some lessons may be delivered as a three-part lesson: MOS, main teaching and then a plenary, we do however recognize that investigative lessons may not follow this format: typically mini plenaries may be employed to re-shape the lesson. Teaching should be focused on ensuring progress of all pupils in the class and it is therefore up to a teacher's professional judgement as to how this is to be delivered.

A lesson in Year 1 to 6 may therefore have the following components:

- Oral and mental work across the range of mathematics. This will involve whole-class work to rehearse, sharpen and develop mental and oral skills.

- Main teaching session. This will include both teaching input and pupil activities and a balance between whole class, guided group and independent work, that is effectively differentiated and offering appropriate challenge. Sometimes the focus for this session may be new learning, at other times pupils may be practicing to master the application of a concept they have learned earlier. The focus of this session may vary for different children, depending on their learning needs.

- Plenary. This may involve work with the whole class to sort out misconceptions, identify progress, to summarise key facts and ideas and what to remember, to make links to other work and to discuss next steps.

PLANNING OF MATHEMATICS

EYFS

In EYFS short term units are developed using specific objectives from the 'Problem Solving, Reasoning and Numeracy' (PSRN) section of the EYFS Framework. Although activities encouraging children to develop mathematical skills are available throughout the day in the EYFS unit, direct teaching activities appear several times throughout the week before moving the children to a longer, daily session when they are ready in preparation for the transition to Key Stage 1.

PSRN is made up of the following aspects:

Numbers as labels and for counting – is about how children gradually know and use numbers and counting in play, and eventually recognise and use numbers reliably, to develop mathematical ideas and to solve problems.

Calculating – is about how children develop an awareness of the relationship between numbers and amounts and know that numbers can be combined to be 'added together' and can be separated by 'taking away' and that two or more amounts can be compared.

Shape, space and measures – is about how through talking about shapes and quantities, and developing appropriate vocabulary, children use their knowledge to develop ideas and to solve mathematical problems.

Mastering Number – Reception class children follow the Mastering number program where they develop skills in counting and ordering numbers. They develop skills in subitizing alongside ordinality, giving a depth of understanding of numbers.

Key Stage 1 and Key Stage 2

Our Medium Term Plans largely follow the timetable suggested by White Rose. 'S' planning is currently in development with staff using a range of materials from the NCETM Prioritisation program, White Rose and the Oak Academy materials.

Teachers use this, and the timings provided on it, to plan their daily sessions. At Waverley, we recognize that they act as guidelines and teachers continuously assess children's learning and adapt the teaching and timings needed for different cohorts of children.

Non-Negotiables

At Waverley, we have introduced a set of non-negotiables for each year group from Year 1-6. These are a list of concepts that each child must be able to do before they transfer to the next year group. The staff present/discuss these at our regular pupil progress meetings with the Headteacher/Mathematics subject leader. As these tend to focus

around number and calculation, Key Stage 2 teachers have a 'formal' day where they have an arithmetic focus.

Reasoning and Problem Solving

At Waverley, we recognize that children need to be able to apply their basis mathematics skills to everyday problems. All staff use a range of materials to find suitable problems to use in their lessons. Evidence of reasoning and problem solving is evident in teachers' planning and children's exercise books. The children are given daily opportunities to apply their understanding and application in RPS.

Times Tables

At Waverley, we believe that the children need to secure an excellent knowledge of their times tables (by Year 4), be able to apply them to problem solving and be confident to use them at all stages of their education. Teachers use our 'Times Table Planner' to guide them in which times tables the children should be working on, developing fluency, accuracy and application. The timetable is non-negotiable.

ASSESSMENT OF MATHEMATICS

At Waverley, assessment of learning is continuous.

Children in EYFS are assessed using a 'look, listen and note' approach which then informs the practitioners of where the children are in their learning and will give the next steps for learning. This also informs the basis of the EYFS Profile.

Assessment is an informal part of every lesson (AfL). Teachers share the objectives for the lesson with the children and make sure they are clear about 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. The short term assessment will also involve the teacher checking the children's understanding at the end of the session to inform future planning and lessons. Where appropriate, children are encouraged to take control of their learning, by selecting the 'challenge' that they feel is most appropriate for their continued learning and challenge. A traffic light system is used, where the children code their learning objective according to they way they feel they have understood the lesson. Children's work is marked accordingly (see Marking Policy). Children are also encouraged to revisit their marked comments to carry out any extra tasks and to 'close' that piece of learning (see Marking Policy).

At the end of the Autumn, Spring and Summer terms, more formal tests (NTS assessments) are administered to confirm the levels (ARE) given. In places, QLA is used to highlight any areas of weakness and 'next steps' are given to ensure pupil progress. Data is entered on a termly onto the school's networked tracking system.

In Year 6, children are monitored on a half-termly, using both NTS assessments and past SATs.

ICT AND MATHEMATICS

Information and Communication Technology is used to enhance the learning experience and support effective teaching. At Waverley, a wide range of media are used on the interactive white boards to support the teaching of mathematics. Children develop their understanding of concepts through games and interactive activities, making their learning fun. Software, such as excel, is used alongside traditional methods within sessions, showing children the value of all media. We have invested in Times Tables Rockstars and Doodle Maths. Each program targets children's learning and children are able to, indeed encouraged to, access these programs at home.

INCLUSION – PROVIDING EFFECTIVE LEARNING OPPORTUNITIES FOR ALL CHILDREN

At Waverley, we believe that all children regardless of age, ability, gender and race should have access to the Mathematics Curriculum. They are therefore supported in a way that enables them to reach their full potential.

Planning and teaching are differentiated to ensure all children's needs are fully met including: those with special educational need, gifted and talented children and children with EAL. The renewed online framework allows teachers to easily track back and forwards through a progression strand to locate earlier and later learning objectives.

At Waverley, all groups of children are set suitable and challenging learning objectives and teachers respond to pupil's diverse learning needs within their class. Differentiation can take many forms including:

- ✓ task – different tasks are provided for children of different abilities;
- ✓ resources – the same tasks are given but some children are provided with addition resources to support learning e.g. number lines, number squares, counting aids etc;
- ✓ increased support – either from the teacher or other adult;
- ✓ questioning – teachers ask differentiated questions to extend the thinking of pupils as appropriate;
- ✓ teaching styles – a range of visual, auditory, kinaesthetic activities are used to address different learning styles within the class.

SEND

Children with special educational needs and disabilities will have individual targets on their IEP's and these are reflected in teachers' planning. Children with SEND can receive extra support from the TA or SEN teacher which may take place within or outside of the classroom. Children with specific needs may follow an individual or group intervention

programme e.g. Doodle Maths, therapies and/or pre-learn techniques in guided maths sessions.

EAL

Children who have English as a second or additional language will be integrated into regular Mathematics sessions where activities and vocabulary where additional support will be given. Visual props and pictures will be used to help children to access the curriculum.

PARENTAL INVOLVEMENT

It is our aim at Waverley to involve parents directly in the life of their children at school. We operate an open-door policy where, if parents have any concerns, we are happy to invite them into school and regularly speak informally at the end of the school day. We actively inform parents of events within school. During the Spring term we invite parents of children in Year 2 and Year 6 to a SATs meeting, where inform them of the process of the formal assessment period. Parents are invited to two 'parent's evenings' in Autumn and Summer terms and an annual report goes to all parents and carers.

MANAGEMENT OF MATHEMATICS

Role of the Mathematics Coordinator

- ✓ Teach demonstration lessons;
- ✓ Ensure teachers are familiar with the framework and help them to plan lessons;
- ✓ Lead by example in the way they teach in their own classroom;
- ✓ Prepare, organise and lead INSET, with the support of the Headteacher and any linked consultant teacher;
- ✓ Work co-operatively with the SENDCO;
- ✓ Observe colleagues from time to time with a view to identifying the support they need;
- ✓ Attend INSET provided by LA maths consultants;
- ✓ Inform parents;
- ✓ Discuss regularly with the Headteacher and Mathematics Governor the progress of implementing the mathematics in the school.

Role of the Mathematics Governor

- ✓ Visit the school regularly to talk with the teachers and when possible, observe some of the daily mathematics lessons;
- ✓ Report back to the curriculum committee on a regular basis;
- ✓ Attend any relevant INSET or training.

Role of the Headteacher

- ✓ Lead, manage and monitor the implementation of mathematics, including monitoring teaching plans and the quality of teaching in the classrooms;
- ✓ With the Mathematics governor, keep the governing body informed about the progress of the framework;
- ✓ Ensure that mathematics remains a high profile in the school's development work;
- ✓ Deploy support staff to maximise support for the National Curriculum.

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