

Barnby Dun Primary School- Policy for Mathematics.

A. Introduction.

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Barnby Dun Primary school. The school's policy for mathematics is based on the document ' Framework for teaching mathematics from Reception to Year 6'. This policy has been developed as a result of staff discussion and has the agreement of the Governing body. The implementation of this policy is the responsibility of all the teaching and support staff.

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to identify, understand and appreciate relationships in number and space in their everyday lives. All children should be motivated to learn by a rich, creative, enjoyable curriculum related to their individual needs and the wider requirements of society. In our work in Mathematics, we are always striving for excellence and want to inspire children to do the same.

We aim for each child to :

- Have a positive attitude towards Maths as an interesting and attractive subject, in which they gain success and pleasure
- Have self-confidence in their approach to mathematics
- Be able to work systematically, co-operatively and with perseverance
- Be able to think clearly and logically, with independence of thought and flexibility of mind
- Experience a sense of achievement regardless of age or ability
- Understand the appropriate skills, concepts and knowledge of number, shape, space and handling data
- Be able to apply acquired concepts, skills, knowledge and understanding to new situations both in and out of school, and subsequently, in adult life
- Understand and appreciate pattern and relationships within mathematics
- Be able to communicate with peers and adults, ideas, experiences and questions, clearly and fluently, using the appropriate mathematical language

- Be able to explain reasons for own ideas, thoughts, findings and conclusions
- Be able to explore problems, in a range of contexts, choosing appropriate and efficient strategies, making predictions and deductions
- Develop an appreciation of the creative aspects of maths and an awareness of its aesthetic appeal
- Be aware of mathematics beyond the classroom- 'real life'

We aim for parents to:

- Be actively involved in their children's mathematical learning both in school and at home
- Understand and support the school's mathematics and homework policy

In order for parents to have a positive input into their child's attainment, we believe there should be good communication between home and school. For example, curriculum information is sent home at the start of each term and parents are informed of their child's maths targets at parent's evenings.

Equal Opportunity.

We are committed to providing a teaching environment conducive to effective and active learning. Each child is valued, respected and challenged regardless of ability, race, gender, religion, social background, culture or disability.

Every Child Matters

In all curriculum areas, and especially in the core subjects, we are continually and consistently teaching the 'values' embedded in 'Every Child Matters'. We want our children to enjoy mathematics and be enthusiastic about the learning and teaching that takes place every day in maths lessons. Much of our teaching needs to be aimed at developing children's skills for life and the children themselves need to understand the 'real-life' purpose of everything that they learn to do and how this can enable them to make a positive contribution to society in the future and achieve personal well-being. Children are encouraged to work in pairs or groups in all maths lessons to share ideas and opinions and develop essential teamwork skills of collaboration and co-operation. The 'climate for

learning' which we strive to develop in maths lessons, is one where children feel positive, secure, confident and they want to give their best. We encourage children to take ownership of their own learning and be the very best that they can be.

B. Planning, assessing and teaching Mathematics.

Maths is a core subject in the National Curriculum and we use the 'Primary Strategy for Mathematics' as a basis for implementing the Programmes of study for maths. Our planning always takes account of the diverse and changing needs of our pupils. Planning takes place at three connected levels: long, medium and short term.

Long term planning is taken from the Framework which outlines the yearly teaching programmes and key objectives from Reception to Year six.

Medium term plans outline the termly units of work and the main teaching objectives and when you will teach them.

Short term plans are weekly notes on how each lesson will be taught, detailing objectives, tasks, activities and groupings of children for the three main parts of the lesson. They include notes on resources, vocabulary, homework, use of LSA support and differentiation. Teachers are flexible and must adapt their planning to meet the needs of the children in the class, Teachers may use objectives from other year groups for children who are less able or to challenge more able children.

Teaching time.

To provide adequate time for developing numeracy skills, each class teacher will provide a daily mathematics lesson. This may vary in length according to the age and ability of children, but will usually be about 45mins in KS1 and 60mins in KS2.

A typical lesson.

A typical 45-60 mins lesson in Yr1-6 will be structured like this:

*Oral work and mental calculation (5-10 mins)

This will involve the whole class to rehearse, sharpen and develop mental and oral skills.

*The main teaching activity (30-40 mins)

This will include both direct, focused teaching input and pupil activities.

Teachers should ensure a balance between individual, paired, group and whole class activities and tasks. Independent groups may be mixed ability,

depending on the nature of the task. The teacher will have different focus groups at different points in the lesson. There will be a balance between teacher 'talk' and pupil 'talk'. Teachers make selected, critical use of published material.

*A Plenary (5-10 mins)

This will involve bringing the class back together to identify progress, summarise key facts, reinforce, discuss misconceptions, make links to the next lesson and celebrate success. It may be an effective strategy to bring the class together in other parts in the lesson to clarify teaching points or give further direction.

Homework.

The daily maths lesson will provide opportunities for children to practise and consolidate their skills and knowledge, to extend their techniques and strategies and prepare them for future learning. These may be extended through homework activities, which will be short, carefully planned activities and will be referred to, built upon and valued in future lessons. (see Homework Policy)

Teaching and Learning styles.

The school uses a variety of teaching styles to cater for the variety of learning styles of our pupils. Our principal aim is to develop the children's knowledge, skills and understanding in mathematics. We do this through a dedicated, daily lesson that has a high proportion of whole class and group teaching. We encourage children to ask as well as answer a range of questions. They use a variety of resources that help them learn in a visual, auditory or kinaesthetic way. Children use ICT to enhance their learning. Wherever possible, we encourage the children to use and apply their learning in everyday, meaningful situations. Mathematical displays stimulate questions, provide reference or celebrate success.

In all classes there are children of differing mathematical ability and also, children that learn in different ways. We embrace this fact and aim to 'personalise' the maths curriculum by closely matching the challenge of the task to the ability of the child. We achieve this through a range of strategies- in most lessons through differentiated group work and in other lessons by organising children to work in pairs on open-ended investigations of games. We use LSA's to support some children and extend others. Where necessary, children are taught in ability sets.

Responses to children's work.

We recognise the importance of responding to children's work in positive way, whether orally or in writing. We encourage children by highlighting and promoting achievements. This could include praising a child for using an appropriate strategy even if the end result wasn't correct. Stickers, stamps, effort points and certificates are used to reward good effort or achievement. Children are given many opportunities to explain their work to others and to show their work when it is appropriate. They are encouraged to value and respect the work of others.

ICT.

ICT is used in a variety of ways to support teaching and motivate children's learning. ICT will include calculators, Interactive teaching programs, use of maths websites e.g. Revisewise and maths games on CD-rom. ICT is used in the daily maths lesson when it is the most efficient and effective way to meet the lesson's objectives.

Cross-Curricular links with Mathematics.

Maths contributes to many subjects within the Primary Curriculum and where possible, children will use and apply mathematics in cross-curricular contexts.

English- Mathematics actively promotes the skills of reading, writing, speaking and listening. For example, younger children enjoy stories and rhyme that rely on counting and sequencing and older children encounter graphs and charts when using non-fiction texts.

Science- Almost every science investigation is likely to require one or more of the mathematical skills of counting, measuring, estimating, calculating, recording in tables and charts.

Art and DT- Measurements are often needed, many patterns and constructions are based on properties of shapes and spatial ideas. Designs need enlarging or reducing. When food is prepared a great deal of measurement is required.

History, Geography, RE- In these subjects children may collect data and make measurements of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position and ratio. The pattern of the days of the week and the calendar have a mathematical basis. Time lines are used in a similar way to the number lines they use regularly.

PE, music-Athletic activities require measurements of height, time and distance while ideas of counting, direction and symmetry are used extensively in music, dance, gymnastics and ball games.

PSHCE- The work that children do outside their normal lessons encourages independent study and helps them become responsible for their own learning. In class, children are encouraged to work together, discuss ideas and respect each other's views.

Assessment. (see Assessment policy)

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 assessing.

Short term assessments will be an informal part of every lesson and may be done through questioning or observation. The purpose is to check children's understanding which will enable teachers to adjust day to day lesson plans, plan the 'next steps', so that work is pitched appropriately and matched closely to individual's needs.

Medium term assessments will take place in each half term either by using APP materials or Non-Statutory Sats papers. They will assess the children's progress against the key objectives that have been covered. Teachers and pupils will use these assessments to set their personal mathematics target.

Long term assessments will take place towards the end of the school year to assess and review pupil progress and attainment. These will be made using compulsory National Curriculum Tests for yr2 and yr6 and the optional QCA tests for yr3-5. Children's responses to each question in the tests will be analysed to provide information about strengths and weaknesses, and this information will be used formatively by the next teacher. All relevant assessment information is passed to the next teacher in the class cohort file. The yr6 teacher ensures that assessment information is shared with secondary colleagues to ensure further progression in yr7.

Target setting- By combining teacher assessment, results of ongoing formative assessments and summative assessments, children are set numerical targets in July for the end of the following school year. These are reviewed and adjusted in February and evaluated in July. These targets and attainment data will be entered into our 'Pupil Achievement Tracker' and analysis will involve the whole staff, led by the Assessment co-ordinator.

C. School and class organisation.

Special Educational Needs

We aim to embed our policy for S.E.N. into all aspects of planning, teaching and assessing across all curriculum areas. We maintain high expectations for all pupils and are committed to providing a broad, stimulating, inclusive maths curriculum which challenges all children. Teachers will aim to include all children fully in their daily maths lessons. All children benefit from the emphasis on oral and mental work and participating in watching others demonstrating and explaining their methods. Class teachers plan work carefully to ensure learning opportunities are matched to the needs of pupils of all abilities. Teachers will consider the needs of children who are less able, slightly below expected level ('target group'), 'on track' and more able, and involve all pupils through differentiation.

How we work in the Foundation Stage.

In Reception, the class will be organised to promote social skills and the development of mathematical language and understanding. Teaching will be based on the objectives in the Framework for Reception. This will prepare children for starting the National Curriculum in yr1. We relate the mathematical aspects of children's work to the objectives set out in the Early Learning Goals. Children are given many opportunities to develop understanding of number, measures, patterns, shape and space, through varied activities that allow them to enjoy, explore, practise and talk about maths.

Usually the organisation will be planned as follows:

- An introduction with the whole class, usually involving some counting, number rhymes and songs
- Some teaching of the whole class on the main mathematics topic for the day
- Group activities- for small groups simultaneously or one or more activities worked on by groups in turn during the day, supported by an adult
- A plenary with the whole class to consolidate and extend through discussion and questioning what they have been learning and to praise progress.

Resources.

Each class has access to a large amount of practical equipment, with some resources stored centrally.

D. The Management of Mathematics.

Role of Subject Leader:

- to provide a strategic lead and direction for Mathematics, driving the subject forward in an aim to raise standards
- to embrace new initiatives and make them work for our school and our children
- to be enthusiastic about maths and demonstrate good practice/ be a good role model / lead by example
- to monitor and evaluate the quality of learning and teaching through observations, displays, pupil interviews, work samples
- to promote and ensure the NNS is adopted throughout the school
- to ensure all staff have a 'shared vision' of how we aim for maths to develop throughout the year (S.I.Plan)
- to deliver INSET covering DCSF requirements for numeracy training
- to review the provision of numeracy resources regularly and purchase new resources to support teaching and learning
- to revise the school's written policy in light of new initiatives and developments
- to work closely with the Assessment co-ordinator to review assessment procedures and their impact on pupil attainment
- to look at termly work plans for each year to have an overview of teaching throughout school
- to monitor standards of children's work with work samples from each class
- to provide support, guidance and advice for staff, sharing ideas and informing them of current developments
- to be aware of national developments in numeracy through reading relevant materials and attending courses
- to liaise with local schools in order to share good practice
- to further parental involvement and knowledge by facilitating support and advice through Curriculum Evenings and disseminating written information

- to audit current practice at the start of the Autumn Term and produce a detailed action plan for the year which links in with the priorities of the S.I. Plan
- to work to achieve equality of opportunity throughout school
- to provide the *Governor's Curriculum Committee* with regular updates of developments in maths and discuss targets and SATs results with the full *Governing body*
- to liaise with the named *Governor* for maths
- to be committed to the Professional development of all staff so that provision for children can further improve e.g. mentoring new staff

Role of the Headteacher.

- to lead, manage and monitor the implementation of the Strategy, including monitoring the quality of teaching in all classes
- with the numeracy governor, keep the governing body informed about the progress of the Strategy
- ensure that maths remains a high priority in the S.I. Plan
- deploy support staff to maximise support for the Strategy

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