

Cavendish Close Infant and Nursery School

Our Mathematics Policy

Rationale

Mathematics provides a way of viewing and making sense of the real world. Mathematics can be used to describe, to illustrate, to interpret, to predict and to explain. The utility of mathematics is unquestioned, but the skills and knowledge should be embedded in purposeful activities.

We believe 'mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary in most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, and a sense of enjoyment and curiosity about the subject.' (The National Curriculum in England (DfE) 2013)

Aims

- To encourage a positive attitude to mathematics
- To develop the ability to think clearly and logically in mathematics
- To develop skills and knowledge and the quick recall of basic facts
- To develop the imagination, initiative and flexibility of mind
- To develop the skills and increase the confidence of each pupil to work systematically, independently and co-operatively
- To provide pupils with a supportive atmosphere in which to develop their mathematical skills
- To use and apply mathematics in practical and real life situations to ensure that all pupils reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- To promote the teaching of Mathematics and literacy within all subjects.
- To share good practice within the school.
- To work with other schools to share good practice in order to improve this policy.

Our mathematics curriculum

We have a duty to ensure compliance with the revised National Curriculum and with the application of the new programmes of study and attainment targets. We understand that 'the National Curriculum provides pupils with an introduction to the core knowledge that they need to be educated citizens.'

Our well-balanced curriculum promotes the spiritual, moral, cultural, cultural, mental and physical development of pupils and prepares them for the opportunities, responsibilities and experiences of later life. We will develop pupils' spoken language, reading and writing in all subjects and will develop pupils' mathematical fluency.

We believe it is essential that this policy clearly identifies and outlines the roles and responsibilities of all those involved in the procedures and arrangements that is connected with this policy.

Early Years Foundation Stage (EYFS)

Mathematics is one of the seven **areas of learning and development** within the EYFS. It is divided into two sections:

- Number
- Shape, space and measures

Each area of focus is divided into progressive stages of development as outlined in the 'Early Years Foundation Stage Profile 2014'

Teaching and learning

The learning environments within the EYFS all include problem solving areas. Within these areas of continuous provision, children can independently access a range of mathematical resources to support their learning and development over time. Mathematics is also embedded into other areas of continuous provision within the classroom, for example, a telephone in the home corner, measuring jugs, bottles and funnels in the water tray etc.

The continuous provision is enhanced on a daily basis through a number of ways, for example:

- A whole class oral and mental starter activity (EYFS2)
- A whole class main teaching activity (EYFS2)
- Adult led group activities (indoors and outdoors)
- Independent table activities that reflect current learning
- Opportunities for cross curricular learning, for example, singing and acting out number rhymes, photographing shapes in the outdoor area etc

Assessment guidance

The EYFS **profile** is used in EYFS2 to assess in the summer term against the Early Learning Goals to state if each child is working towards, is working above or exceeding the age expected expectations. Prior to the Early Learning Goals children are assessed against age related goals as outlined in the profile. It is used in EYFS to provide staff and parents with reliable and accurate information about each child's level of development. The profile enables staff to plan an effective, responsive and appropriate curriculum that will meet all children's needs. Within the Mathematics area of the profile, staff record judgments against the assessment scales, based on the **ages and stages**. Judgments are made from observation of consistent and independent behaviour, predominantly from children's self-initiated activities.

By the end of the EYFS, some children will have exceeded the goals. Other children, depending on their individual needs, will be working towards some or all of the goals - particularly some younger children, some children with learning difficulties and disabilities and some learning English as an additional language.

Developmental ages are recorded and analysed termly. Intervention programmes can then be planned and implemented effectively. Targets can also then be set, shared and tracked.

Key Stage 1 (KS1)

"The national curriculum 2014 for mathematics aims to ensure that all pupils:

- *become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems*
- ***reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language*
- *can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions."*

The Mathematics curriculum is organized into the following areas:

- Numbers & the number system
- Calculation~ addition & subtraction
- Calculation~ multiplication & division
- Calculation~ Fractions, Decimals & Percentages
- Measures
- Shape & Space
- Statistics

Teaching and learning

The learning environments within KS1 enable children to make choices and to access the resources they need to support their learning.

Planning for Mathematics is taken from the White Rose Document and adapted to meet the needs of the children in our school. The children are working towards a mastery approach.

KS1 classes explore a range of groupings. Mathematics groups are essential at times so that we can provide children with differentiated work that matches their individual needs. For problem solving activities, we often explore mixed ability groupings.

KS1 classes all have Mathematics displays boards that reflect and support current learning. All classes will be developing a Maths area in the classroom for the children to explore Maths further.

All KS1 classes regularly experience whole class Mathematics lessons. Lessons usually begin with a whole class oral and mental starter activity, followed by a whole class main teaching activity, followed by group/individual activities, finishing with a whole class plenary session.

During integrated days, Mathematics activities are ongoing throughout the day and work well alongside the daily whole class oral and mental starter activity and whole class main teaching activity. Learning is reviewed throughout the day.

ICT as a teaching and learning tool

ICT supports children's learning in mathematics in a number of ways, this is evident in weekly and daily planning. Examples include:

- Using '101 mental and oral starters' on the smartboard with the whole class – lively, engaging, challenging, fun!
- Allowing the children time to explore the extensive software that we have in school to support mathematical learning
- Using programmable toys to support the understanding and use of positional language
- Using the digi-blue and digital cameras/ ipads to explore mathematics in the local environment

Assessment guidance

Day to day assessments happen at the beginning of, during and at the end of units of work. They provide information about children's general attainment and progress and they help staff to identify any children who might need additional support.

Assessment for learning is ongoing and central to effective classroom practice. Much of the time, during interactions with individual children, groups or the whole class, there is some assessment being made. What children do or discuss is observed and listened to and then analysed against expectations. This analysis informs future planning and identifies where children are in their learning and what they need to learn next.

Preplanned assessment times are set across school and work from the term in books is analysed and specific observations are made in order to give children a best fit judgment towards their National Curriculum levels. National Curriculum levels are recorded and analysed termly. Intervention programmes can then be planned and implemented effectively. Targets can also then be set, shared and tracked.

Throughout Year 2 children will experience question based assessments to assess their understandings of Mathematics. In the Summer term teacher assessments and SATs assessments give their levels for Key Stage 1.

Differentiation

Differentiation is best defined as 'the process by which differences between learners are accommodated so that all students in a group have the best possible chance of learning.' (Geoff Petty)

The main purpose of differentiation is to challenge and raise standards of learning by ensuring that curriculum objectives are accessible to all our children despite their backgrounds or abilities. We see differentiation as a form of integration and not exclusion.

Differentiation must reflect the learning objective and can be achieved in a variety of ways either by task, by support or by outcome and should be chosen by fitness for purpose.

We want all children to achieve success, therefore we will ensure they are given differentiated tasks that are matched to their level of attainment so that they can demonstrate successfully what they know, understand and can do.

The main feature of effective differentiation is good planning resulting in effective teaching and learning with children making good progress. Also we expect to see in all classes interested well motivated children responding to challenges, children working productively on task and being aware of their own progression.

Targets

Targets are set in 3 tiers every half term and these are set to children's differentiated needs, they are achievable and the children are aware of the targets and are rewarded for meeting their targets with stickers.

Children are encouraged throughout the term to work towards their targets in differentiated class work, target groups and through homework.

Contribution of the Subject to other Areas of the Curriculum

Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts.

Sharing learning with parents

Each year group sends home a mathematical 'learning challenge for home'. Often in the form of an open ended investigation that enables the children to use a range of problem solving skills or a piece of homework which consolidates the child's learning. It is also an opportunity to let parents know how they can support their child's mathematical learning at home and works towards their personal target.

Resources

Many resources are within classrooms and are available for children to access independently. Other resources are stored in classroom cupboards. Many other resources, including topic boxes are shared and stored centrally.

Roles and Responsibility for the Policy

Role of the Governing Body

The Governing Body has:

- appointed a member of staff to be responsible for the curriculum leadership of Mathematics;
- delegated powers and responsibilities to the Headteacher to ensure all school personnel and stakeholders are aware of and comply with this policy;

- responsibility for ensuring compliance with the legal requirements of the National Curriculum;
- responsibility for ensuring funding is in place to support this policy;
- responsibility for ensuring this policy and all linked policies are maintained and updated regularly;
- responsibility for ensuring all policies are made available to parents;
- responsibility for the effective implementation, monitoring and evaluation of this policy

Role of the Headteacher and Senior Leadership Team

The Headteacher and the Senior Leadership Team will:

- ensure all school personnel are aware of and comply with this policy;
- work closely with the subject leader and the governors;
- ensure compliance with the legal requirements of the National Curriculum;
- consider disapplying a pupil from all or part of the National Curriculum for a period of time if this will benefit the child;
- encourage parents to take an active role in curriculum development;
- provide leadership and vision in respect of equality;
- provide guidance, support and training to all staff;
- monitor the effectiveness of this policy by:
 - observing teaching and learning
 - planning scrutinies and work trawls
 - discussions with pupils

Role of the Mathematics Subject Leadership Team

Leadership responsibilities include:

- Analysing year group data and feeding back key points to staff
- Developing an annual action plan that forms part of the school improvement plan
- Sharing priorities/expectations with staff
- Organising staff meeting/INSET day time to work collaboratively towards priorities
- Monitoring year group targets for progression, pitch, expectation and challenge
- Monitoring class intervention programmes/target groups for focus and impact

Monitoring responsibilities include:

- Lesson observations
- Work scrutiny
- Talking to children
- Exploring year group plans
- Exploring learning environments

Other responsibilities include:

- Managing mathematical resources
- Keeping up to date with publications
- Keeping up to date with national and local priorities
- Attending termly network meeting led by the LA
- Keeping the governors involved and up to date with developments
- Co-ordinating staff development opportunities
- Building up a bank of learning challenges for home for each year group
- Reviewing the mathematics policy annually

- Leading by example

Role of Teachers

Teachers will:

- comply with all aspects of this policy;
- work closely with the subject leader to develop this policy;
- devise medium and short term planning;
- develop mathematical fluency, Mathematics and mathematical understanding in all subjects;
- develop pupils' spoken language, reading, writing and vocabulary in all subjects;
- plan and deliver good to outstanding lessons;
- plan differentiated lessons which are interactive, engaging, and of a good pace.
- have high expectations for all children and will provide work that will extend them;
- assess, record and report on the development, progress and attainment of pupils;
- achieve high standards;
- celebrate the success of pupils in lessons

Role of Pupils

Pupils will:

- listen carefully to all instructions given by the teacher;
- ask for further help if they do not understand;
- participate fully in all lessons;
- participate in discussions concerning progress and attainment;
- treat others, their work and equipment with respect;
- take part in questionnaires and teacher/pupil interviews

Role of Parents/Carers

Parents/carers will:

- be aware of and comply with this policy;
- be encouraged to take an active role in the life of the school by attending parents and open evenings
- encourage effort and achievement;
- encourage completion of homework and return it to school;
- provide the right conditions for homework to take place;
- join the school in celebrating success of their child's learning;

Equality Impact Assessment

Under the Equality Act 2010 we have a duty not to discriminate against people on the basis of their age, disability, gender, gender identity, pregnancy or maternity, race, religion or belief and sexual orientation.

We believe that this policy is in line with the Equality Act 2010 as it is fair, it does not prioritise or disadvantage any pupil and it helps to promote equality at this school.

Monitoring the Effectiveness of the Policy

The practical application of this policy will be reviewed annually or when the need arises by the coordinator, the Headteacher and the governors.

This policy was reviewed and amended in September 2017.

The implementation of this policy is the responsibility of all staff.

This policy will be reviewed during the autumn term 2018.

Mrs Kathryn Merriman (Mathematics Coordinator)

Policy Change History Sheet

Policy title: Mathematics		
Review Date	Section	Summary of change
<u>11.9.12</u>	End	Name of coordinator from Christina Diffin to Kathryn Mason
<u>11.9.12</u>	Early Years Foundation Stage (EYFS) planning guidance	Updated to new EYFS framework
<u>21.10.12</u>	Mathematics curriculum	Reflects the changes taken from the government changes to the national curriculum May 2012
<u>21.10.12</u>	KS1 planning guidance	
<u>21.10.12</u>	Assessment	APP removed as school no longer using the assessment- National curriculum levels added and Year 2 assessment put in
<u>21.10.12</u>	Targets	Section added
<u>21.10.12</u>	EYFS assessment	Adaptions made for the time being until we gain the actual assessment procedures from the government in Spring 2013
<u>21.09.14</u>	All sections	Policy rearranged to EYFS then KS1. New curriculum information updated in both areas.
<u>16.11.14</u>	All sections	Added: role of stakeholders/ Equality Impact Assessment/ Monitoring the Effectiveness of the Policy/ Contribution of the Subject to other Areas of the Curriculum/ / Differentiation / curriculum overview/ rational/ aims

<u>21.9.17</u>	Teaching and learning	White rose planning added. Developing maths areas in the classroom added.