

## Wilkinson Primary School Mathematics Policy - Contents

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## Introduction:

This policy expresses the school's purpose for the teaching and learning of Mathematics. It sets out our intention; the implementation of the curriculum, and assessment and monitoring based on the Mathematics programmes of study (POS) for Key Stages 1 and 2 (*DfE September 2014*).

Written by:	Mr R Crisp
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Approved (governors) on	
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## Context

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills and the ability to think in abstract ways.

Mathematics is important in everyday life. Many forms of employment, science and technology, medicine, the economy and public decision making, in many different cultures, have contributed to the development and application of mathematics ..... and it can stimulate moments of wonder when a pupil solves a problem for the first time. Therefore ...

## INTENT

...It is our intent that, by the time they leave Wilkinson Primary School, all our learners will: aspire to view mathematics as essential to everyday life, have a positive attitude towards the subject and be successful in reasoning mathematically and solving complex problems, enjoy the subject, and make a good start in becoming fluent users of mathematics.

At Wilkinson Primary School our Mathematics Curriculum is designed with the intent that whilst studying the children will develop:

- A positive attitude to mathematics as an interesting and valuable subject.
- An ability to think clearly and logically in mathematics with confidence, independence of thought and flexibility of mind.
- An understanding of mathematics through a process of enquiry and experiment.
- Persistence through a sustained piece of work, working both co-operatively, collaboratively and independently.
- Confidence in mathematics which will allow children to express ideas fluently, talk about the subject using the language of mathematics.

- An appreciation of when a task should be done quickly in one's head and when it is reasonable to resort to pencil and paper or equipment.
- An understanding of the importance of mathematics in everyday life.
- An enthusiasm and enjoyment for maths and awareness that maths is fun!

## **IMPLEMENTATION**

### **Purpose**

At Wilkinson Primary School we recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. The children complete counting and mental arithmetic activities daily. We endeavour to set work that is challenging, motivating and encourages the pupils to talk about what they have been doing. Children should be encouraged to work with others, listen to each other's ideas, and treat them with respect. Children should have the opportunity to consider their own ideas and values and those of other people.

- The Mathematics Subject Leader, and leadership team, support staff to deliver a high quality Mathematics education.

Pupils engage in:

- Daily counting practice
- The development of mental strategies
- Written methods
- Practical work
- Investigational work
- Reasoning and Problem-solving activities
- Mathematical discussions
- Consolidation of basic skills and routines

### **Curriculum Development**

Researching and developing the most recent thinking in mathematics is seen as key to the improvement of the subject at our school. A unique early years numeracy scheme called Ten Town has been implemented which is designed to improve number recognition and formation from the foundation stage onwards. A comprehensive training programme, has also been completed, designed to develop our understanding and delivery of the latest teaching methods including the CPA (Concrete, Pictorial, Abstract) model of teaching and the problem solving method using bar models. This was alongside training of teacher's subject knowledge to enhance their delivery of mathematics.

### **Mathematics Curriculum Planning**

Mathematics is a core subject in the National Curriculum and we use the Programmes of Study for Mathematics to inform our teaching. We have also devised a visual calculation policy to support our

written calculation policy, for the whole school to follow. Each class teacher plans, teaches and assesses mathematics in line with the recommendations set out in the Programmes of Study. We have updated the weekly planning sheet to include activities that focus on fluency, reasoning and problem solving. The weekly planning sheet is then uploaded onto our learning platform.

We use a modified medium term planning sheet for each phase, which ensures an appropriate balance and distribution of work across the term. The medium term planning covers place value and the properties of number, calculation, number and number systems, problem solving, measures, geometry and statistics.

## **Planning**

Planning takes place at three levels:

- **Long term** planning is based on the programmes of study set out in the National Curriculum for Mathematics. Mathematics is taught in class groups from Year 1 to Year 6, considering the needs of the particular cohort of children.

**Medium term** planning is carried out termly. There is a medium term planning sheet for each phase. This covers aspects of number systems, counting and understanding numbers, calculation, using and applying mathematics, geometry, statistics and measures. The Mathematics co-ordinator selects the main teaching objectives from the yearly teaching programme and creates a termly outline for teachers to cover to ensure a balanced mathematics curriculum with number topics generally being taught in blocks of two weeks. We recognise the need to revisit topics regularly to revise and consolidate and then extend them.

**Short term** planning is carried out weekly. The school weekly planning sheets have been designed to incorporate a counting focus, mental/oral skills, fluency, reasoning and problem solving activities, new mathematical vocabulary and the opportunity for differentiated work for each of the groups according to their mathematical ability. There is also a plenary section included. As well as during daily mathematics lessons, times tables are also practised during basic skills time twice a week with Year One concentrating on number bond recognition.

The medium and short term planning is regularly monitored by the maths co-ordinator. The planning is also shared with other teaching staff and teaching assistants.

## **The Foundation Stage**

During the Foundation Stage the CPA approach of learning is started giving all the children ample opportunity to develop the necessary building blocks to excel mathematically. The Early Years curriculum includes rich opportunities for the children to develop their counting, understanding of numbers, relationships and patterns between them and spatial reasoning skills including shape, space and measures. The children are encouraged to 'have a go' and use manipulatives including counters, loose parts and tens frames to organise their counting. We also encourage children to develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. We explore and develop mathematical vocabulary and concepts during our daily routines across the Early Years Foundation Stage.

## **Assessment for Learning**

Teachers continually assess children's work using formative and summative assessments, through questioning, marking, termly tests and end of year or Key Stage testing. Year 6 complete statutory end of Key Stage tests in mathematics. Years 1, 2, 3, 4 and 5 also complete mathematics assessment tasks at the end of the year.

Children are assessed each term and the results and progress for each year is stored on our learning platform. The children's progress is closely monitored and discussed regularly. This enables us to target individual children and form intervention groups. The targets are reviewed at least three times a year. Expected targets in mathematics for a child's Year Group are displayed in the classroom so they have an understanding of their particular targets and what they need to do to improve. Parents can also access the particular year group targets on our website so that their progress can be discussed at parents evening.

### **Contribution of mathematics to teaching in other curriculum areas.**

#### **English**

The teaching of mathematics contributes significantly to children's understanding of English in our school by promoting speaking and listening, reading and writing. Reading and writing are essential for the process of finding out and communicating understanding of mathematics. It also develops their understanding of a wider mathematical vocabulary and the understanding of non-fiction texts by being able to read and interpret charts and graphs.

#### **PSHE Aspects of Learning and citizenship**

Mathematics encourages collaborative learning and the children work together and listen to each other's views. Mathematical activities are also linked to real life situations and children develop an understanding of economic well-being, particularly when they are dealing with money.

#### **Celebration of Success**

It is important that children's success in mathematics is acknowledged and celebrated appropriately. This will be done through display inside and outside of the classroom. Many different mathematical competitions/challenges are completed annually. These include the Primary Maths Challenge and 'The Borchers Shield' at King Edward's School, Birmingham. Children receive certificates for taking part in these activities. A mathematical challenge is also completed, in both key stages, every half term with the champion being awarded a certificate and a special Wilkinson maths challenge badge.

#### **ICT**

ICT enhances the teaching of mathematics. Staff use the interactive boards in their classroom and there is a variety of mathematical software that can be used for mathematical activities. Interactive whiteboards are also present in every group room meaning small group teaching can also take place with the benefit of an electronic display. Mobile interactive whiteboards are also available to phases to use in work in hub spaces. Each phase has access to laptops which can be used for small groups so that information can be presented visually, in a more exciting way, especially for geometry, direction, graphs and charts. iPads are also available for work with Mathematical Apps and Internet based programmes.

#### **Equal Opportunities**



## **Mathematics and Inclusion**

At Wilkinson Primary we plan work that offers equal opportunity in respect of gender, race, and the needs of the most able and those children with Special Educational Needs. This is achieved by teaching in small groups and focusing on their particular areas of need. The Teachers, when using this scheme, may find that there are parts they wish to modify and adapt for the children in their class. The learning objective may be adapted to the learning needs of individual children and they provide opportunities for all children to succeed. Children who have a care action plan may have a plan that includes mathematics targets. Multi-cultural themes are encouraged in mathematics, which affords opportunities to promote understanding of people and places beyond their immediate experience; developing a tolerance towards people who hold different values and beliefs. It also develops an awareness of cultural and ethnic diversity within our society and the interests and aspirations of different people.

## **Monitoring**

The mathematics subject co-ordinator and senior leaders regularly monitor planning, lessons, children's books and assessment tests. Pupil discussion as well as continual teacher discussion is carried out throughout the year with feedback given in order to improve performance. Governors, responsible for mathematics, monitor mathematics documents and planning and receive updates from the co-ordinator informing them of developments. A team of governors carry out focus days, observing lessons, talking to children and speaking to staff, including the maths co-ordinator, about achievement data. Monitoring of the Mathematics curriculum informs the subject leader of issues for development to be included in the school development plan.

## **Financial Commitment**

The financial commitment for mathematics will differ each year, details will be found in the SDP. However, in order for staff to deliver the mathematics curriculum effectively the following commitment is envisaged:-

a variety of book and paper resources for each ability group

practical equipment for all aspects of mathematics e.g. measures, geometry, statistics, calculation activities etc.

a variety of ICT resources to enhance and promote learning.

a variety of teaching resources for all staff

## **Work at Home**

Children are set mathematical homework within the homework menu. ICT based homework opportunities are also offered through MyMaths and TTS Rockstars programmes that cover all aspects of mathematics. Parents are encouraged to support the children with their homework and parents are encouraged to give feedback about the tasks.

## **Parental Information**

Parents are informed of developments in the mathematics curriculum regularly. Workshops are held where parents take part in sessions with phase leaders and also work with their child in classroom



mathematics lessons. There are a range of Mathematical workshops present on our school website. Parents also have access, through the school website, to termly overviews outlining what topics will be covered in mathematics as well as expected year group standards.

## **Resources**

A comprehensive selection of mathematical resources is kept in the mathematics store room. Resources are labelled and cover all aspects of mathematics. Book resources are also stored in each phase. Staff also access ICT programmes such as MyMaths, TTS Rockstars and White Rose Maths which support learning. Each area, where mathematics is taught has direct access to a place value resource box with a range of apparatus to support the CPA approach to teaching mathematics.

## **Health and Safety**

During mathematics lessons children are taught how to correctly use and handle mathematical equipment safely and appropriately. The children follow the rules of the classroom when using equipment. The children will then be able to transfer and use these skills in other curriculum areas. A risk assessment form is completed for every educational visit which complies with the school risk assessment policy. (please see school risk assessment folder)

## **Review:**

- This policy will be reviewed annually by the Mathematics subject leader and leadership team and shared with the school community.