



# Kings Meadow School

Believe and Achieve



## Mathematics Policy

Reviewed: February 2018

Next review: February 2019

Date: \_\_\_\_\_

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Chair of Governors

### Our Beliefs

At Kings Meadow School we believe that Mathematics is an essential tool for everyday life. The concepts and relationships at the heart of Mathematics provide pupils with a way of viewing, understanding and engaging in the wider world. Through their involvement in Mathematics the pupils deepen their understanding of number, explore practical and real life problems and discover new ways to communicate information and ideas.

By using the Programmes of Study from the New National Curriculum (DfE 2014) it is our aim to develop in all pupils:

- ❖ a positive attitude towards mathematics.
- ❖ secure number sense.
- ❖ efficient calculation skills.
- ❖ an ability to communicate understanding using the language of mathematics.
- ❖ an ability to solve problems by using trial and improvement, reason and logic and to work systematically and accurately.
- ❖ an ability to ask mathematical questions.
- ❖ an ability to work both independently and with others.
- ❖ an ability to use and apply mathematics across the curriculum and in real life.

Furthermore as a school we believe Mathematics plays a crucial part in determining the success and positive futures of all of our pupils. As such we strive to ensure that as priority all pupils leave with a secure knowledge of number and the four operations. As such we split our Maths curriculum so that core 1:1 teaching time each half term focuses on a different aspect of number and the remaining units are addressed through the other three elements of our continuous provision e.g. daily routines, carousel activities and cross-curricular learning. (See both the Maths long term plan and Curriculum Map for more details of this).

## **School Policy and the National Curriculum**

### **Knowledge Skills and Understanding**

All teachers use our school's scheme of work, which is taken from the New National Curriculum (DfE 2014), and the Statutory Framework for the Early Years Foundation Stage (March 2017) in order to ensure that all objectives are taught, in correspondence with the year group each pupil is working at, irrespective of their chronological age. Teachers also refer to the Calculation Policy in order to ensure progression and consistency in the teaching and learning of the four operations.

### **Breadth of Study**

Through careful planning and preparation we aim to ensure that throughout the school pupils have the opportunity for:

- ❖ using different maths equipment to support learning.
- ❖ mental maths and written calculation.
- ❖ practical activities and problem solving.
- ❖ individual, group and whole class discussions and activities.
- ❖ using ICT as a mathematical tool e.g. computers, beebots\* and calculators.
- ❖ reflecting on their progress and identifying their own strengths and target areas.

### **Scheme of Work**

Our school scheme of work is a working document based on the New National Curriculum, the Statutory Framework for Early Years Foundations Stage and the needs of our pupils. Teachers plan for progression within each unit of maths and continue to adapt plans and teaching strategies as necessary to ensure that they respond effectively and meet the needs of individuals, whilst maintaining challenge and progress for each individual.

### **Cross-curricular links**

Throughout the school teachers seek opportunities to promote, consolidate and extend mathematics through the teaching of other curriculum areas and the continuous provision. The long term plan also indicates aspects of Maths to incorporate into the continuous provision. Individual class plans for the Continuous Provision also indicate Maths learning opportunities.



### **Teachers' planning and organisation**

As we operate in mixed-age classes, planning includes the full age and ability range and typically one unit plan is produced which is then shared across the classes. Each class teacher is then responsible

for the mathematics in their classroom and so determines the individual learning journey for each of their pupils based on the unit plan. All teachers use the school's scheme of work and Statutory Framework for the Early Years and Foundation Stage, which they annotate as objectives are covered and achieved.

The approach to the teaching of mathematics within the school is based on five key principles:

- ❖ Mathematics is taught discretely at least 3 x per week with evidence gathered in books to reflect each pupil's individual learning journey.
- ❖ Maths lesson can be taught as a whole class, small group or 1:1 depending on the needs of the pupils.
- ❖ Maths lessons have clear objectives which are shared at the start of the lesson and success criteria which the pupils reflect on at the end of the lesson.
- ❖ The pace of the Maths lesson can vary depending on the needs of the individual pupil.
- ❖ Ongoing and termly assessments are used to ensure that teaching responds to, supports and challenges all pupils.

Lessons are planned using a common planning format and monitored by the mathematics subject leader.

### **Differentiation**

Differentiation should be incorporated into all mathematics lessons and can be achieved in various ways. For example:-

- Pace within and across lessons which ensures individual pupils move on at a pace to suit their level of understanding and learning needs.
- Resourcing which is used to support and deepen understanding and is used in different ways depending on the needs of the individual pupil eg. Numicon\*, counters, cubes, 100 squares, number lines or mirrors.
- Self-selection Activities which encourage the pupils to reflect on their learning needs and push themselves to meet the challenge.
- Common Tasks which are open ended activities/investigations where differentiation is by outcome and linked to support needed.
- Additional teacher support is given to assist different abilities to ensure progress and challenge at all levels.



### **Targets**

Every term pupils' Individual Learning Plans are reviewed and updated. This includes the reviewing and setting of specific Maths targets, which relate to each pupil's Educational Health Care Plan (EHCP) or their latest Annual Review. These targets are shared with parents, carers and the pupils. Once a week, through morning folder work, the pupils are given the opportunity to complete tasks in relation to these specific targets. Furthermore teachers work with the pupils as needed to help secure and deepen understanding so that they will successfully meet their target. We do however recognise that pupils progress at different rates and so targets are only updated when individual pupils are assessed by the teacher as having met a current target and are ready for a new one.

## **Resources**

All classrooms have Maths tools and vocabulary displayed where needed to support learning both within the maths lesson and the continuous provision. Each classroom also celebrates Maths successes by displaying work on the 'Special to...' and 'Wow' boards\*.

Teachers use interactive whiteboards and computing activities within the maths lesson and continuous provision as needed as a tool to stimulate and engage the pupils in order to promote progress, deepen understanding and to encourage problem solving.

Numicon\* is a key resource used in all classes, especially when teaching about number or any of the four operations. This particular resource is used by teachers when modelling key concepts and promoting depth of understanding as well as a tool for differentiation and to help individual pupils access areas of maths that may have otherwise seemed too daunting or impossible. Furthermore at times Numicon is also used within the continuous provision to promote problem solving and pupils' own lines of enquiry. Each classroom also has additional maths resources, which are frequently used, clearly labelled and accessible to the pupils to promote independence. Other resources, required less regularly, are stored centrally in the Maths cupboard in the Staff room.



## **Special Educational Needs**

We recognise that all of our pupils have significant barriers to learning as well as some pupils having specific learning difficulties. Through careful planning, ongoing assessment and the use of suitable resources, we teach maths that can be accessible to all learners by considering the aforementioned methods of differentiation.

## **Challenging the more able**

We also recognise that some of our pupils may show particular strengths in maths and we provide appropriate challenge opportunities for this through careful planning, ongoing assessment and the use of suitable resources.

## **Equal Opportunities**

At Kings Meadow School we work hard to ensure that all pupils have the opportunity to access mathematics. In daily maths lessons we support pupils with a range of difficulties such as having English as an additional language, delayed processing skills and learning disabilities in a variety of ways. For example by discussing key vocabulary, repeating instructions, speaking clearly, using picture cues, playing mathematical games, encouraging pupils to join in counting, chanting, finger games and rhymes as well as using ongoing assessments and resources such as Numicon.

## **Evidence of Learning**

Throughout mathematics lessons we provide pupils with various methods of showing their learning. As a result of this we expect there to be a variety of evidence of learning within books following every maths lesson. This can take many forms such as photos, speech bubbles with pupils' verbal responses

or pupils' own written recordings either directly in the maths book or on worksheets.

At Kings Meadow School we are not opposed to the use of worksheets as we realise that for many of our pupils worksheets can help to provide a framework and a sense of security when carrying out learning tasks. We do however also use practical resources to support learning and ensure that there is still a sense of progression e.g. if a pupil shows they have met the objective within the first few questions, they do not need to complete the rest of the worksheet but are instead ready to move on to something more challenging.

### Exercise Books for Recording

It is school policy that Maths books have blank paper inside however more able pupils may use paper/books with 1cm squares if deemed appropriate.

All pupils are encouraged to organise their work so that it is neat, can be understood and reflects their mathematical reasoning. When using squares, one square should be used for each digit. If a mistake is made, pupils should be encouraged to put one neat line through the work and then show the correction clearly

### Marking

At Kings Meadow School we believe marking should be used for three key reasons:-

- 1) Celebrate successes
- 2) Identify progress and next steps
- 3) Inform teaching and learning

Overall the marking of mathematics follows the school's own marking policy which includes the following key points:-

- ❖ Marking includes a stamp for the pupil to celebrate successes.
- ❖ There is evidence of pupils' self-evaluation through the completion of red, amber, green colour coding against the success criteria.
- ❖ Marking includes a longer comment to reflect progress *e.g. You showed that now you can use the Numicon to subtract by taking away*, which is written in black.
- ❖ Pupils are encouraged to read and respond to the teachers' comments by leaving smiley faces.
- ❖ Where appropriate pupils are encouraged to check and tick their own work e.g. using a calculator to check computational exercises. This fosters independence in the pupils and a reminder that work should always be checked first before declaring it complete.
- ❖ Where appropriate forward marking is used to challenge a pupil further. For example *Excellent Tom! You can add 2 digit numbers using the Numicon. Now try this  $107 + 35 =$ .*

(See the Marking Policy for further details)

### Assessment

Teachers are expected to make ongoing regular assessments of each pupil's progress and to record these systematically. As a school we have two waves of assessment, which are as follows:-

### **1) Ongoing assessments**

This involves the teacher's use of assessment opportunities within lessons to determine pupils who require further support and intervention and those who are ready to progress further thus ensuring that the learning journey is personal for all. The outcomes of this are recorded through annotations on planning and are used to inform future lessons.

### **2) Formal Assessments**

At the start of the year we carry out base lining assessments in the form of a basic number sense assessment. This is then repeated half way through the year in order to assess progress.

Every half term, the pupils complete a single stage paper, which will be marked by the class teacher. This will be used to inform planning, update progress against key objectives using Curriculum Monitor and data entry.

( See Assessment policy for further information)

### **Involving parents/carers**

All teachers are expected to form a good relationship with parents and carers and to encourage a two-way open dialogue regarding accomplishments or concerns.

Every term updated Individual Learning Plans are shared with parents and carers so that they can see the pupil's success against a previous maths target, their new target and suggestions of ways to support their pupil's maths learning at home.

Also coffee afternoons are held termly, at which the pupils are encouraged to share their success in maths with their parents and carers. As needed teachers may also take this opportunity to discuss pupils' general performance in Maths and highlight any areas for development or particular concerns. If appropriate teachers may also use this time to suggest ways parents and carers can support their pupils in their Maths learning at home.

At the end of the year an annual report is also shared with parents, which indicates whether the pupil is working above, below or at national expectation as well as a general comment about their pupil's attitude towards maths.

### **Homework**

At Kings Meadow School we acknowledge that our pupils already have a number of obstacles to overcome both in school and at home and so homework is not expected. We do however respond to the pupils and will provide homework as requested.

### **Monitoring and Evaluation**

Members of SLT and the mathematics subject leader monitor and evaluate the quality and standards of mathematics throughout the school, through learning walks, lesson observations, planning scrutinies, book monitoring and data analysis. The mathematics subject leader provides feedback to staff and works alongside teachers to ensure mathematics is taught most effectively.

Regular staff meetings also provide the opportunity for all teachers to review the scheme of work, policy and published materials as well as training regarding the teaching and learning of mathematics.

### **The Governing Body**

The governing body take an active role in working with the senior leadership team and maths subject leader in order to ensure approve policies and appropriately challenge the existing practise.

### **Please also refer to the following policies:**

Assessment

Marking and Feedback

Teaching and Learning

Calculation

### **Glossary**

Beebots – a computing tool whereby pupils can programme a small device in order to learn about basic programming in terms of inputs, outputs and debugging as well as positional language.

‘Special to...’ boards – display boards in the classroom used by pupils to self-select and share learning they are proud of.

‘Wow’ boards – display boards in the classroom used by the class teacher to select learning they feel pupils should be proud of.

Numicon – A Maths resource made of plastic shapes with holes in which each shape represents a different number (1-10) and therefore can be used to support basic number concepts such as place value.