

Rosewood School Maths Department 2017 – 2018

# THE ROSEWOOD SCHOOL

## MATHS POLICY 2017-2018



Staff Responsible

Mr L. Wilkes

Policy Date –

September 2017

Review Date –

September 2018

## **Description of school**

Rosewood is an urban special school for boys of secondary age who have social, emotional and mental health difficulties. Pupils are drawn from all over the borough and reflect a wide social mix and varied family backgrounds.

### **Nature of Subject**

Mathematics is an integrated part of the National Curriculum across many subject areas. All pupils need a good foundation in the subject as they will use it in everyday situations throughout their life.

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

Pupils should gain confidence and learn a variety of skills to tackle problems. Pupils learn how to evaluate their work to improve and extend their knowledge.

The aims of teaching mathematics at Rosewood School are:

- To encourage all students to engage in the mathematics curriculum;
- to promote enjoyment of learning through a combination of practical activity, exploration and discussion;
- to promote confident engagement and competence with numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to understand the importance of mathematics in everyday life.
- To achieve a functional level of numeracy.

### **Knowledge, Skills and Understanding**

Key concepts, key processes, range and content, and curriculum opportunities make up the main programme of study within mathematics.

Key concepts underpin the study of mathematics. Pupils need to understand these concepts in order to broaden and deepen their knowledge, skills and understanding. These are:

- Competence

- Creativity
- Application and implications of mathematics
- Critical understanding.

Key processes are the essential skills and processes in mathematics that pupils need to learn to make progress. These are:

- Representing
- Analysing
- Interpreting and evaluating
- Communicating and reflecting

Range and content covers the four key areas of the mathematics in which pupils are assessed. These are:-

1. Mathematical processes and applications (MA1)
2. Number and Algebra (MA2)
3. Geometry and Measures (MA3)
4. Handling Data (MA4)

Teaching ensures that pupils are able to use and apply mathematics (MA1) through contexts of MA2-MA4.

Curriculum opportunities arise in many other subjects in which mathematics plays an integral part.

## **Teaching and Learning approaches**

Teaching and learning approaches will be in line with the Teaching and Learning Policy.

The school uses a variety of teaching to accommodate learning styles in mathematics. Our principal aim is to develop children's knowledge, skills and understanding. During our daily lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources, such as number lines, number squares, digit cards and small apparatus to support their work. ICT is used in mathematics lessons to facilitate engagement and support learning. Wherever possible, we encourage the children to apply their learning to everyday situations.

In all classes children have a wide range of mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work and in other lessons by organising the children to work in pairs or small groups on open-ended problems or games. We use classroom assistants to support some children, and to ensure that work is matched to the needs of individuals.

## **Mathematics Curriculum Planning**

Mathematics is a core subject in the National Curriculum, and follow the statutory requirements of the Programmes of Study for Mathematics.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). Our planning gives a detailed outline of what we teach in the long term, while our yearly teaching programme identifies the key objectives we teach to in each year. Discussion also takes place between the subject link – governor, HLTA's and TA's prior to and during lessons.

Our medium-term mathematics plans, which are adapted from the long term planning, and give details of the main teaching objectives for each term, define what we teach. They ensure an appropriate balance and distribution of work across each term. These plans are kept and reviewed by the subject leader.

It is the class teacher who completes the weekly plans for the teaching of Mathematics. These unit plans list the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons are to be taught, these are informed by the medium term planning. The class teacher keeps these unit plans, and the class teacher and subject leader often discuss them on an informal basis.

## **Assessment and Reporting**

Assessment and reporting is in concert with the whole school Marking and Assessment Policy. Work is differentiated by input and output.

## **Cross Curricula Links**

The scheme of work for this subject will include opportunities for Literacy across the Curriculum, Numeracy across the Curriculum and ICT. It will also include opportunities for social, moral, spiritual, cultural and citizenship issues to be addressed. These will be highlighted in the scheme of work.

## **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 actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons we are encouraging children to read and interpret problems, in order to identify the mathematics involved as a means to develop their levels of general literacy. Due to the wide range of literacy levels within each class and Key Stage students are generally engaged at their individual levels.

### **Personal, Social and Health Education (PSHE) and Citizenship**

Mathematics contributes to the teaching of PSHE and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present students with real-life situations in their mathematics work on Money, Data Handling, Measures & Using & Applying, therefore adding to the Functional Skills aspect of the curriculum.

### **Spiritual, Moral, Social and Cultural Development**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together to develop general social skills.

## **Monitoring and Evaluation**

The subject curriculum is to be reviewed each year and subject advisors (where available) are to be consulted in this process. The curriculum delivered should be monitored by the subject teacher and a senior member of staff charged with that responsibility. An annual audit of the curriculum is undertaken to evaluate each year's curriculum delivery and to aid future planning.

## **Management of the subject**

The Subject Co-ordinator has a job specification giving detailed areas of responsibility. The overview of the school's curriculum is the time management responsibility of the Assistant Head Teacher.

## **Special Needs**

Subject will follow the guidelines laid out in the Special Educational Needs Policy.

## **Health and Safety**

All activities, whether in school or off site, will be guided by the school's Health and Safety Policy.

Risk assessments are completed for all off site activities on each occasion and each pupil's participation is considered on the basis of the individual, the group and the activity. Risk assessments are held centrally by the Health and Safety Co-ordinator. The Health and Safety Policy Risk Assessment Procedure should be seen as a positive process to enable as many pupils access to activities as possible.

## Equal Opportunities

Rosewood School is committed to working towards equality of opportunity in all aspects of school life and aims to provide access to the curriculum for all its pupils. Rosewood School is also committed to fulfilling its obligations under '*The Duty to Promote Race, Gender and Disability Equality*'. The School will be producing *Action Plans* in respect of these duties and conducting *Equality Impact Assessments*.

### **Child Protection**

Uses of Maths included in Child Protection.

Awareness of percentages, relating to alcohol misuse.

Ability to read calendars, relating to dates of menstrual cycles and pregnancy.

Ability to read and interpret graphs/charts/tables relating to drug/alcohol misuse.

### **Mathematics and Inclusion**

At **our school** we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We meet the needs of all of our pupils with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language, and we take all reasonable steps to achieve this.

Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style and differentiation – so that we can take some additional or different action to enable the child to learn more effectively.

Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

### **Assessment for Learning**

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use the class record of the key objectives as the recording format for this.

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments. We also make annual assessments of children's progress measured against age related expectations.

## **APPENDIX**

- **Subject Guidelines**
- **Resources**
- **Scheme Matrix**

## **THE ROSEWOOD SCHOOL**

### **Guidelines 2017 - 2018**

#### **Mathematics and ICT**

**Information and communication technology is used throughout KS3 & 4 and** enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly.

#### **KEY STAGE 2**

The small number of Key Stage 2 pupils that we have on roll are taught from the Collins Busy Ants text books, which follow the National Curriculum.

Responsibility for teaching Key Stage 2 Maths is held by a designated Key Stage 2 teacher.

#### **KEY STAGE 3**

Pupils will be taught the programme of study from “Collins Maths Framework” scheme for Key Stage 3. This scheme fulfils the new National Curriculum requirements and is tailored to the needs of our children. It also includes ‘additional support’ books for children working at the lower end of National Curriculum attainment levels.

The work is subdivided into topics on a yearly scheme matrix provided.

Work is differentiated to take into account of the differing abilities of pupils. Suitable resources are also available to reinforce learning through visual and kinaesthetic learning as well as those who learn best by auditory learning.

Throughout Key Stage 3 & 4, pupils also use designated sites (Mymaths, Manga High, Cool Maths Games, Sumdog & BBC Bitesize) to monitor their progress and reinforce learning. These programmes constantly assess pupils and increase the level that pupils work at to meet their individual needs. The Internet is also used as a research tool and consolidation work can be acquired.

Lesson delivery is a cooperative exercise between teacher and teaching assistant.

#### **KEY STAGE 3/4**

##### **Entry Level**

The Entry Level Certificate scheme leads to final certification and external accreditation by OCR at three Levels (1-3). It is possible for certification to be achieved at stages during the course.

The delivery is through a series of items equally divided between MA2, MA3 and MA4. Candidates do not necessarily need to have been taught all items to achieve



accreditation. This is only undertaken by pupils that are deemed to be at risk of not completing GCSE.

### **GCSE Mathematics AQA**

Due to the extensive content of the new GCSE curriculum, pupils begin studying for their GCSE Maths in year 9, and follow Schemes of work which are directly linked to the textbooks and online resources which we have subscribed to.

Pupils follow Mathematics GCSE (8300), which leads to final certification and external accreditation by AQA. It is a linear course which is accredited upon successful completion of three examinations at the end of KS4.

GCSE Mathematics has a Foundation tier (grades 1 – 5) and a Higher tier (grades 4 – 9). Students must take three question papers at the same tier meaning that the tier they are entered for will depend upon the ability and attainment which they show throughout KS4. The content of the two tiers overlaps, meaning that a decision on which tier a pupil will be entered for does not need to be made prior to the commencement of their studies.

### **Breakdown of GCSE mark allocation**

#### **Paper 1: non-calculator**

##### **What's assessed**

Content from any part of the specification may be assessed

##### **How it's assessed**

- written exam: 1 hour 30 minutes
- 80 marks
- non-calculator
- 33⅓% of the GCSE Mathematics assessment

##### **Questions**

A mix of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a student progresses through the paper.

## **Paper 2: calculator**

### **What's assessed**

Content from any part of the specification may be assessed

### **How it's assessed**

- written exam: 1 hour 30 minutes
- 80 marks
- calculator allowed
- 33 $\frac{1}{3}$ % of the GCSE Mathematics assessment

### **Questions**

A mix of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a student progresses through the paper.

## **Paper 3: calculator**

### **What's assessed**

Content from any part of the specification may be assessed

### **How it's assessed**

- written exam: 1 hour 30 minutes
- 80 marks
- calculator allowed
- 33 $\frac{1}{3}$ % of the GCSE Mathematics assessment

### **Questions**

A mix of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a student progresses through the paper.

## **Method of coursework moderation**

Coursework is moderated for Entry Level Certification via post.

## **RESOURCES**

Collins	Maths Framework 7, 8 and 9. Associated teaching learning resources.
Internet	All pupils have a login to Manga High Maths, MyMaths.co.uk and Sumdog which are accessed on a regular basis. Challenges can be set by staff relating to work being undertaken in class.
Cambridge University Press	AQA GCSE Text books Foundation and Higher Tiers Associated teaching resources
Wall Charts	Various Topic Related
Various hands on resources to aid teaching.	