

Mathematics Policy

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Ipsley CE RSA Academy

Policy for Mathematics

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1. Introduction

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to deepen understanding of concepts and master these.

At Ipsley CE RSA Academy we believe that mathematics is important in every day life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them through to adult life.

We are continually aiming to raise the standards of achievement of the pupils at Ipsley RSA Academy. In mathematics, in the primary phase, we aim to support and increase all children's access to excellent teaching, leading to success in learning. We believe that all children deserve:

To be set appropriate challenges

To be taught well and be given the opportunity to learn in ways that maximise their chances of success

To have adults working with them to tackle the specific barriers to progress they may face

At Ipsley RSA Academy we follow the Primary 2014 curriculum which ensures continuity and progression in the teaching of mathematics from one year to the next. The planning structure for each year group is organised into sections. There are 6 sections in KS2. Each section is taught over 6-9 weeks, and within each section the fluency, reasoning and problem solving skills are taught and explored throughout.

These sections are:

Section 1: Number and place value

Section 2: Addition, subtraction, multiplication and division

Section 3: Fractions, decimals and percentages

Section 4: Measurement

Section 5: Geometry - Shapes and position

Section 6: Statistics, ratio, proportion and algebra

Teachers are also given the flexibility to plan work that suits the needs of particular children in response to ongoing assessment for learning as well as formal and informal assessments.

Within the teaching of content as outlined above, special consideration is given to teaching methods as laid out in the Calculation Policy and time is allocated for this to happen. We firmly believe that this is pivotal in raising the attainment of pupils across the school.

2. Rationale

All school policies form a corporate, public and accountable statement of intent. As a middle school, it is important to create an agreed whole primary approach of which staff, children, parents, governors and other agencies have a clear understanding. This policy is the formal statement of intent for mathematics in KS2. It reflects the essential part that mathematics plays in the education of our pupils. It is important that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster self-confidence and a sense of achievement. The policy also facilitates how we, as a school, meet the requirements of recent Education Acts and National Curriculum requirements.

3. Principles

We ensure that:

Policy and provision are evaluated and reviewed regularly

Resources of time, people and equipment are planned, budgeted for and detailed when appropriate in the SDP

The governing body fulfil their statutory responsibility with regard to mathematics

Cross curricular opportunities will be regularly planned for

Planning of mathematics ensures continuity and progression across all year groups in KS2

4. Aims

In KS2 Primary, at Ipsley CE RSA Academy, we aim to provide the pupils with a mathematics curriculum which will produce individuals who are numerate, literate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment so that pupils can develop their mathematical skills to their full potential.

Specific

Our pupils should:

- Have a sense of the size of number and how it fits into the number system
- Know off by heart number facts such as number bonds and multiplication tables
- Use what they know by heart to figure out numbers mentally
- Calculate accurately and efficiently, both mentally and in writing, drawing on a range of calculation strategies (in line with the school written calculation policy)
- Make sense of number problems including non-routine problems, and recognise the operations needed to solve them
- Explain their methods and reasoning using the correct mathematical terms and vocabulary
- Judge whether their answers are reasonable and have strategies for checking them where necessary
- Use concrete, pictorial and abstract representations within their jottings and working out of answers
- Suggest suitable units for measuring and make sensible estimates of measurements
- Explain and make predictions from the numbers in graphs, diagrams, charts and tables
- Develop an understanding of the properties of 2D and 3D shapes

5. Provision

Pupils are provided with a variety of opportunities to develop and extend their mathematical skills in and across each year group in KS2.

Lessons follow a format. Each lesson follows the format whereby children have the opportunity to:

- recap **previous learning** and then build upon this
- Children to lead into the **new learning** to make lessons more connected and fluid. These lessons are delivered with a concrete, pictorial and abstract approach, after the new learning has been introduced,
- Children have the chance to develop their **language** mathematically, enabling them to use vocabulary whilst reasoning.
- Children are then **modelled the new learning** in a variety of ways in order for this new learning to be embedded.
- This then leads to the children **applying their learning** independently to set tasks, relating to the learning objective. This teaching of mathematics provides opportunities for:
 - Group work
 - Paired work
 - Whole class teaching
 - Individual work
 - Speaking and listening opportunities

Pupils engage in:

- The development of mental strategies
- Written methods
- Practical work
- Investigational work
- Problem solving
- Fluency and reasoning
- Mathematical discussion

ICT

The effective use of ICT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we take into account the following points:

- ICT should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics.
- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives of those lessons.
- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it.

We recognise the importance of establishing a secure foundation in mental arithmetic before standard written methods are introduced. Staff are expected to use appropriate mathematical terminology in their teaching and children are also expected to use it in their verbal and written explanations.

All staff have a maths working wall in their classroom which reflects current work being taught and is in line with the requirements as outlined in the non-negotiable classroom environment policy.

Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use mathematics in real life contexts.

Key Stage 2

A typical maths lesson will last for 60 minutes. It will be structured like this:

Previous learning starter (5 minutes) - not necessarily in the lesson - can be done in other parts of the day

New learning (10 mins) New learning introduced in a concrete, pictorial and abstract representation to children.

Talk task (5 minutes) for language development. Children get to use the mathematic new vocabulary they have to get their ideas across orally and confidently to their peers and teachers

Teach and develop learning (10 minutes) New learning that has been learnt is now applied in a real life mathematical content and is modelled to children using the concrete, pictorial and abstract model.

Children apply independent learning (25 minutes) - Children then get the opportunity to talk the new modelled learning and apply this to a varied set of problems in order to deepen their understanding.

Plenary (5 mins in KS2) All time are approximate.

Each week each child will complete a multiplication test and this will be marked collectively and feedback provided immediately.

6. Assessment and record keeping

At Ipsley CE RSA Academy we are continually assessing our pupils and recording their progress. We see assessment as an integral part of the teaching process and endeavour to make our assessment purposeful, allowing us to match the correct level of work to the needs of the pupils, thus benefiting the pupils and ensuring progress. Assessment is carried out in the following way:

- Assessment for learning before every new topic has been introduced
- Making ongoing assessments and responding appropriately to pupils during day to day teaching. These 'immediate' responses are mainly verbal and are not normally recorded.
- Using knowledge of pupils from AFL tracking records
- Adjusting planning and teaching within sections of the lesson in response to pupil's performance
- Use of the assessment of student pupil tracker online to check progress and the coverage of the 2014 National Curriculum.
- Future planning is adapted in response to assessment outcomes.
- Use of information gained from statutory and optional tests
- Marking books by providing constructive feedback and gap tasks to check skills taught to provide information for future lessons. Children are to read comments and sign to develop effective communication between pupils and teachers.

7. Role of the Maths Lead

The mathematics lead is responsible for coordinating mathematics throughout KS2. This includes:

- Ensuring continuity and progression from year group to year group
- Providing all members of staff with guidelines e.g how aspects of mathematics should be taught such as problem solving or calculations.
- Advising on in-service training to staff where appropriate. This will be in line with the needs identified in the School Development Plan and within the confines of the school budget.
- Advising and supporting colleagues on the implementation and assessment of mathematics throughout school
- Assisting in the requisition and maintenance of resources required for the teaching of mathematics. Again this will be within the confines of the school budget

- Monitoring and evaluating the teaching and learning of mathematics through:
- Scrutiny of work
- Lesson observations
- Monitoring of planning
- Analysis of test data
- Learning walks

8. Differentiation

In KS2 the children are in mixed ability classes. This enables all children to be able to work with different peers as well as ability groups. These groupings are flexible and can be altered, depending on the section of the maths content being delivered and the understanding of the children. The teaching of Mathematics will be scaffolded differently for different ability groups where necessary, enabling each individual child to achieve the learning objective. Differentiation can be seen throughout mathematic lessons in the following ways.

- Grouping -Activities should always be based on the lesson theme and can be differentiated according to ability through the use of appropriate scaffolding.
- Common tasks - which are open ended, where differentiation is by outcome
- Resourcing - providing the appropriate resources to effectively support and move the learning forward.

9. Special Educational Needs

Wherever possible we aim to fully include SEND pupils in the daily mathematics lesson so that they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods.

Where necessary, teachers will, in consultation with the SENCO and maths lead, draw up an intervention strategy.

When planning teachers will try to address the child's needs through simplified or modified tasks or the use of support staff. By using the aims and skills laid down in the Calculation Policy, children will aim to improve these first.

10. Equal Opportunities

As a staff we endeavour to maintain an awareness of, and to provide for equal opportunities for all our pupils in mathematics. We aim to take into account cultural background, gender and Special Needs, both in our teaching attitudes and in the published materials we use with our pupils.

Greater Depth Pupils

Children who are identified as working at greater depth will be given tailored activities during maths lessons in order to consolidate and deepen their learning even further, so that they can master the year groups' objectives. These children's progress will be tracked.

11, Parental involvement

The role of the parents is very important and school seeks to support the education partnership between home and school. Parents may become involved in the following ways:

- Welcoming parents to help in the classrooms
- Regular opportunities for parents to have confidential discussions about their child's progress with the teacher
- Inviting them into school Parents Evenings each term to discuss the progress of their child
- Prominent displays around the school which promote the subject
- Parent workshops to match teaching at home and school as laid out in the calculation policy.

11. Homework

Homework is set once a week, usually on the Maths Watch programme or in the form of a written task.