

1. Intent

At Priory, our aim is that children will develop knowledge that will last a lifetime, along with strong skills to prepare them for the next stage of their education and the wider world beyond that, enabling them to lead a successful life and make a positive contribution to their community.

Our children are provided with a well taught, knowledge rich curriculum. The basis of this is full implementation of the National Curriculum ensuring breadth, balance and clear progression. Our expectations are high for all pupils: we never narrow our curriculum or deny any pupils the key knowledge taught to the class, unless it is absolutely in their best interest due to a significant learning need.

Children should leave Priory with a secure understanding of the basic skills and knowledge required within the EYFS, KS1 and KS2 curriculum and should be fluent in their use. Focussed time is provided at the start of each maths session to focus on, and embed, these skills using resources such as Rapid Recall and Times Table Rockstars. Main Maths sessions should focus on the development of new skills and also contain regular opportunities for application, problem solving and reasoning. The White Rose long term plan is used to ensure coverage and progression throughout the school and to provide clarity of expectations for each year group.

2. Rationale

Mathematics is a tool for everyday life. It is a whole network of concepts and relationships, which provide a way of viewing and making sense of the world. It is used to analyse and communicate information or ideas, and to tackle a range of practical tasks and real life problems. Mathematics also provides the materials and means for creating new imaginative worlds to explore.

3. Aims and Objectives

Using the New National Curriculum (2014) it is our aim to ensure that all pupils:

- Possess positive attitudes to mathematics, recognising that mathematics can be both useful and enjoyable.
- Become **fluent** in the fundamentals of mathematics, through varied and regular practice of increasingly complex problems over time.
- **Reason mathematically** by following a line of enquiry, understanding relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- develop confidence and competence with numbers and the number system through rapid recall
- Show competence and confidence in mathematical knowledge, concepts and skills.
- Show initiative and have the ability to work both independently and in cooperation with others.
- Can use and apply mathematics across the curriculum and in real life.

4. Knowledge, Skills and Understanding

The Early Years Foundation Stage Curriculum feeds into the new National Curriculum and the revised Primary Framework for mathematics. It is good practice to make use of cross-curricular links to enable children to use their learning in a real life context. Therefore, pupils should be given plenty of opportunities within sessions to use and apply the mathematical skills and concepts they have learned.

The school's calculation policy has been created to provide continuity throughout the school with all four operations, which in turn will facilitate measured progress for children in school.

At KS1 and KS2 teachers use the New National Curriculum (2014). Through careful planning and preparation, we aim to ensure that throughout the school children are given opportunities for:

- Practical activities and mathematical games.
- Problem solving.
- Application and Reasoning activities.
- Individual, group and whole class discussions and activities.
- Open and closed tasks.
- A range of methods of calculating e.g. mental, pencil and paper and using a calculator.
- Working with computers as a mathematical tool.

5. Scheme of Work

Our school scheme of work is a working document based upon the White Rose long term plan. It is used as a guide to plan for coverage and progression within each year group, and across the school. It is composed of ongoing plans produced on a week by week basis. A variety of resources are used to add to this, including the New National Curriculum (2014) and the revised Primary Framework for mathematics, White Rose, a wide range of textbooks, they are also used alongside the assessment objectives within Arbor and take into consideration the needs of our children.

6. Teaching and Learning

Our principal aim is to develop children's knowledge, skills and understanding of mathematics. During our daily lessons we encourage children's oracy skills by giving them opportunities to ask as well as answer numeracy questions, and to articulate their thinking. They have the opportunity to use a wide range of resources, such as number lines, number squares, digit cards and small apparatus or manipulatives to support their work – it is an expectation that each class in the school has a maths box, consisting of age appropriate resources, available to the children at all times. ICT is used in maths lessons for modelling ideas and methods and for practise (iPads). Wherever possible, we encourage the children to apply their learning to everyday situations and real life contexts. Concrete, Pictorial and Abstract (CPA) approaches should be used hand in hand throughout each year group in the school – hands on practical apparatus and images, support all learners, not just the very young or SEND, as they are proven to help the development of the mastery of mathematics.

In all classes children have a wide range of mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children. All children have the opportunity to work on concepts related to their year group's expectations: differentiation could be through support or through activities that will deepen their learning (apply to different contexts). Pupils are trained in choosing their own level of scaffold, or challenge, through the use of our 'medal maths' structure, in order to precisely meet their needs.

A range of strategies are used to support children including: differentiated group work, scaffolded progression, open ended problems or games.

7. Mathematics Curriculum Planning:

Mathematics is a core subject in the National Curriculum. Each class teacher is responsible for the mathematics in their class in consultation with and guidance from the mathematics leader.

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

- A daily maths lesson that will normally take the form of a 50-70 minute session, but sometimes will be taught in a longer block, for example during a special maths day. Staff will also plan opportunities to consolidate maths learning through other subjects, for example plotting graphs and reading data in science. These sessions should start with a 15/ 20 minute basic skills focus.
- A clear focus on direct, instructional teaching and interactive oral work with the whole class, workshops or groups.
- An emphasis on mental calculation through the use of our Rapid Recall program and Times Table Rockstars. Planning is collected and monitored at regular intervals by the mathematics leader.

Long Term Plan

This is based on the White Rose long term plan and is used in line with the New National Curriculum (2014) and the assessment objectives within Arbor, which detail what is to be taught over the year and provide teaching guidelines and overall objectives for each year group for the whole year.

Medium Term Plan

This organises the teaching of mathematics into termly or half-termly sections, again this is based upon The White Rose long term plan provided by the Maths Leader and can be accessed electronically. The plan is more detailed and the objectives are more specific in nature. This plan can, with the agreement of the maths lead, be adjusted by the teachers, who respond to the needs of their pupils and differentiate and structure accordingly. It also ensures a balanced distribution of work is undertaken across each term.

Short Term Planning

This details the mathematics curriculum over the week. The sequence of the lessons for the week is done in collaboration between the teachers within each year group to ensure parity in provision and to share expertise. This is recorded in the teachers planning books along with any additional notes (starter activities, etc.)

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Detailed written lesson plans are not expected, as teachers are expected to provide detailed lesson resources. The sequence of each lesson should be clear from this resource (basic skills starter, objective, input, differentiated tasks and exit task).

8. Assessment

From Year 1 to Year 6 pupils' performance will be described in terms of achievement of age related expectations in line with DFE guidance on the New Curriculum objectives (within Arbor). This will incorporate the Chris Quigley 'BAD' terminology:

Basic: understanding of basic facts and ideas relating to a concept – can tackle questions, sometimes with support.

Advancing: understanding of knowledge, independent application, can explain, use or summarise understanding

Deep: have a full understanding and can apply independently in different contexts/ solve problems/ justify and reason/ etc.

We use the on-line programme 'Arbor' to record assessments throughout the school.

From Year 1 to Year 6 each pupil's achievement of every learning objective taught is recorded using the Arbor online workbooks. Results from any NfER tests administered are also inputted. When a number of objectives have been assessed Arbor will support the award of a best level from 'BAD' based on all assessments. This is then agreed or amended by the class teacher based on the knowledge of the pupil. This system is used to identify any gaps in achievement for individual pupils and classes.

Cold Assessments – at the start of each week/ concept/ topic of teaching, a cold assessment should be carried out – this will inform teachers and children of gaps in understanding along with ensuring that existing knowledge is not taught unnecessarily.

Informal Assessments – these are done through discussion or observation of the child as and when the class teacher feels it is appropriate. This information may be recorded in weekly planning, through annotation of the child's work or directly onto classroom monitor.

Termly Assessments – NfER tests are carried out before the end of each term. These assessments can be used to back up 'teacher assessments' of each child's understanding in line with year group expectations (compared to National figures) and the results can be inputted onto classroom monitor

9. 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 speaking and listening, reading and writing.

For example, learners are improving their oracy skills when they explain their reasoning during the lesson and present their work to others. In English lessons, too, mathematics can contribute: e.g. younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts.

PSHCE

Mathematics contributes to the teaching of PSHE/ Jigsaw 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 children with real-life situations in their mathematics work to develop economic well-being.

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 have opportunities to work together and we give them the chance to discuss their ideas and results. Our children feel valued and are therefore confident in attempting tasks that are challenging. They are encouraged to discover how they can be 'amazing' and 'wonderful' mathematicians.

Computing

Information and communication technology 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 on the interactive whiteboards and the individual laptops to present

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information visually, dynamically and interactively, so that children understand concepts more quickly. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results, or when creating repeating patterns, such as tessellations. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships. Children also have access to TT Rockstars and a number of other Maths based websites, games and APPS.

10. Mathematics and Inclusion

At our school we teach mathematics to all children, whatever their ability and individual needs. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We endeavour to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents and those children where English is an additional language, and we take all reasonable steps to achieve this. We endeavour to support all children to take part within the main lessons and objectives that are taught through the use of different scaffolds as far as possible.

11. Monitoring and Evaluation

Mathematics provision is monitored by the mathematics leader with teaching observations taking place by the head teacher, senior leadership team and mathematics leader. The mathematics leader will examine pupils' work and monitor teachers' planning/ resources.

The work of the mathematics leader also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for mathematics in the school. The Mathematics leader meets with the Head teacher and Senior Leadership Team regularly to review mathematics provision in the school.

12. The Governing Body

The mathematics' governor is invited to visit the school to talk with the maths leader, teachers, and children and when possible, take part in some daily mathematics lessons. The mathematics' governor reports back to the full governors on a regular basis.

13. Marking

Marking in mathematics will be in line with the school's marking policy. Children's work will be ticked in green if correct and crossed in pink if incorrect – additionally a pink circle may be drawn around the point of error in their calculation or around incorrect number formation. Children are usually asked to evaluate how successful they consider they have been in achieving the learning objective, and to what standard – teachers do this alongside. They use a colour coded smile system (see marking policy), which correlates with the teacher's marking code and where appropriate children can add their own comments.

Our agreed marking code is used by children and staff to ensure that we all mark in the same way and that the children understand it. Our colour-coded system (see marking policy) clearly provides information on the child's achievement of the learning objective.

'Fix it' time is used to provide children with the opportunity to respond to marking. Teachers always provide time for pupils to improve their work and they check the work themselves afterwards.

14. Resources

All classrooms have an interactive white board which can be updated daily on-line, and a wide range of appropriate small apparatus (at least 4 maths resource boxes should be available in each classroom). A variety of practical resources are also available to children and other resources will be stored centrally in the mathematics store room. A wide range of online resources and books, which have been provided by the maths lead, are also available for teachers to plan from.

15. Home Learning:

Children will receive weekly basic skills home learning from Year 1 to Year 6. This will consist of a times tables skills book for children in Year 2 to 4, where children will practise their multiplication and division skills. These books will also deepen the understanding of inverse operations. Children will be expected to complete set amounts of Times Table Rockstars online in Year 5 and 6.

In Year 6, there may be extra work set in order to prepare for the National SATs assessments (and in any other year group if deemed necessary).

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Parents and carers can also request extra work to support their children with any areas needed.

16. Links to Other Policies

- Marking and Feedback
- Early Years Foundation Stage
- Assessment
- Teaching and Learning
- Home Learning

17. Monitoring and review:

The Maths Leader, The Senior Leadership Team and The Governing Body are responsible for reviewing the implementation and effectiveness of this policy. The policy will be reviewed every two years or earlier if necessary.

Policy Author: Lee Facey

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