Appleton Primary School

Policy for Mathematics

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Introduction

This is the policy for Mathematics for Appleton Primary School. It is effective from September 2019. It is intended to be a working document and will be reviewed when it is deemed necessary and useful.

What is mathematics?

Mathematics teaches us how to make sense of the world around us through developing a child's ability to understand the value of number, to calculate, to communicate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number, space and money sense in their everyday lives.

Aims and objectives

It is the aim of the school to encourage our children to become independent, competent mathematicians; to have a positive attitude to maths and to feel confident and comfortable with it.
Our main aims are to improve their fluency, to develop their mathematical language to reason and to be able to solve problems independently.

Aims

Our general aims are to:

- Provide effective learning opportunities in mathematics for all pupils;
- Encourage children to have enthusiasm and to enjoy mathematics through interesting and challenging lessons but are still within their capabilities;
- Develop an ability to think clearly, logically and systematically in mathematics with confidence and independence;
- Develop an appreciation of the nature of number, space and measure;
- Encourage a process of enquiry and investigation;
- Develop mathematical skills and knowledge accompanied by quick mental recall;
- Encourage persistence through a sustained work in mathematics which requires some perseverance over a period of time;
- Develop an awareness and understand the importance of the uses of mathematics in the outside world;
- Promote discussion and co-operation by engaging the children in group activities;
- Have a flexible approach, which encourages children to develop their own methods of calculation and problems solving, which they are able to explain, reason and prove to others, using a broad range of skills.

Objectives

It is intended that the children should:

- Have a sense of size and number and where is fits into the number system;
- Know by heart number facts such as number bonds, multiplication tables (by the end of year 4 for the majority of children) doubles and halves;
- Use a range of strategies to work out answers mentally;
- Calculate accurately and efficiently, both mentally and with pencil and paper, drawing on a range of calculation strategies stated in the calculation policy;
- Make sense of number problems, including non-routine problems and recognise the operations need to solve them;
- Explain their methods and be able to reason using correct mathematical terms and vocabulary;
- Judge whether their answers are reasonable and have arrange of strategies for checking them when necessary;
- Suggest suitable methods for measuring and make sensible estimates of measurements;
- Explain and make predictions from the numbers in graphs, diagrams, charts and tables.

Teaching and learning styles

The school uses are a variety of teaching and leaning style in mathematics lesson. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a range of activities which will include direct teaching but will also encourage children to be inquisitive and develop their own thinking. We also have daily sessions specifically to promote speed and accuracy of children's quick recall of facts. During their lessons we encourage children to ask as well as answer mathematical questions. Careful planning of key questions, based upon Bloom's Taxonomy, promotes higher order thinking skills. Children 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. They also use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday real-life situations.

In all class there are children of differing mathematical abilities. We recognise tis 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 on open-ended problems or games. We use teaching assistants to provide appropriate support to individuals or to groups of pupils. Teaching assistants within Appleton Primary School are viewed as an important 'asset' to the school and as such are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding is constantly updated through involvement in school-based inset.

Mathematics curriculum planning.

Mathematics is a core subject in the National Curriculum, and we use this as the basis of implementing the statutory requirements of the programme of study for mathematics. We carry out the curriculum planning in mathematics in line with the structures and recommendations outlined in the latest curriculum. Our plans list the specific learning objectives and success criteria for each lesson and give details of how the lessons are to be taught. Teachers plan for their particular age ensuring it is both appropriate and challenging and in line with the school calculation policy.

The Foundation Stage

We teach mathematics in our foundation classes. In the foundation stage the children will follow the EYFS Curriculum, we relate the mathematical aspects of the children's work to the objectives set out in the Ages and Stages and the Early Learning Goals, this underpins the curriculum planning. We give all the children ample opportunity to develop their understanding of number, measurement, patter shape and space through varied activities that allow them to enjoy, explore, practice and talk confidently about mathematics and solve problems.

In foundation, children's mathematical development is also carefully planned for, through adult-led focus activities and through mathematical learning in all areas of provision. Opportunities for child initiated learning in mathematics is supported by quality resources in both indoor and outdoor areas. Planning is in place to support children's mathematical development, this derives form constant AFL to implement the needs of a particular individual or group. Daily mental mathematics sessions are planned to ensure children are ready for year one and their curriculum.

Mathematical resources are displayed so that the children have continual access, items such as number lines and counting apparatus ae available. Whilst concepts of shape, space, direction, size, length, capacity and mass are available to the children in another area. They are also developed through sand, water and tactile play, outdoor provisions, small world play, storytelling and nursery rhymes for example.

Equal opportunities

All the children within the school are entitled to a daily mathematics lesson. The teaching methods used need to take this into account to ensure that all children, regardless of race, gender, or educational ability, within the class have access to quality first teaching and learning. This may be achieved through a number of ways including:

- Differentiated questioning;
- Use of support staff;
- IEP's (Individual Education Plan)
- Use of practical equipment;
- Open ended tasks, enabling a range of responses;
- Using interests and experiences of the children to motivate;
- Real -life uses of mathematics.

Cross curricular links

Mathematics has many links with the other curriculum areas, particularly Science, Technology, Geography, Computing and Jigsaw, but links can be made where relevant in other subjects. This will be evident with in their Science books or Curriculum books.

Social, moral, spiritual and cultural opportunities

The mathematics curriculum promotes the British values of tolerance and resilience through problem solving and understanding of concepts, encouraging pupils to persevere and try different methods to arrive at a correct solution. Teamwork through talk partners, peer assessment and group work underpins our teaching and learning style.

Children work together in all areas of the maths curriculum to support each other and build mutual respect for one another. Children are taught to use 'mistakes' in a positive light and learn from them in all maths lessons. This fosters confidence and builds self-esteem and encourages them to take risks and become lifelong learners whilst using their mathematical skills in all aspects of life. Children are encouraged to:

- Sustain their self-esteem in their learning experience.
- Develop ability for independent thought
- Recognise the unique value of each individual
- Listen and respond appropriately to the views of others
- Be confident to respond to errors proactively
- Show respect for resources
- Display a willingness to participate
- The School's Core Values are promoted throughout all maths lessons, as appropriate.

Assessment and recording

At Appleton Primary School we recognise that Assessment for Learning lies at heart of promoting learning and in raising standards of attainment. We further recognise that the effective AFL (Assessment for Leaning) depends upon on using the information gained. White Rose Maths Learning Hub and Test Base are used regularly to track and target the children. The assessment procedures within our school encompass:

- Making on-going assessments and responding appropriately to pupils during 'day-to-day' teaching. These 'immediate' responses are mainly verbal but can also be recorded. Planning can be used to make notes about lessons. Written feedback in books is in response to the success criteria of the lesson;
- Using knowledge of pupils drawn from KPI's are used to track and monitor children's progress. Adjusting planning and teaching in response to pupils' performance;
- Use of 'AFL' questions to check learning against objectives as the end of each block of work and at the end of each term;
- Moderation of children's work will take place within phases and withing the Constellation Trust.

Response to Children's work

We recognise the importance of responding to children's work, whether orally, written or through diagrams. We seek to encourage children by highlighting positive achievements. This also may include certificates at the weekly praise assembly, certificates or stickers in class. This could include praise for use of a viable method even if the results were incorrect. Children are give opportunities, and actively encourage to explain their work through sentence stems and display their work when it is appropriate. The children should be given the opportunity to respond to the marking in their books (see marking policy) and be given further challenges to develop wither their knowledge or understanding of a particular concept. They are encouraged to value and respect the work of others.

Homework

Homework is an opportunity for the teaching in school to be consolidated at home. It is not intended just to be written work but can involve counting, practicing number facts, games or real-life problem solving. The children have the opportunity to select and present their work in which ever format they choose. This can involve using ICT.

Resources

Each classroom has a selection of basic equipment as well as specific resources for that year group. There are also many resources avail with eh class of the co-ordinator which are freely available and accessible to all staff. Working wall should be used effectively around the school for refence showing the children's work (including mistakes and corrections). They should also include the 'S' planning for each block. Number lines, counting sticks, hundred squares and most importantly mathematical vocabulary should be part of every classroom.

Role of the Co-ordinator

The co-ordinator has the responsibility for:

- Writing the maths policy, calculation policy and scheme of work, ensuring continuity and progression throughout the school.
- Ensuring all staff understand and follow the above.
- Monitoring the effectiveness and leading reviews of the policy and implementing changes agreed by SLT and staff.
- Prepares, organises and leads CPD and joint professional development. Ensuring all staff (including apprentice TA's) have access to training in and out of school.
- Ensuring resources required are available.
- Advising staff on any mathematical issues.
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.
- Works with the SENDCO and Intervention Co-coordinator.
- Keeps parents informed about Mathematics issues
- Providing support with Maths KPI's.

Vicki Peck
Maths co-ordinator
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