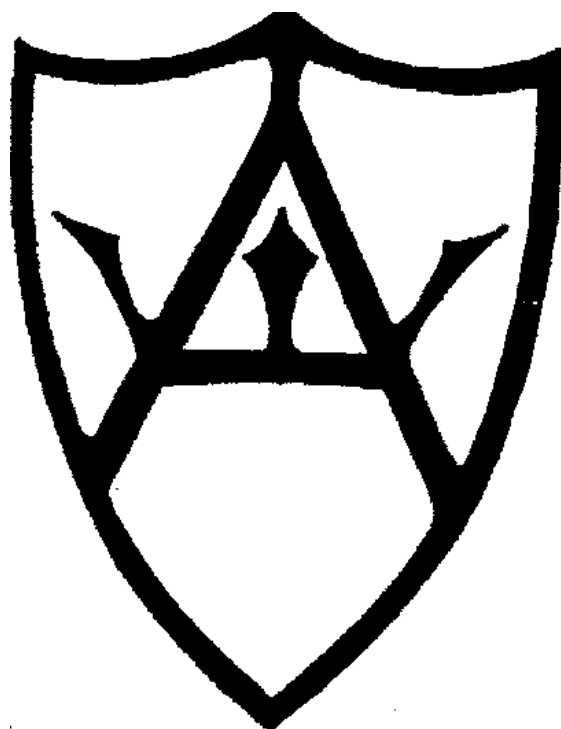


Alfriston School



Mathematics Policy

Reviewed: Sept 2015

Introduction

At Alfriston Primary school we value every pupil and the contribution they have to make. As a result we aim to ensure that every child achieves success and that all are enabled to develop their skills in accordance with their level of ability.

Mathematics is both a *key skill* within school, and a *life skill* to be utilised throughout every person's day to day experiences.

Rationale

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 think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum for Mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Written Calculations Policy, this ensures continuity, progression and high expectations for attainment in mathematics.

It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society. At Alfriston we use the National Curriculum for Mathematics (2014) as the basis of our mathematics programme. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education. Assessment for Learning, an emphasis on investigation, problem solving, the development of mathematical thinking and development of teacher subject knowledge are therefore essential components of the Alfriston approach to this subject.

Aims

- To foster a positive attitude to mathematics as an interesting and attractive part of the curriculum.
- To develop the ability to think clearly and logically, with confidence, flexibility and independence of thought.
- To develop a deeper understanding of mathematics through a process of enquiry and investigation.
- To develop an understanding of the connectivity of patterns and relationships within mathematics.
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world.
- To develop the ability to use mathematics as a means of communicating ideas.
- To develop an ability and inclination to work both alone and cooperatively to solve mathematical problems.
- To develop personal qualities such as perseverance, independent thinking, cooperation and self-confidence through a sense of achievement and success.
- To develop an appreciation of the creative aspects of mathematics and an awareness of its aesthetic appeal.

Principles of Teaching and Learning

The school uses a variety of teaching and learning styles in mathematics lessons during each lesson.

Our staff strive to:

- ✓ Build children's confidence and self-esteem;
- ✓ Develop children's independence;
- ✓ Allow all children to experience regular success;
- ✓ Contextualise mathematics;
- ✓ Use practical approaches to mathematics (models and images);
- ✓ Encourage children to select independently resources to help them;
- ✓ Challenge children of all abilities;
- ✓ Encourage children to enjoy mathematics;
- ✓ Develop a child's understanding of mathematical language;
- ✓ Learn from teachers, peers and their own mistakes;
- ✓ Allow children to ask questions as well as answer them.

Our pupils should:

- Have a well-developed sense of the size of a number and where it fits into the number system (place value);
- Know by heart number facts such as number bonds, multiplication tables, doubles and halves;
- Use what they know by heart to figure out numbers mentally;
- Calculate accurately and efficiently, both mentally and on paper, drawing on a range of calculation strategies;
- Make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them;
- Explain their methods and reasoning, using correct mathematical terms;
- Judge whether their answers are reasonable and have strategies for checking them where necessary;
- 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 spatial awareness and an understanding of the properties of 2D and 3D shapes.

To provide adequate time for developing mathematics, maths is taught daily and discretely. However, application of skills are developed across the curriculum.

Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum and we use the objectives from this to support planning and to assess children's progress.

Staff ensure coverage of all areas of the National Curriculum and weekly plans are used to differentiate objectives according to children they teach. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. The class teacher keeps these individual plans, which they annotate according to the success of the lesson.

Assessment

Assessment is an integral and continuous part of the teaching and learning process at Alfriston and much of it is done informally as part of each teacher's day to day work. Teachers integrate the use of formative assessment strategies such as: effective questioning, clear learning objectives, the use of success criteria, effective feedback and response in their teaching and marking and observing children participating in activities. Findings from these types of assessment are used to inform future planning.

We make termly summative judgements of each child's achievement. Up to the end of 2014/15 this has been in terms of National Curriculum levels and sublevels in Years 1 to 6. However, during 2015/16 we will be developing and moving towards a new system of assessing without these levels in line with the new curriculum, as is the national requirement.

Some of the evidence base for these assessments may come from day-to-day class work, but evidence can also come from specific tasks and tests used to assess the degree of retention, independence and breadth of application shown. We use these judgements to assess progress and achievement against individual, school and national targets. We identify and target those children not making expected progress and intervene accordingly.

Assessment is tracked termly using the school's tracking system and pupils' progress is discussed in Pupil Progress Meetings. Children who haven't made progress are a focus in teacher's planning. We pass all assessment and tracking information on to the next teacher at the end of the year, so that s/he can plan for the new school year.

In 2014/15, Teachers in Year 2 also used the statutory End of Key Stage National Curriculum tasks and tests as one part of the assessment picture for each child.

In 2014/15, Teachers in Year 6 also used the statutory End of Key Stage National Curriculum Tests.

There will be new National Curriculum tests for Year 2 and Year 6 for the 2015/16 academic year.

We give parents a formal opportunity to discuss their child's progress and attainment three times a year in a teacher/parent consultation meeting. We also write a mid-year summary report and a full end of year report of each child's progress and achievement for parents.

Early Years Foundation Stage (EYFS)

In the Early Years Foundation Stage (EYFS), we relate the mathematical aspects of the children's work to the Development Matters statements and the Early Learning Goals (ELG), as set out in the EYFS profile document.

Through planned and spontaneous play opportunities children will have the opportunity to:

- Count and develop numeracy skills;
- Recognise and write numbers;
- Develop mathematical strategies and problem solve;
- Develop an understanding of shape and space;
- Explore time, weight, size and capacity and develop early understanding of the ways in which these can be measured;

- Develop an understanding of and use mathematical language;
- Gain an understanding of early algebra and pattern in Maths through patterning and creating repeating sequences.

Key features of our EYFS mathematics teaching:

- There are opportunities for children to “bump” into Maths (both inside and outside) – through both planned activities and the self-selection of easily accessible quality maths resources;
- Children are just as likely to access the Mathematics curriculum through cooking activities, building activities or in the garden;
- Whenever possible children’s interests are used as a vehicle for delivering the curriculum, for instance an interest in dinosaurs may give rise to sorting, counting and recording the number of dinosaurs in small world play;
- Staff support children’s learning through planned activities but also value and support self-initiated mathematical learning;
- Appropriate scaffolding and challenge is provided by all staff to support and extend children’s learning;
- Staff model a rich mathematical vocabulary and use practical situations as they arise as problem solving exercises;
- Differentiated activities meet the needs of children of different abilities and learning styles – for example number action songs to meet the needs of more physical or kinaesthetic learners;
- Careful observation and tracking enables staff to monitor children’s progress, and that of groups of children, and plan for the next stage in their learning;
- We encourage children to take appropriate risks in their learning, however adults are vigilant and ready to intervene to ensure children’s safety. Health and Safety policies and risk assessments support us in maintaining a safe learning environment for our children.
- We understand that a few children may well achieve the Mathematics Early Learning Goals during their time in the Reception Year and familiarity with the National Curriculum allows us to plan for their future learning.

The profile for Mathematics areas of learning are Number (ELG 11) and shape, space and measures (ELG 12). We continually observe and assess children against these areas using their age-related objectives, and plan the next steps in their mathematical development through a topic-based curriculum.

Mathematics Learning Environment

We aim to create a rich and stimulating Mathematics environment that promotes learning and independence through Maths Working Walls in each classroom. Maths Working Walls and resource areas in the classroom will:

- Support the children with their Maths;
- Contain information relevant to current teaching (key vocabulary, models/images, success ladder, targets);
- Include Maths resources clearly labelled and accessible for the children;
- Be clear/large enough for children to read;
- Be changed regularly so it doesn’t become just ‘wallpaper’.

Resources

A bank of essential mathematics resources are kept in each classroom. Further resources relating to specific mathematics areas are kept centrally. Using the school and local environment can also be an excellent outdoor resource for mathematics learning.

Information and Communication Technology

Teachers should use their judgement about when ICT tools should be used, including the use of calculators.

Home/school links

We aim to raise the profile and understanding of our approach to Maths with parents, and they are encouraged to be actively involved in supporting children's learning. Parent Workshops are organised with relation to the curriculum, assessment and supporting children's mathematical learning. Our school website also provides updated information for parents. Please also see our Home Learning Policy.

Role of the Subject Leader

- ✓ Ensures teachers understand the requirements of the National Curriculum and helps them to plan lessons. Leads by example by setting high standards in their own teaching;
- ✓ Prepares, organises and leads CPD and joint professional development;
- ✓ Works with the Inclusion Manager/SENCO and Senior Leadership Team;
- ✓ Observes colleagues with a view to identifying the support they need;
- ✓ Discusses regularly with the Headteacher and the mathematics governor the progress of implementing National Curriculum for Mathematics in school;
- ✓ Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.