

- Short Term: Teachers make these assessments as part of every lesson adjusting their daily plans accordingly; this may be through feedback from teaching assistants, through marking or observations made during the lesson. These will be jotted onto daily plans.

- Medium-Term: Teachers measure progress against National Curriculum objectives and aims which inform planning for future units of work using Herts for Learning planning outlines. Notes will be jotted onto weekly plans which informs objectives going forward.

- Formative Assessment takes place termly. Children are assessed against Herts for Learning Guidelines which allows for gap analysis to be carried out by teachers to inform future planning and learning.

### Cross-Curricular

The skills that children develop in Maths are linked to and applied in every subject of the curriculum. Our curriculum has been designed to enable as many opportunities for children to apply Maths skills as possible. Outdoor learning is used across the curriculum to enable children to develop their learning and this is true of maths lessons too.

### Homework

Children from Nursery—Year 6 will be given a homework grid each half term. The grid will enable children to select which activity they would like to complete each week and these activities are recorded in their homework folder (EY) or homework book (Y1-6). Homework will be collected in on a specific day to enable teachers to mark homework. Within the homework grid each half term there will be at least one piece of homework which is related to maths. In addition to the homework grid children are encouraged to practise their times tables and other mental maths facts and they may also be given extra homework linked to maths learning in class from the week.

### Early Years Provision (Nursery and Reception)

Teachers within Early Years use Development Matters to support teaching and learning. Maths within the Early Years is vastly language based and is explored through talk and play.

### Equal Opportunities

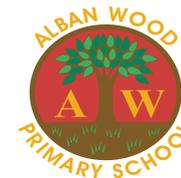
At Alban Wood we teach Mathematics to all children. Learning is differentiated by activities specific to the level the child is working at, by adult support and resources. Teachers will aim to give every pupil the opportunity to experience success in learning and to achieve as high a standard as possible.

Some children may have additional Maths support through IPMs (Individual Provision Maps) to support gaps in learning or to extend our more able learners.

### Health and Safety

Teachers should be aware of the health and safety implications of the mathematics curriculum. Children are made fully aware of the potential hazards of tools and equipment and are taught how to use such equipment safely.

Policy written: November 2015



## Alban Wood Primary School – Mathematics Policy

### Statement of Aims

Mathematics is a tool for everyday life. 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 healthy and enthusiastic attitude towards mathematics that will stay with them.

### The National Curriculum aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

### In addition to this our pupils will learn to:

- Develop the appropriate mathematical language associated with number, shape and position;
- Use and apply mathematics in practical tasks, in real life problems and in acquiring further knowledge, skills and understanding in the subject itself;
- Understand and use the four operations of number in relevant contexts;
- Understand relationships between numbers, learn basic number facts and develop a range of computational methods;

- Use their mathematical skills in simple, and then more complex, problem solving;
- Collect, interpret and represent data in tabular, graphical and diagrammatic form;
- Develop mental methods of calculation and fluency;
- Recognise, describe and represent shapes and patterns in terms of their properties, location and movement;
- Measure quantities including length, area, volume/capacity, angle, temperature, time and mass;
- By the time children reach Year 6 they will be introduced to ratio/ proportion and language of algebra as a means for solving a variety of problems.

### Maths teaching and learning

Maths teaching at Alban Wood is creative, challenging and inspiring. Teachers attend courses throughout the academic year to develop their subject knowledge and creativity linked to the maths curriculum.

Maths lessons are taught daily from Year 1 to Year 6. These lessons follow the National Curriculum and build upon each lesson. Children record their maths learning in a Maths book. This book shows discrete maths teaching and learning from their daily maths lesson as well as maths learning as a result of cross curricular learning (topic teaching).

In addition to whole class maths teaching, children have individual maths targets. These are recorded in the front of maths books and are changed when children have met the targets; this will be at different times for different children. During pupil voice monitoring children are invited to talk about their targets and explain how they have met them.

This policy is to be used in conjunction with the Maths Calculation policy. The policy outlines a model progression through written strategies for addition, subtraction, multiplication and division in line with the new National Curriculum. The policy is vital to ensuring a consistent approach, enabling children to progress stage by stage through models and representations they recognise from previous teaching, allowing for deeper conceptual understanding and fluency.

### Mental maths fluency

At Alban Wood we encourage the development of mental maths fluency and teach children to make real links between class teaching of maths and maths within the world. To develop this daily mental maths activities are planned for as part of the maths lesson. In addition, children in Year 5 and Year 6 take part in bi monthly mental maths challenges and children from Year 1—Year 6 complete Number Superstars weekly. This is a mental maths challenge in which children are timed and try to complete the planet without any errors. When children complete the challenge they move to the next planet and their achievement is celebrated in assembly with a certificate.

It is important to ensure a balance between written and mental maths although it is recognised that within Early Years and Key Stage, at times, a higher profile will be placed upon mental maths.

By the end of Year 6 children will progress through the following mental maths skills:

#### To add and subtract successfully, children should be able to:

- recall all addition pairs to  $9 + 9$  and number bonds to 10
- recognise addition and subtraction as inverse operations
- add mentally a series of one digit numbers (e.g.  $5 + 8 + 4$ )
- add and subtract multiples of 10 or 100 using the related addition fact and their knowledge of place value (e.g.  $600 + 700$ ,  $160 - 70$ )
- partition 2 and 3 digit numbers into multiples of 100, 10 and 1 in different ways (e.g. partition 74 into  $70 + 4$  or  $60 + 14$ )
- use estimation by rounding to check answers are reasonable

#### To multiply and divide successfully, children should be able to:

- add and subtract accurately and efficiently
- recall multiplication facts to  $12 \times 12 = 144$  and division facts to  $144 \div 12 = 12$
- use multiplication and division facts to estimate how many times one number divides into another etc.
- know the outcome of multiplying by 0 and by 1 and of dividing by 1
- understand the effect of multiplying and dividing whole numbers by 10, 100 and later 1000
- recognise factor pairs of numbers (e.g. that  $15 = 3 \times 5$ , or that  $40 = 10 \times 4$ ) and increasingly able to recognise common factors
- derive other results from multiplication and division facts and multiplication and division by 10 or 100 (and later 1000)
- notice and recall with increasing fluency inverse facts
- partition numbers into 100s, 10s and 1s or multiple groupings
- understand how the principles of commutative, associative and distributive laws apply or do not apply to multiplication and division
- understand the effects of scaling by whole numbers and decimal numbers or fractions
- understand correspondence where n objects are related to m objects
- investigate and learn rules for divisibility

### Resources

All classrooms have a mathematics display board as well as a mental mathematics strategies display where the children's mathematical reasoning and explanation skills are celebrated. In addition to these interactive displays, each classroom has a wealth of mathematical resources often referred to as manipulatives. Children are taught to access these independently to support their learning.

Computing is used in various ways to support teaching and motivate children's learning. This involves the use of interactive teaching programmes; computers including iPads; and calculators where these are appropriate. Computing is only used in mathematics lessons when it is the most efficient and effective way of meeting the lesson objectives.

### Assessment

Herts for Learning mathematics assessment guidelines are used with a cross section of each class to monitor attainment and progress.