

This document sets out our intent, implementation and impact of Mathematics Leadership, teaching and Learning in Offwell C of E Primary School. 'Subject leaders provide professional leadership and management for a subject to secure high quality teaching, effective use of resources and improved standard of learning and achievement for all pupils'. (DfE Definition)

### **Our Intent for MATHEMATICS**

At Offwell, our vision: **Be Well**; **Learn Well**; **Live Well**, charges us to ensure that we secure for each child a sense of physical and mental wellbeing, as the foundations for effective, life-long learning and to enable each child to both benefit from, and contribute to, a better world.

**Be Well** Maths, in its many forms, contributes to emotional wellbeing by developing resilience, self-belief, curiosity, perseverance, social interaction, positive emotional reactions and life skills.

**Learn Well**: Maths follows a cyclical approach where topics and concepts are built upon and revisited throughout a child's learning journey. Lessons are built around problem solving questions which broaden children's mathematical thinking. Mistakes in maths are celebrated as that's where most learning occurs. Productive struggle is important in a child's learning of the maths as key ideas are more likely to become embedded if time and effort has been taken to acquire them. Children sometimes work collaboratively in maths, have guided support and time to practise newly acquired skills.

**Live Well**: Maths equips children for life. Maths is everywhere and children are taught to think critically and solve problems in real life. It also enables them to learn resilience: that mistakes can lead to later success.

We uphold and nurture the following underlying principles for the teaching and learning of mathematics in our school, aiming 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 and procedural 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, e.g. "Convince me that..." or "I know that...so..."
- 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. The Bar Model device is used throughout the school to support problem solving.
- Are taught through the **Concrete → Pictorial → Abstract** sequence, known as CPA (Concrete-Pictorial-Abstract model) to ensure they gain a thorough understanding of the mathematical concepts/skills they are learning.

We aim to develop:

- a positive attitude towards mathematics and an awareness of the fascination of mathematics
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately.
- initiative and an ability to work both independently and in cooperation with others
- an ability to communicate mathematics and mathematically
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and experiment

## **Implementation of curriculum Maths lessons:**

• **Who teaches Maths?** Maths is taught by the class teacher.

### • **Which resources are used to ensure progression of knowledge, skills and attitudes?**

EYFS: EYFS Curriculum – Specifically the ‘Mathematics’ specific area and the Characteristics of Effective Learning. [Mixed Age Progression Framework](#), [Planning Framework](#)

Key Stage 1: [Mixed Age Progression Framework](#), [Planning framework](#) and school skills progression framework (an in-school document)

Key Stage 2: [Mixed Age Progression Framework](#), [Planning framework](#) and [school skills progression framework](#) (an in-school document)

### • **How is maths timetabled?**

In every class, maths is taught in one of the morning lessons (either before or after break). In EYFS it is part of continuous provision and falls under the Mathematics area of learning and development. Interventions (e.g. pre-teaching) for maths are delivered at different times depending upon staffing but usually in mornings. Through careful assessment, planning and preparation, we aim to ensure that children are given opportunities for:

- practical activities and mathematical games
- problem solving
- individual, small group and whole class discussions
- open and closed tasks
- a range of methods of calculating e.g. mental, paper and pencil and calculator
- working with ICT
- outdoor learning

Early Years Foundation Stage (EYFS): Teachers and practitioners support children in developing their understanding of mathematics in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. This area of development includes seeking patterns, making connections, recognising relationships, working with numbers, shapes and measures, and counting, sorting and matching. Children use their knowledge and skills in these areas to solve problems, generate new questions and make connections across other areas of learning and development.

### • **How are children with additional needs supported in maths?**

A teaching assistant is always available in every class for maths lessons. They are used in different ways depending upon the context of the lessons, the needs of the children and other factors. For example, after a shared or differentiated input by the Teacher, a Teaching Assistant may support an individual, or a small group, to deliver a guided session, or the teacher may teach a small group, or one year group, while the Teaching Assistant supervises the other groups. This is regularly reviewed within each teaching team to ensure there is a balance of teaching time.

Work is always differentiated within and across year groups, to provide a range of resources and work, taking into account those who need additional support as well as those who need additional challenge. Pre-teaching is used for some children who need to gain a little knowledge of the mathematical concept before the actual formal lesson. Intervention programs are used (e.g. From Counting to Calculating) and approaches (e.g. precision teaching) to address needs. Specialist equipment is provided for those children who need specific support (e.g. specialist rulers, scissors, larger print work). My Plan targets are incorporated into Maths teaching and learning (e.g. use of visual prompts, learning of key number skills).

### • **How inclusive is maths provision in the school?**

The needs of all children are met within the teaching of maths. The CPA (Concrete-Pictorial-Abstract) approach to maths means that children can tackle the learning at their level – either with concrete materials (counters, bead string, etc), with pictorial representation (diagrams and symbols) or with the abstract (number and calculation only). This means that children can be included in the same learning. In maths ALL children can achieve, through the following:

- ensuring that there is high quality, differentiated teaching and assessment of individual need
- using a variety of teaching and learning styles
- presenting information in a variety of forms – diagrams, models, verbal explanations and written explanations – to ensure accessibility
- using a mix of whole class, small group, paired and individual work to allow the support and development of individuals' needs
- entitling all pupils to equal access to a full learning entitlement, whatever their starting point
- Setting suitable learning challenges

We are aware of, and seek to challenge, stereotyping according to gender, culture or ethnicity, so choose and use resources and images with different abilities, genders and ethnic groups represented.

### • **How are other subjects, technologies, visits, or visitors used to enhance maths learning?**

Maths is often taught through other topic work (where possible). Through careful planning, teachers find opportunities to make links (e.g. comparing heights of mountains by subtracting, making pictograms of animals in a habitat, etc) Maths, as a skill for life, is found in nearly all areas of learning. For example, in PE, children may record and compare lengths of jumps; in DT, they may need to measure and cut materials; in art, they may need to learn to duplicate a shape or design to make it tessellate; in music a solid understanding of fractions is required to read notation. ICT resources are used to enhance learning in maths, through interactive activities, games to support learning (e.g. times tables rockstars) and teacher use of on-screen resources and videos. As maths is found in all areas of life, visits can incorporate this – such as finding Fibonacci patterns in a fern frond, or measuring the flow of a river on a trip, etc.

### **Impact of curriculum maths lessons:**

#### • **How is maths progression monitored?**

Teaching and learning of maths is monitored in a similar way to other subjects: lesson observations, work scrutiny and pupil conferencing – all on a termly basis – with the addition of tests to assess progress and gaps to address. Children complete termly assessment tests that are used to track progress and this is monitored by the subject leader who can raise questions, challenge, and offer support according to the information derived from the data.

#### • **How is maths progression assessed?**

Assessment tasks are built into maths teaching and learning (at the start and end of a unit) and this is used to influence planning and further teaching. The termly tests are a good tool (though not the sole form of assessment) as, through analysis, teachers are able to pinpoint particular areas that need further work. This may be for a whole class, group or individuals. The subject lead can also use this to look at trends across the school that may need celebrating or addressing.