



Flowery Principle 3

The Teaching of Mathematics



The aim of our maths teaching is to create learners that are:

Efficient: Children choosing a suitable and efficient method (both mental and written) to be able to tackle a calculation. Key knowledge of timetables and number bonds will underpin this.

Accurate: Children will be accurate with their calculations and will use number facts, estimation and inverse operations to ensure they are plausible and correct.

Flexible: Children will have a knowledge of more than one approach to solving a particular kind of problem. Students will be flexible in order to select an appropriate strategy for the problem at hand. Learners will also be able to use one method to solve a problem and another method to double-check the results.

Our approach to teaching maths:

Our approach is underpinned by the mastery model. In order to achieve this, we use the White Rose Maths schemes as the basis of our curriculum, supplemented by further materials from other high-quality sources such as NCETM, I See Maths and Open Middle. Children are taught in a mixed-ability setting, which exposes all children to high expectations and doesn't put a ceiling on their learning. We also teach separate daily arithmetic sessions which are designed to give children the opportunity to retrieve learning and secure it into the long-term memory.

Mastery approach (also see 'Maths Journey' flowchart):

At Flowery Field, we use a concrete, pictorial and abstract approach as part of the learners' conceptual journey:

Make it/Concrete – children begin their learning with manipulation of concrete materials. This is then used as an aid to learning as they progress through each area of learning.

Draw it/Pictorial – children use pictorial representations to show their understanding and to explain their reasoning. Bar modelling is a key component of this, building on strong foundations and understanding of part-part-whole.

Calculate it/Abstract – children progress onto abstract concepts once they have developed understanding using concrete and pictorial methods.

In Early Years there is an emphasis on concrete to ensure pupils experience mathematical skills used in 'real life' situations. Practitioners challenge pupils with pictorial and abstract to extend understanding as and when appropriate to their needs.

In every Maths lesson, there is Fluency and Challenge:

Fluency (including daily counting) = "The point of being fluent is to free up the working memory when tackling a more interesting and engaging piece of mathematics." At Flowery Field, we use varied fluency to give the children the opportunity to develop a secure understanding of number. We believe that good number knowledge and quick recall of key facts is essential to children's success.

Challenge = the application of the practised skill. Children are taught reasoning and problem solving strategies, and are then given the opportunity to apply their learning through exposure to progressive reasoning and problem solving activities. Doing less but in more detail is key to securing depth of understanding. Mistakes are used as learning opportunities. There is an open-ended element of challenge to deepen learning and to develop systematic thinking.

Learning environments:

- All working walls reflect our CPA (Concrete, Pictorial, Abstract) approach.
- Key mathematical vocabulary is displayed, including reasoning (APE – Answer it, Prove it, Explain it) sentence stems
- Working Walls can have a small element of permanence if the resources are referred to, useful and used regularly.