



## Mathematics Policy

Reviewed January 2019

At The Baird we have high expectations for all of our pupils and believe that all pupils can achieve highly and become confident and skilled mathematicians. We strive for all pupils to be curious about mathematics and to understand the importance of mathematics in their everyday lives.

Since the introduction of the new Mathematics Curriculum in 2014, we have adopted a Mastery Approach to Maths.

### Aims

In line with the aims of the National Curriculum for mathematics, at The Baird, we aim to ensure that our pupils gain:

- Deep and sustainable learning in mathematics which they are able to apply to a range of contexts
- An ability to build on previous knowledge
- An ability to reason about a concept and make connections
- Sound procedural and conceptual understanding
- Fluency with number
- An ability to solve complex problems by breaking them down into smaller steps and showing resilience

### Teaching and Learning Style

At The Baird you will see the following features to mathematics learning:

- The large majority of pupils progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention. The questioning and scaffolding individual pupils receive in class as they work through problems will differ and pupils who grasp concepts rapidly are challenged through more demanding problems which deepen their knowledge further.
- Practise and consolidation play a central role to mathematics learning. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts in tandem.
- Teachers use precise questioning in class to challenge pupil's conceptual and procedural knowledge as well as their problem solving and reasoning skills. This ensures early identification of pupils who may not make the expected progress without additional intervention.
- Teachers use the CPA approach (concrete, pictorial, abstract) approach to ensure that concepts are modelled to pupils using multiple representations. This ensures that procedural and conceptual understanding are developed simultaneously.
- Pupils are taught in mixed ability groups as we believe that all pupils can attain highly in mathematics and every pupil will have different strengths and development areas. Therefore groupings within classes are flexible and pupils will work in different groups dependent on their need.

## Curriculum – EYFS

Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupils' interests and schemas or current themes and will focus on the expectations from Development Matters / Early Years Outcomes.

As the pupils progress through, more focus is placed on representing their mathematical knowledge through more formal experiences. Pupils will be encouraged to record their mathematical thinking when ready and this will increase throughout the year.

## Curriculum – Year 1 to 6

Pupils spend far longer on key mathematical concepts in number. From Year 1 to Year 6, we follow a structured curriculum map however this is flexible to the needs of the pupils and therefore if a concept has not been grasped thoroughly by most pupils, there is flexibility to adapt the curriculum map and revisit concepts.

Those pupils who grasp concepts more rapidly are given opportunities to deepen their knowledge further and improve their reasoning skills, through rich problems, rather than accelerating on to new curriculum content.

## Lesson Design

Teachers follow a simple lesson structure (see Appendix 1). They will briefly recap previous learning before then building on this previous learning by introducing the next step to the pupils. Teachers use concrete apparatus and visual representations at every opportunity to reinforce the concept and ensure deep and meaningful understanding. Pupils have the opportunity to practise the new skills using carefully crafted and varied questioning and talk will be used regularly to allow the pupils the opportunity to demonstrate their reasoning skills.

Thorough Assessment for Learning will be used to target pupils who have not grasped the concept.

During independent learning the pupils should, as far as possible, practise the skills that they have acquired independently to avoid an over-reliance on adults, however throughout this time, additional staff should work with different pupils to support and assess learning.

## Differentiation

Differentiation will be seen by pupils working on differing complexities of problems within the same objective, called 'Intelligent Practice'. 'Rapid graspers' will have challenging problems to solve to ensure that they continue to make progress. There will be some pupils who are using practical equipment for longer in order to support learning. While our aim is that the gap between mathematical attainment in our classes is closed, we accept that in some Key Stage 2 classes there is already a large gap in the attainment of groups of pupils. There will, therefore be a need to give some pupils in these year groups separate mathematical activities.

## Interventions

Using formative assessment gathered through the practise tasks, teacher questioning and other formative assessment methods, any pupils who have not grasped the concept or who have misconceptions may have a rapid intervention to ensure that they are ready for the next step of learning. Where possible, this will occur on the same day to ensure that gaps are rapidly plugged, ready for the next steps.

## Resources

Within all lessons, teachers utilise practical resources to ensure that concepts are represented to the pupils, in multiple ways, to gain depth of understanding.

## Recording

We place an emphasis on presentation. Pupil's number formation should be focused on and misconceptions addressed in marking. Whilst presentation is always important, we recognise the value of pictorial representations and pupil's workings in maths.

## Assessment and Reporting

Teachers will use targeted questions and problems that require pupils to remember, understand, apply, analyse and evaluate their knowledge and skills. These assessments will then be used to inform the Target Tracker statements to assess the pupils on an ongoing basis and a judgement about whether a pupil is on track to achieve age-related expectations will be made at the end of the term by making a 'step' judgement. This information will all be recorded in Target Tracker and discussed at termly Pupil Progress Meetings.

We also use the Progress in Mathematics Assessment to support our teachers in comparing their pupils to national averages.

## The contribution of mathematics to other curriculum areas

Generally mathematics will be taught discretely to ensure that links are not tenuous, however where there is a clear link to another subject e.g. data handling within science, mathematics skills should be applied to this subject and used to evidence the pupils' depth of understanding.

## Policy Status and Review

<b>Written by:</b>	Maths Subject Leader
<b>Owner:</b>	Maths Subject Leader
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## Appendix 1 – Model Maths Lesson Structure

