



Birdwell Primary Mathematics Policy and Practice

EDUCATE. EMPOWER. INSPIRE.

Introduction

Mathematics enables children to examine the world through a universal language that entails common concepts, operational skills and symbols. It enables children to predict, describe, explain, investigate and communicate findings. Opportunities are identified which give children the confidence to work in individual and collaborative situations. In particular, children are taught to apply their knowledge and skills to a range of practical, real life contexts, to ensure their learning is both purposeful and meaningful. Skills are linked and taught together to maximise teaching and learning time and to give context to learning. We emphasise the importance of times tables, mental maths skills and the ability to solve problems through mathematical concepts.

Equal Opportunities

It is recognised that in order for the maths to be meaningful for all children, the examples offered must reflect, but also extend, children's direct experience. Hence it is important to make use of real- life examples, but also be aware of other number systems. Children are grouped according to ability within classes in order to ensure a high level of challenge and support for all. In EYFS, learning is extended into continuous provision to allow children to practically explore concepts through child-initiated play.

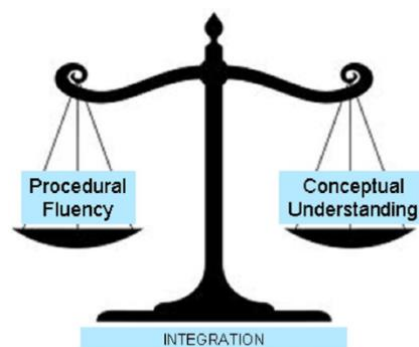
At Birdwell, we recognise the importance of providing a dynamic and effective mathematics education to our students. To ensure that each student receives personalized instruction that caters to their unique learning needs, we have implemented an adaptive teaching approach. Adaptive teaching is a student-centred approach that utilises assessment to tailor instruction to individual abilities, strengths, and areas of improvement. By leveraging adaptive learning platforms and digital tools, our teachers can gather data on student progress, identify areas of struggle, and adjust their teaching strategies accordingly. This approach promotes a growth mindset, fosters active engagement, and empowers students to take ownership of their learning journey. Through adaptive teaching, we aim to cultivate mathematical fluency, critical thinking skills, and problem-solving abilities in our students, enabling them to excel in mathematics and beyond. We are committed to continuously refining and expanding our adaptive teaching practices to ensure that every student reaches their full mathematical potential and develops a lifelong love for learning.

Aims

We believe that to raise standards we need to give children opportunities to:

- acquire skills at a level appropriate to their ability and use these skills in cross-curricular situations
- develop independence in the application of their skills to different contexts
- choose to use mathematical strategies, knowledge and equipment in the course of day-to-day activities
- develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately

- use IT as a mathematical tool, increasing understanding of mathematical concepts
- appreciate maths as a means of communication
- make links between maths and other curriculum subjects
- work individually and co-operatively to investigate problems, including those with open ended solutions
- mentally calculate solutions in oral and mental warm ups and through the teaching of mental strategies (great emphasis is placed on learning times tables)
- use mathematical vocabulary, in contexts, accurately and with understanding
- have enjoyment of the challenge of working out mathematical investigations
- develop confidence and resilience when applying mathematical concepts
- tackle problems presented in a variety of ways

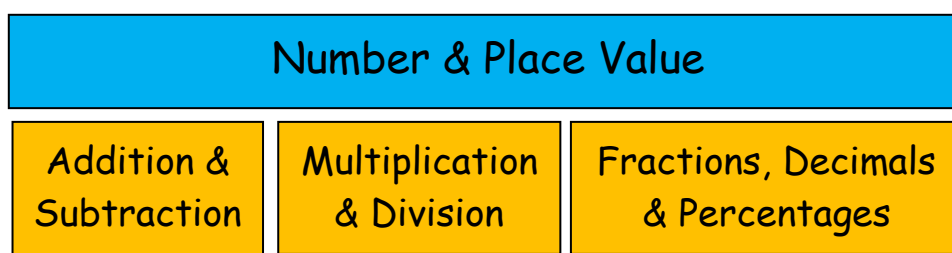


Practice Planning and Delivery

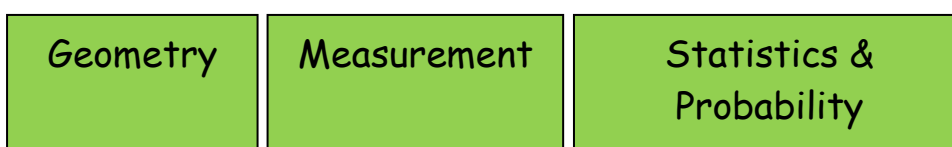
- The objectives of the National Curriculum form the basis of what is taught in mathematics at Birdwell and teachers use 'Year on a Page' to sequence lessons and ensure progression across year groups and within lessons.
- Staff use materials from the range of resources to support planning for maths including: White Rose maths hub, NCETM, NRich, Classroom Secrets, Gareth Metcalfe etc.
- Staff plan using Birdwell Accelerated Learning planning format.
- EYFS encourage children to explore mathematics and mathematical ideas through child initiated independent play and problem solving in a carefully planned and resourced environment.
- All year groups have daily maths meeting sessions. These sessions focus on the quick recall of maths facts, number facts, place value and timestables.
- All children complete daily '5-a-day' which retrieves and consolidates arithmetic skills and understanding across all year groups.
- All year groups use the last week of term to focus on the teaching of times tables during maths meeting time.
- Times tables are taught little and often and weekly soundchecks take place in Y3 and Y4.
- At KS1 and KS2, mathematics is delivered through whole class teaching, targeted group work and careful use of questioning.
- AFL informs our teaching and tailors learning to suit the needs of pupils.

- Mathematics groups are flexible with children moving groups to access support and challenge as necessary.
- Skills are taught through meaningful contexts and areas of maths are linked together to maximise learning time and to give context to teaching.
- 5 is fine is used to avoid repetition of the same style questions within a lesson and to ensure children progress throughout the lesson whilst still having opportunities to embed mechanical mathematics.

Core Concepts



Integrated Concepts



Arithmetic

- Arithmetic skills are essential in order for children to apply mathematical concepts to immediate real life problems. Teachers plan to rehearse and embed these skills through the use of a range of real life situations and quick recall activities. They focus on teaching mental skills and applying these through games and problem solving activities.
- The teaching of addition, subtraction, multiplication and division should be introduced through mental strategies which support the use of appropriate strategies and jottings. Children are encouraged to choose and use methods that are appropriate for the question/ task. Formal written methods are introduced in year 2 and progressed throughout KS2. (see also HCAT Calculation Policy)

Times tables

- The learning of times tables is practiced throughout all year groups as an essential mathematical skill that impacts upon all areas of mathematics. It is expected that all children will know their times tables to 12x12 by the end of Year 4, in line with Government expectations. Year 4 children sit the official Multiplication Timestable Check (MTC) in the Summer Term. Times tables are

taught through the innovative use of games and interactive activities, aimed at creating mental agility and adaptability. The use of Times Table Rock Stars encourages children to practice at home as well as in school. Those children that have progressed beyond these focus on developing their rapid recall speed and using and applying their times table knowledge in real life situations. (eg using their times table knowledge to calculate percentages of amounts, and applying their times table knowledge to algebra, exploring tables beyond 12 x 12). Every term children take part in a intra/inter-school competitions across year groups and schools within the trust.

Problem solving

- This is used as a vehicle for children to apply, rehearse and demonstrate their mathematical skills in real life contexts. The process of solving written problems is taught and the correct use of vocabulary emphasised. Problem solving activities are planned to be open ended to encourage resilience, collaboration and perseverance to explore a range of possibilities. Staff use problem solving activities as an opportunity for children to explain and verbalise their thinking, it is a method of checking the depth of understanding and identifying next steps. At Birdwell, we use real life situations and problems to ensure that the curriculum is engaging and inspiring for all pupils. Raise the roof challenges are used in Y1 – Y6 to ensure all children have access to challenge in lessons.

Assessment and Record-keeping

- There are a variety of systems in operation, according to the age of the children and the purpose of the assessment. AFL is used throughout lessons to adjust teaching to meet need. Planning will be annotated to inform subsequent teaching opportunities.
- In Foundation Stage children's progress is recorded through observation and professional judgement, and is matched to EYFS age band stages. At the end of EYFS, a judgement is made using the EYFSP profile statements.
- At KS1 & 2 children are assessed termly using the HCAT trackers. These track mathematical understanding to provide information on whether children are acquiring and consolidating concepts. From this gap analysis is done to inform future teaching and intervention.
- Objectives for each year group are highlighted on the Mathematics Curriculum document to ensure coverage and inform future teaching.
- Year 6 use previous SATs papers for half termly assessments and data tracked on EXCEL to check progress and next steps.
- At the end of Years 2 and 6 children sit Statutory Assessments and the results are reported to parents at the end of the school year. Year 1, 3, 4 and 5 children are assessed against the HCAT Assessment Trackers. Termly pupil progress meetings analyse data and discuss progress and attainment at individual, class, cohort and groups (PP, SEN, Girl/ boy, EAL etc) level. Based on this analysis interventions can be targeted as required.

- Assessment of times tables takes place termly (Y2 upwards) to ensure children are on track for testing at the end of year 4.
- Year 3 and Year 4 complete weekly Times tables soundchecks and data is inputted on EXCEL (Arbor).

Marking (see separate Marking Policy and Codes).

Role of the Leader

- The quality of learning and teaching of Mathematics is monitored through lesson observation, learning walks, research and development and scrutiny of work. Individual feedback is given as soon as possible after the observation and actions agreed with that member of staff. These actions then become a focus of future observations. General feedback is given in staff meetings and any whole school issues discussed and actioned.
- The leaders support colleagues as necessary in training needs and planning of appropriate activities.
- To ensure continued development of school mathematical practice and the development of the subject an annual action plan is developed and regularly reviewed, evidenced and updated.
- Alongside SLT, the leaders scrutinise data to highlight areas of development and action plan to move the subject forwards and raise standards. Again these findings are shared with the Head and staff and areas actioned.

Conclusion

This policy and procedure document sets out to acknowledge the central place maths holds, both in education and in later life. It ensures that all aspects of mathematics education at Birdwell reflect a shared vision and are consistent with raising standards across the curriculum. It is to be used by all staff.