



# Maths – Year 6 Bruche

## Rationale

In Year 6 at Bruche, we feel that it is imperative that the children are exposed as early as possible to the substantive knowledge that they will need in order to be fully prepared for their SATs and to have a foundation to build on, to develop confidence in having deep understanding in the key areas. This enables them to be successful in a range of problem solving and reasoning scenarios.

Therefore, there is a strong emphasis on the following areas in Term 1, allowing children to be confident in mental strategies and developing fluency and speed of calculation:

- Place value with particular reference to multiplying and dividing by 10,100 and 1000
- BIDMAS and the order of operations
- Fractions, decimals and percentage equivalents
- The 4 operations of fractions
- Simplifying fractions
- Converting fractions from mixed numbers to top heavy fractions and vice versa
- Finding percentage of numbers using decimals
- Increasing and decreasing a number by a percentage using decimals
- Long multiplication
- Long division
- Algebra – solving equations with unknowns on one and two sides
- Angles in shapes, around a point and on a straight line.
- Coordinates
- Negative numbers

Once covered, these areas are regularly revisited throughout the year through retrieval activity, extra tuition and morning challenge, allowing over-learning of these key elements, developing confidence significantly and quickly improving and solidifying core knowledge.

Reasoning and problem solving is developed during IN FOCUS activities and once the children have mastered the fluency elements of the objective through challenge activities, as well as through full reasoning lessons at the end of

teaching a concept. They are also exposed to regular reasoning through morning challenge problem solving and reasoning activities. All the children have ample opportunity to develop reasoning and problem solving with additional support in small tuition groups, helping them to unpick challenging reasoning and problem solving activities in small groups situations, where our expert tutor helps the children to ambitiously dissect problems and reason effectively across a range of topics.

In Term 2 and up to the SATs examinations, the children build upon this knowledge by continuing to develop reasoning and problem solving, focussing on the following topics, whilst continuing ongoing retrieval of the previous learning from the first term:

- Time
- Properties of circles
- Properties of shapes
- Data handling with an emphasis on understanding pie charts
- Area, perimeter and volume
- Special numbers
- Averages
- Sequences including nth term
- Ratio and Proportion
- Algebra and substituting into formulae
- Probability
- Inverse operations and working backwards

From February half-term up to the SATs examinations, any children who still need some support with their fluency and or problem solving and reasoning, will be invited to attend extra weekly support lessons before school.

Post SATs, the children work more and more on bringing together all of their mathematical knowledge to problem solve and reason in a variety of situations needing cross-over knowledge from the concepts taught. The children will be exposed to weekly retrieval of the key substantive mental arithmetic knowledge that they will need as a foundation to beginning their mathematical journey at secondary school, ensuring fluency for all of our children and confidence to be successful, as they continue to progress in their education.