



## Maths: Our DNA

### Head of Department: Ms Garne

At the  $\sqrt{\text{root}}$  of Mathematics at Bolingbroke Academy is a belief that all pupils can be successful mathematicians, if they are given the tools and the confidence to access the material. Maths does not consist of a series of unrelated topics; the relationships that exist within numerical concepts need to be made explicit to enable pupils to apply their mathematical skills across the curriculum. It is vital that teaching always aims to build conceptual understanding, rather than deliver a series of methods. Depth of understanding will help pupils to become independent learners who use their existing knowledge to problem solve, as well as build the resilience to cope with unfamiliar questions.

Maths has a divisive reputation and lots of pupils arrive at secondary school with a very negative view of the subject. We aim to create 5 engaging lessons per week and to foster classrooms with a positive attitude to maths, so that pupils of all abilities can enjoy their mathematical learning. This will be achieved through:

### Mathematics Mastery Programme

- **Concrete-pictorial-abstract:** physical manipulatives used to introduce all new topics, before the introduction of pictures (e.g. bar modelling) and abstract methods
- **Fewer topics in more depth:** the KS3 curriculum has been restructured to enable pupils to spend more time on each topic, building towards a foundation of knowledge
- **Problem Solving:** open-ended and challenging tasks used to enable pupils to explore topics laterally and encourage application of skills

### High Expectations

All pupils expected to make significant % progress between pre- and post-assessments & 3 sub levels of progress per year

- All assessments are analysed by question to enable teachers to accurately intervene where there are gaps
- Termly holistic assessments which are in the style of a GCSE paper & set by ARK; **we will never teach to the test**
- All pupils are taught all topics, with support and stretch to ensure they are pitched appropriately
- A positive and aspirational attitude to mathematical learning is encouraged and reinforced throughout the year

### Number skills

- No calculators in year 7!
- Pupils are taught with and can access manipulatives to support their understanding
- First term dedicated to written and mental methods for the four operations

- Small group interventions and extra practice, such as “5 a day” and “Times table rockstars”, used to tackle gaps in numeracy

## **Language**

- Right is right: high expectations of mathematical language and notation
- Literacy rich displays, with key words and their links made evident to pupils
- Opportunities for paired/group discussion in every maths lesson
- High frequency words highlighted in Word Power booklet

## **Practice**

- Online biweekly homework (using Hegarty Maths) review topics from across the year
- Biweekly written homework review topics from the previous week, with teachers tracking understanding
- Dedicated independent practice time in every lesson

## **Co Planning**

- Maths-focussed discussions at the heart of co-planning sessions: teachers **do** maths at every opportunity
- Co-planning time used as an opportunity to share best practice, develop subject knowledge and evaluate the effectiveness of lessons
- All team members take responsibility for planning and preparing lessons so that the workload is shared

## **Partnership teaching**

- Close partnership with LSAs to review the lesson plans and ensure that tasks are suitably pitched and accessible to all