

## Year 7 Curriculum Intent for Maths

At Dixons Cottingley we develop students to lead successful and happy lives and make a positive contribution to their community. Our curriculum in each year is designed to provide experiences, opportunities, knowledge and skills that enrich and challenge our students. We understand that the curriculum is key to determining the life chances and choices for our students and therefore we will not compromise on providing the very best. We achieve this in maths through the below:

**By the end of Year 7 students at Dixons Cottingley studying maths will be exposed to the following:**

- Sequences
- Algebraic notation, equality and equivalence
- Place value, and ordering integers and decimals
- Equivalence of fractions, decimals and percentages
- Problem solving with addition, subtraction, multiplication and division
- Fraction and percentages of amounts
- Using directed numbers in operations and equations
- Adding and subtracting fractions
- Constructing, measuring and using geometric notation
- Geometric reasoning
- Developing number sense including number facts and estimation
- Sets and probability
- Prime numbers and proof

**By the end of Year 7 students at Dixons Cottingley studying maths will be taught the following skills:**

- Using mental arithmetic strategies to make calculations
- Using estimation strategies to check the validity of answers
- Using a calculator to conduct calculations precisely and efficiently, and be able to convert between different display options
- Using rulers, protractors and compasses to measure and construct diagrams
- Using tables and charts to organise and interpret information
- Using diagrams, such as bar models and Venn diagrams, to develop strategies for problem solving

**In order to truly appreciate the subject and create deep schema, maths has been sequenced with the following rationale:**

- Although quite unusual, Year 7 starts with an algebraic topic. Pupils can often decide that having weak numeracy skills means they are not good at maths, so by starting with algebra and encouraging the use of calculators we can help to develop student confidence at the beginning of their secondary mathematical schooling. In addition, it means that algebraic notation will become familiar throughout all strands of the maths they do in Year 7 and will be seen as a strategy for representation and problem solving, rather than a distinct unit of work. After this topic, content moves towards number in order to review and extend the topics and skills learnt in Key Stage 2, which are vitally important as a strong foundation for KS4.
- Throughout Year 7 all six key maths strands of: number; algebra; ratio, proportion and rates of change; geometry and measure; probability; and statistics are covered, ensuring that fluency, reasoning, and problem solving are embedded in each strand throughout the entire course. Content is designed with interleaving as a key element meaning skills learnt are woven throughout this and subsequent years so that students constantly reinforce and extend their understanding. In addition it features smaller learning steps to help embed deeper learning, ensuring students have secured the prior knowledge needed to progress onto a pathway to a Grade 5 (Foundation) or Grade 9 (Higher) at Key Stage 4.

**The maths curriculum at Cottingley has been influenced by:**

- White Rose Maths' work on creating a new culture of deep understanding, confidence and competence in maths – a culture that produces strong, secure learning and real progress.
- The Key Stage 3 National Curriculum – our scheme of work covers every aspect detailed in the National Curriculum.



**Our maths curriculum ensures that social disadvantage is addressed through:**

Research shows that teaching maths for Mastery has a positive impact on all pupils, particularly ensuring that disadvantaged students have a secure understanding of mathematical concepts to the same level as their peers. For this reason, our curriculum is based on Maths Mastery and is supported using the following strategies:

- 1 – to – 1 catch up support for selected pupils with SEN needs
- Varied representation of concepts, including pictorial representation, to support SEN and EAL students
- An optional weekly after-school club to support students, particularly disadvantaged, with their homework
- A focus on disadvantaged students when planning in-class interventions
- Dedicated lesson time throughout Year 7 for weaker students to practice timestables and to develop mathematical vocabulary, particularly to support SEN and EAL students.

Our belief is that homework is used for deliberate practice of what has been taught in lessons. We also use retrieval practice and spaced revision to support all students with committing knowledge to long term memory. In Year 7, homework will be delivered through Hegarty Maths, as this platform provides video tuition to support student understanding and hence ensure **all** students are able to perform highly.

**Opportunities to build an understanding of social, moral and ethical issues are developed alongside links to the wider world, including careers, through:**

- The use of examples which pupils may come across in real-life
- Discussion of how maths is applied to real-world problems and in particular jobs
- Dedicated 20 minute lessons (one per Cycle) on STEM careers, exploring their importance and the different types of careers available
- Dedicated 20 minute lessons (a minimum of one per year) exploring issues linked to the Global Dimension such as social justice, climate change, and equality and diversity, with mathematical themes.

**Further Information can be found in:**

- Long term plans
- <https://whiterosemaths.com/wp-content/uploads/2019/12/National-Curriculum-Progression-Secondary.pdf>