

## **Mathematics**

Throughout KS3 pupils are taught for three hours per week. Students are taught in different ability sets, which allow them to work at their own level.

### **Year 7**

Students build on their existing knowledge of fractions, percentages, decimals and negative numbers. They also begin to use algebraic techniques to generate and solve simple equations; students study linear graphs as part of this topic. Students progress from a simple understanding of Geometry to using reasoning in their workings. They are introduced to probability and the probability scale. Students begin to use Scientific Calculators to solve problems.

### **Year 8**

Students continue to build on their existing knowledge of ratio and proportion, Geometry and statistics. Students are introduced to new concepts such as Pythagoras, the use of Pi, Standard Form and Simultaneous Equations. They begin to work with increasing confidence to solve unfamiliar problems. Students expand on their use of Scientific Calculators.

### **Year 9**

Students extend their understanding across topics, linking prior learning with new concepts. New topics this year include quadratics, trigonometry, probability tree diagrams, recurring decimals and rules of indices. Students build confidence in setting up and solving multistep problems in all areas of Mathematics.

<b>Mathematics - Oakgrove KS3 Tiers</b>	
5	Use the four operations with numbers written in standard form
	Confidently applies algebraic skills to a range of problems
	Apply Pythagoras and Trigonometry in 2D and 3D contexts
	Calculate probabilities for compound events from independent or mutually exclusive events
	Select, apply and combine skills to solve unfamiliar and non-routine problems
4	Use the four operations with all types of numbers to solve one and two step problems
	Expand and factorise algebraic expressions
	Calculate the surface area and volume of prisms and cylinders
	Use probability diagrams
	Select, apply and combine skills to solve problems
3	Use the four operations with positive and negative numbers to solve one step problems
	Form and solve multi-step equations
	Use angle facts to solve geometric problems
	Construct and interpret a range of frequency diagrams
	Apply and combine skills to solve a range of familiar problems
2	Use the four operations with positive numbers (including fractions and decimals) to solve one step problems
	Solve linear equations and substitute into formulae
	Find the area and perimeter of simple 2D shapes
	Calculate averages and measures of spread from listed data
	Apply skills to solve familiar problems
1	Use the four operations with positive integers to solve one step problems
	Describe and extend a sequence or pattern
	Produce a bar chart or pictogram to summarise information
	Explore the use of probability to describe the likelihood of an event occurring
	Apply a skill to a context encountered before