

WHAT ARE THE BIG AIMS OF YEAR 9?

To build: confidence, fluency, problem solving skills, reasoning and resilience in a mathematical context.

WHAT WILL EXCELLENCE LOOK LIKE IN YEAR 9?

Pupils can assess their own progress and realise where further improvements can be made. Pupils can use higher order skills such as which route to take into a problem. They should amalgamate different areas of Mathematics to higher mathematical concepts. Pupils are able to check the reasonableness of their answer and effectively communicate with justification.

WHAT KNOWLEDGE DO THE PUPILS NEED TO ACQUIRE?

- Number: Negative & fractional powers. Direct/ indirect proportion. Quadratic sequences. Standard form.
- Algebra: Solve simple fractional equations. Represent inequalities graphically. Linear, non-linear & real-life graphs.
- Geometry: Using reasoning with angles & parallel lines. Angles in 2D shapes. Bearings. Problems involving Pythagoras & Trigonometry.
- Statistics: Justify & calculate which average to use for data. Interpret & draw scatter diagrams. Unequal width histograms.

WHAT SKILLS DO THE PUPILS NEED TO DEVELOP?

- Apply the rules of indices to find a solution.
- Be able to represent numbers in multiple ways eg. Links between reciprocals and negative fractional powers.
- Recognising the quadratic sequence & find the n^{th} term.
- Recognise the difference between linear & non-linear graphs.
- Link inequalities to regions.
- Able to approximate the solution to any problem.
- Link the ratio of the sides to the trigonometric function.

WHAT MISCONCEPTIONS MAY THEY HAVE FROM PREVIOUS LEARNING?

- Number: Using the four operations with negative numbers. Recognising the order of operations.
- Algebra: Assumption is already made that $a=1$, $b=2$...
- Statistics: Confusion in how to represent discrete/qualitative and continuous data on either bar charts or histograms. Cannot reason which average is best to use to interpret data.
- Geometry: Unable to gauge the size of an angle. Pupils unable to explain what is actually measured, when discussing an angle. Unable to use a protractor correctly.

WHAT ASSESSMENTS WILL BE USED ACROSS THE YEAR TO DEMONSTRATE HOW THE PUPILS HAVE ACQUIRED THE KNOWLEDGE AND DEVELOPED THE SKILLS?

Termly cumulative assessments – to check progress over time, and compare across the year group.
Frequent mini assessments in class to check short term development of understanding of concepts taught.

