Title: **Inequalities and Numerical Methods**

Key Knowledge/Prior Learning KS3 and Retrieval and Suggested Starters
• Solve linear and quadratic equations • Rearrange formulae

KS4 Curriculum – what students will be practicing
• Solve linear inequalities in one **or two** variables **and quadratic inequalities in one variable** • Represent the solution set on a number line, **using set notation and on a graph** • **Find approximate solutions to equations numerically using iteration** •

Specific Ambitious Knowledge

Key Vocabulary/Literacy Opportunities
• Equations • Inequality • Solution Set • Iterate • Solution • Converge • Roots

Key Formulae/Knowledge
The definition of iterate is to repeat a process. When solving an equation, iteration means substituting in a number, obtaining the result, then using this result to substitute in again to repeat the process.

Maths in Context (Historical, Real Life and Student Thinking Points)
Will all iterative formulae lead to greater accuracy of roots? Students can look at some values that diverge rather than converge. This can lead to conversations about how they converge leading to A-level work on numerical methods.

Projects/Enrichment/Investigations
• Students could investigate simple linear programming problems that use graphical representations of inequalities. • **Which Is Cheaper?**

- **Which Is Bigger?**