Title: **Collecting and Representing Data**

Key Knowledge/Prior Learning KS2/3 and Retrieval and Suggested Starters
• interpret and construct tables, charts and diagrams including, for categorical data: • frequency tables • bar charts • pie charts • pictograms • vertical line charts for ungrouped discrete numerical data • tables and line graphs for time series data • know their appropriate use •

KS4 National Curriculum – what students will be practicing
• interpret, analyse and compare distributions of data sets from univariate empirical distributions through appropriate graphical representation involving discrete, continuous and grouped data, **including boxplots** • **Construct and interpret diagrams for grouped discrete data and continuous data, i.e. histograms with equal and unequal class intervals and cumulative frequency graphs, and know their appropriate use** • Use and interpret scatter graphs of bivariate data • Recognise correlation and know that it does not indicate causation • Draw estimated lines of best fit • Make predictions • Interpolate and extrapolate apparent trends whilst knowing the dangers of doing so •

Specific Ambitious Knowledge

Key Vocabulary/Literacy Opportunities
• Interpret • Analyse • Compare • Distributions • Grouped data • Bivariate data • Interpolate

- extrapolate

Key Formulae/Knowledge
Students should understand that the box represents the middle 50% of the data and the whiskers represent the bottom and top 25% of the data.

Maths in Context (Historical, Real Life and Student Thinking Points)
• Give examples of when poorly constructed data representations have been used, sometimes with the intention of influencing people. Some examples here https://www.tes.com/teaching-resource/bad-graph-11445473

Projects/Enrichment/Investigations
• **Olympic Triathlon** • **Perception Versus Reality** • **Box Plot Match** • **Which List Is Which?**