# AQA GCSE Maths – Statistics

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**Subject:** Maths

**Grade:** KS4

Detailed revision guide for the Statistics topic in AQA GCSE Maths covering definitions, examples, methods, advantages, disadvantages, and practice questions.

# Statistics – AQA GCSE Maths (8300)

## Key Concepts

- Data types: qualitative and quantitative, discrete and continuous
- Data presentation: tables, charts, bar charts, pie charts, histograms, scatter graphs
- Measures of central tendency: mean, median, mode
- Measures of spread: range, interquartile range, variance, standard deviation
- Probability and relative frequency
- Correlation and causation
- Sampling methods: random, stratified, systematic, opportunity, quota

## Definitions & Examples

- Qualitative Data: Non-numerical data, e.g., favourite colour.
- Quantitative Data: Numerical data, e.g., test scores.
- Discrete Data: Countable values, e.g., number of students in a class.
- Continuous Data: Can take any value within a range, e.g., height in cm.
- Mean: Sum of data ÷ number of items.
- Median: Middle value when data is ordered.
- Mode: Most frequent value.
- Range: Difference between highest and lowest value.

## Methods

- Organise data into frequency tables
- Draw and interpret charts and graphs
- Calculate mean, median, mode, and range
- Use scatter graphs to identify correlation
- Choose appropriate sampling methods for data collection
- Identify anomalies and trends in data sets

## Advantages & Disadvantages

- Advantages: Supports decision making, summarises large data sets, identifies trends and relationships.
- Disadvantages: Misleading if sample is biased, data can be misrepresented in graphs, does not prove causation.

## Practice Questions

- Calculate the mean, median, mode, and range of: 4, 7, 7, 10, 12
- Draw a bar chart for the number of students in 5 classes: 20, 25, 18, 22, 30
- Draw a scatter graph for paired data and describe the correlation
- Identify the most suitable sampling method for a school survey
- Interpret a histogram showing frequency distribution of exam marks