



Qualifications and  
Curriculum Authority



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government



*Rewarding Learning*

# GCSE subject criteria for statistics

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## Introduction

1. GCSE subject criteria set out the knowledge, understanding, skills and assessment objectives common to all GCSE specifications in statistics. They provide the framework within which an awarding body creates the detail of the specification.
2. Specifications must also meet the regulators' general requirements, including the common and GCSE criteria as defined in *The statutory regulation of external qualifications* (QCA/04/1293).
3. Subject criteria are intended to:
  - help ensure consistent and comparable standards in the same subject across the awarding bodies
  - ensure that the rigour of GCSE is maintained
  - ensure that specifications build on the knowledge, understanding and skills established by the national curricula for England, Northern Ireland and Wales, and facilitate progression to further study of statistics
  - help higher education institutions, employers and other stakeholders such as learners and parents/guardians know what has been studied and assessed.
4. Any GCSE specification that contains significant elements of statistics must be consistent with the relevant parts of these subject criteria.

## Aims and learning outcomes

5. GCSE specifications in statistics should encourage learners to be inspired, moved and changed by following a broad, coherent, satisfying and worthwhile course of study and gain an insight into related sectors, such as mathematics. They should prepare learners to make informed decisions about further learning opportunities and career choices.
6. GCSE specifications in statistics must enable learners to:
  - actively engage in the process of enquiry to develop as effective and independent learners, and as critical and reflective thinkers with enquiring minds
  - acquire an understanding of the basic concepts of statistical problem-solving in a way that encourages confidence and enjoyment of the subject in everyday and real-life situations and out-of-classroom learning

- develop knowledge, skills and understanding in statistical methods and concepts and in probability, including an awareness of the potential and limitations of data and methods
- develop an understanding of the importance of statistical information to society as a whole as well as its limitations, including recognising misleading representations and uses of statistics.

## **Subject content**

7. The content of GCSE specifications in statistics must reflect the learning outcomes.
8. GCSE specifications in statistics must allow learners to develop the knowledge, skills and understanding specified below.
9. A specification must address the data handling component of the programmes of study for mathematics from the relevant national curriculum orders for England and/or Wales and the statutory requirements for key stage 4 in Northern Ireland.
10. Any specification must require learners to develop an understanding of, and an ability to apply the statistical problem-solving process, which involves:
  - planning
  - collecting data
  - processing, presenting and analysing data
  - discussing and interpreting results
  - communicating in a variety of forms, including the use of ICT.
11. Planning a statistical investigation:
  - determining the nature of the requirements of the situation
  - identifying questions and hypotheses
  - design a study while showing awareness of other approaches.
12. The nature of data:
  - being aware of different types of data

- recognising the contexts in which these arise.

13. Probability:

- measuring chance and likelihood
- being aware of uncertainty and risk
- being aware of the use of probability to model real-life situations.

14. Collecting data:

- understanding the concepts of populations and samples
- understanding the importance of collecting appropriate data and the problem of bias
- knowing different types of sampling
- knowing different data collection methods.

15. Processing, analysing and presenting data:

- understanding that data can be processed and presented in different ways
- recognising that some methods are more appropriate/effective than others
- appreciating that misuse of presentation methods can distort outcomes
- producing summary statistics, tables and diagrams appropriate to the context and to the questions posed.

16. Interpretation and discussion of results:

- applying statistical reasoning to answer the questions posed
- using summary statistics, tables and diagrams to draw inferences or conclusions
- interpreting inferences and conclusions in the context of the questions posed.
- understanding reliability and limitations of inferences or conclusions.
- evaluating the reliability and limitations of the strategy used.

## Assessment objectives

17. All specifications must require candidates to demonstrate their ability to:

Assessment objectives		% weighting
AO1	Analyse a statistical problem and plan an appropriate strategy	10–20
AO2	Describe and use appropriate methods to select and collect data	10–20
AO3	Process, analyse and present data appropriately	40–50
AO4	Use statistical evidence to identify inferences, make deductions and draw conclusions	25–35

## Scheme of assessment

18. GCSE specifications in statistics must allocate a weighting of 75% to external assessment and a weighting of 25% to controlled assessment in the overall scheme of assessment.

19. Question papers in statistics must be targeted at either Foundation or Higher tier.

## Grade descriptions

To be added later