Core Mathematics

AQA

LEVEL 3
MATHEMATICAL STUDIES
(1350)

Specification
For teaching from September 2014 onwards
For exams in May/June 2016 onwards

Core Mathematics

This Level 3 Certificate Mathematical Studies qualification will consolidate students' mathematical understanding, build their confidence and competence in applying mathematical techniques to solve a range of problems and introduce them to new techniques and concepts that will prepare them for further study and future employment within a broad range of academic, professional and technical fields.

Mathematical Studies aims to prepare students for the mathematical demands of higher education and work where there is a distinct mathematical or statistical element, but where the mathematical demands do not stretch to a requirement for A-level mathematics.

A course of study leading to this qualification should enable students to:

- study a mathematics curriculum that is integrated with other areas of their study, work or interest leading to the application of mathematics in these areas
- develop mathematical modelling, evaluating and reasoning skills
- solve problems some of which will not be well defined and may not have a unique solution
- solve substantial and real life problems encountered by adults
- use ICT as an exploratory tool for developing mathematical understanding and when solving problems
- develop skills in the communication, selection, use and interpretation of their mathematics
- enjoy mathematics and develop confidence in using mathematics

Minimum requirements

- Enjoy mathematics!
- Achieve a minimum grade 4 or higher at GCSE
  - Preferable grade 5
- Work ethic to complete independent work
  - It is recommended that for every hour in class you spend 2 hours outside reviewing notes and completing homework tasks. That is why you do not have a full timetable.
- Resilience

What is covered in Core Mathematics?

Subject content

Compulsory content

- 3.1 Analysis of data
- 3.2 Maths for personal finance
- 3.3 Estimation
- 3.4 Critical analysis of given data and models

Optional content

- 3.5 The normal distribution
- 3.6 Probabilities and estimation
- 3.7 Correlation and regression

What is covered in Core Mathematics?

3.1 Analysis of data

Students will be expected to develop and demonstrate confidence and competence in the understanding and application of statistical techniques, interpreting data and drawing conclusions in the solution of problems.

D1 Data

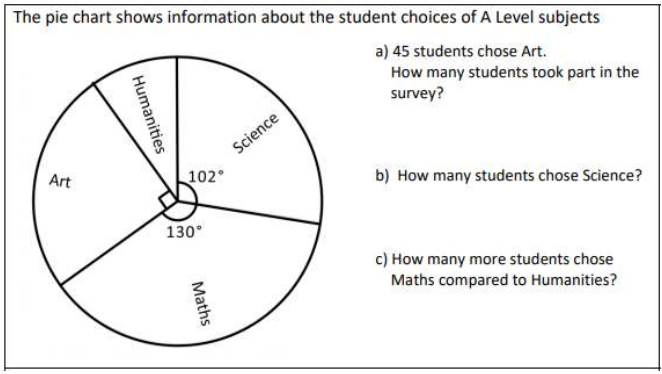
	Content	Additional information
D1.1	appreciating the difference between qualitative and quantitative data	including the difference between discrete and continuous quantitative data
D1.2	appreciating the difference between primary and secondary data	including the use of secondary data that have been processed eg grouped
D1.3	collecting quantitative and qualitative primary and secondary data	

D2 Collecting and sampling data

	Content	Additional information
D2.1	inferring properties of populations or distributions from a sample, whilst knowing the limitations of sampling	
D2.2	appreciating the strengths and limitations of random, cluster, stratified and quota sampling methods and applying this understanding when designing sampling strategies	appreciating that improving accuracy by removing bias and increasing sample size may cost/save both time and money

Typical Lesson

- Retrieval practise of previous content
- New concept
  - Direct instruction with modelling
- Embedding concepts
- Homework
  - Practice questions
  - Revision



Quota sampling uses the idea that you are only interested in certain parts of the population.

The subjects in the sample just have to meet **certain criteria**.

This is often used by market researchers doing interviews in the street.
They might be told to look for:

20 parents with young children
30 businessmen
50 teenagers

As long as people meet these conditions it is up to the interviewer who to ask.

Terminal Assessments
Each exam 50% of final grade

Paper 1

What's assessed:
- 3.1
- 3.2
- 3.3

Assessed:
- written exam: 1 hour 30 minutes
- 60 marks
- scientific calculator or graphics calculator allowed (see section 5.9 for more information on calculators)

Paper 2A: Statistical Techniques

What's assessed:
- 3.4
- 3.5
- 3.6
- 3.7

Students will be expected to draw on the mathematical content of paper 1.

Students will be expected to develop and demonstrate confidence and competence in the understanding and application of mathematical modelling in the solution of problems related to the use of statistical techniques.

Assessed:
- written exam: 1 hour 30 minutes
- 60 marks
- scientific calculator or graphics calculator allowed (see section 5.9 for more information on calculators)

UCAS Outcomes

UCAS Tariff points

AQA Certificate in Mathematical Studies (Core Maths)

Grade	Points
A	20
B	16
C	12
D	10
E	6