

A student's guide to the GCSE in

# MATHEMATICS A (1387)

## What is GCSE mathematics all about?

GCSE Mathematics covers a wide range of basic mathematical knowledge and skills, grouped into four areas:

- Number and algebra
- Shape, space and measure
- Data handling.

The fourth area is using and applying the mathematics contained in these areas to a range of problems.

While studying mathematics you will be expected to:

- use mathematical skills and knowledge to solve problems
- use logic and reason to solve problems
- break down problems into small steps in order to solve them
- use the mathematics that you learn to solve problems that might happen in real life
- learn how to use a calculator to solve problems quickly and effectively.

## How does it follow on from what I have learnt before?

You probably won't notice a lot of difference in your mathematics lessons when you start this course as your teacher will be able to carry on from the work you did at Key Stage 3.

## Why do I have to take GCSE mathematics?

GCSE mathematics covers a lot of basic skills that you will need to use in a variety of ways all through your life and because of this it is a compulsory subject for all students in years 10 and 11.

You will use a lot of what you learn in GCSE mathematics in the other GCSEs that you study, for example in science you may be asked to use formulae and solve equations, in geography you will need to read charts and diagrams and use statistics and in D&T you will need to use measures and make scale drawings.

Most college and 6<sup>th</sup> form courses require GCSE maths as an entry requirement, as do many jobs and careers.

## What about exams?

You will have to take two exam papers at the end of your course.

These two exam papers are worth 80% of the total marks.

The questions on the exam papers will be arranged so that the easiest ones come first and then gradually get harder.

There will be a mixture of short and longer questions.

You answer the questions on the exam paper itself and you will have to answer all the questions.

You will not be allowed to use a calculator for the first exam.

You might be asked to solve a problem about anything you have studied on either paper. Each of the exam papers is between one and a half and two hours long.

## Is there any coursework?

You will have to do at least two pieces of coursework, which is worth 20% of the total marks. One of the pieces of work will be a data handling project and the other an investigation.

For the data handling project you will have to choose a topic to research, collect the right information, choose the best way to present it and draw conclusions about what the information is telling you.

For the other piece of coursework you will be asked to investigate a mathematical problem. You will have to make decisions about how to tackle the problem, look for patterns, and suggest mathematical rules that fit the problem and try to prove why the rules work.

## What about my results?

Towards the end of August you will be given your results. These will be graded from A\* to G.

## What other skills might I develop?

While you are doing this course (and especially when you are doing your coursework) you will be given the chance to develop skills in application of number, IT, communication, problem solving, working with others and in improving your own performance. These six skills are called Key Skills. You may take a qualification in these skills in addition to your GCSEs.

## What could I do next with GCSE mathematics?

GCSE mathematics is an important foundation for many of the courses you may take in employment or further education, and a requirement for many university courses.

If you get a good grade at GCSE you may even decide to take Mathematics A level.

Almost all jobs and careers require you to have mathematics GCSE, but the following careers are some that would enable you to make a lot of use of your mathematics:

- economics
- medicine
- architecture
- engineering
- accountancy
- teaching
- psychology
- environmental studies
- computing
- information and communication technology
- banking
- insurance
- marketing
- business management
- pharmacy
- science