

## Next steps!

If you are interested in studying GCSE Engineering, you should start to find out more about the subject by:

- talking to the Head of Engineering at your school who will be able to describe the course in detail and advise you of what you need to do next when it comes to your options
- looking on the Edexcel website ([www.edexcel.com/gcse2009](http://www.edexcel.com/gcse2009)) where there is a lot of useful information about what you will be studying and how you will be assessed.

### Engineering Question:

What was the top speed for Bentley's 3 litre racing car, produced between 1921-1929?

### Engineering Answer:

(a) 80 mph

#### Edexcel

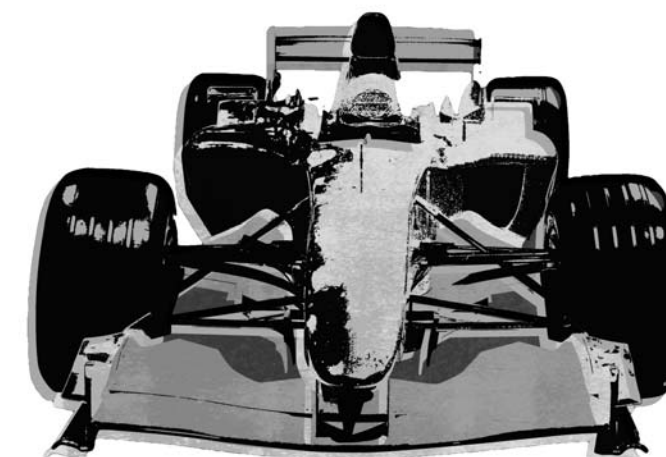
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#### About Edexcel

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# Edexcel GCSE Engineering (Double Award)



## STUDENT GUIDE

### Is this the right subject for me?

GCSE Engineering is the right subject for you if you want to:

- learn in both a classroom and practical environment
- learn in a realistic way and apply your skills in work-related situations
- develop skills that are highly valued by employers and higher education
- carry out a range of activities, including an understanding of engineering, the related sector, and how they affect society and the economy
- gain a good understanding of the main principles of engineering and an insight into how companies operate
- cover a range of different types of engineering, which may include fabrication, electrical/electronic, automotive plus many others
- learn about engineering techniques and processes.

## What Is Engineering?

Engineering is the 'application of ingenuity, scientific knowledge, natural laws and physical resources, to overcome problems'. Engineers are concerned with developing economical and safe solutions to practical problems by applying mathematics and scientific knowledge while considering technical constraints.

## What do I need to know, or be able to do, before taking this course?

You will have developed some related knowledge, skills and understanding during your Design and Technology lessons at Key Stage 3. These will be useful during this course, but you do not need to have studied engineering before starting the GCSE.

## What will I learn?

There are three units which make up the **GCSE in Engineering Double Award** (equal to two GCSEs).

### Unit 1: Engineering Design and Graphical Communication

You will develop a design specification and design proposals for an engineered product and devise and apply a range of tests to draw up a final design solution. You will present your design solution and make modifications based on feedback received.

### Unit 2: Engineered Products

You will develop an understanding of the processes involved in producing an engineered product. You will create a production plan, select and use suitable tools, components and processes and apply a range of quality control techniques when making an engineered product.

### Unit 3: Application of Technology in Engineering and Manufacturing

You will learn about the stages involved in manufacturing an engineered product and the advantages and disadvantages of using modern technology in engineering. You will investigate the use of ICT, modern and smart materials and control technology in engineering, and the impact of modern technology on the design and manufacture of a product in a particular manufacturing or engineering sector. You will also learn about how new technologies can be used to benefit the workforce, the wider community and the global environment.

## How will I be assessed?

Unit 1 & 2 Course work (60%)	Unit 3 Examination (40%)
You will carry out a number of assignments and activities based on Units 1 and 2. After completing your assignments and activities, your teacher will mark your work. During your course you'll build up two separate folders containing your work for Units 1 and 2. These folders count towards your final grade. Unit 1 is worth 30% of the total marks and Unit 2 is worth another 30% of the total marks.	You will take a written exam paper based on Unit 3, set and marked by Edexcel. The mark for your written exam also counts towards your final grade and is worth 40% of the total marks. <ul style="list-style-type: none"><li>• The exam can be taken at the end of Year 10 or Year 11 and one resit is allowed.</li><li>• Questions are written for students with differing levels of ability to help you cope!</li></ul>

## What can I do after I've completed the course?

Students gaining a **GCSE in Engineering Double Award** will have access to a range of career and further education opportunities. You learn and use a variety of skills – that are in great demand – throughout the course. These skills are recognised and highly valued by employers. If you wish to continue studying, you could move on to, for example:

- a Diploma in Engineering or Manufacturing and Product Design at either Level 2 or Level 3
- a BTEC First or National course, such as Manufacturing, Mechanical Engineering, Art and Design or Hospitality and Catering
- an A Level or AS in Engineering or Design and Technology.

You could then continue your studies in higher education, on a BTEC Higher National or on a degree course, either full time or part time whilst working.

### Engineering Question:

What was the top speed for Bentley's 3 litre racing car, produced between 1921-1929?

- (a) 80 mph      (b) 90 mph      (c) 100 mph      (d) 110 mph