

GCSE
Science

Introduction

Welcome to your GCSE Science course. This introduction will serve as a guide to what you can expect from the course, and it will show you how to plan your study of this course effectively. Take your time to read this introduction thoroughly before you start the lessons.

The course is designed to prepare students for the **AQA GCSE Science B specification/syllabus**.

AQA subject code **4462 GCSE Science B**

Please note that this course has five examined components;

- A biology examination paper
- A chemistry examination paper
- A physics examination paper
- An item of practical coursework
- An examination paper based on the practical work

The practical work should be possible to do without access to a laboratory, but if you do have the opportunity to perform supervised laboratory work in the course of your studies this will add to them greatly.



The Course

The course is different from GCSE science courses of the past in that it attempts to look at the way science affects your everyday life and how you can evaluate the scientific material that you come across in newspapers, magazines and on the television. The course in itself is not sufficient to prepare you to study the sciences at A-level, for that you will also need AQA Additional Science at GCSE.

If you have some background in science then you will find some of the lessons will touch upon things that you have met before, but the course is designed to be fully understandable with those who have little or no previous background in science.

Arrangement of Lessons

The lessons are planned so that the three strands of biology, chemistry and physics are covered fully throughout the course. It is recommended that you study them in this order. The lessons relating to science in general and the coursework component can be studied at any point after starting the course.

Lesson contents and textbook references

Module	Lesson Title	Lesson Number	Text book reference
Science 1	What is science all about?	1	
	Can we Trust Scientists?	2 TMA A	
Biology 1	Responding to change	3	
	Keeping Healthy	4	
	Use and Abuse of Drugs	5 TMA B	
Chemistry 1	What the World is Made Of	6	
	Using Metals	7	
	Getting Metals from the Earth	8	
Physics 1	Moving Heat	9 TMA C	
	Efficient Energy	10	

Biology 2	Cause and Prevention of Disease	11	
	Survival in the Environment	12 TMA D	
Chemistry 2	Oils and Fuels	13	
	Making things from Oil	14	
	Making things from Plants	15 TMA E	
Physics 2	Electrical Devices	16	
	Generating Electricity	17 TMA F	
Science 2	Investigating and Observing	18	
	Gathering and Using Data	19	
	Coursework	20 TMA G	
Biology 3	Genes and Genetic Engineering	21	
	Evolution and Darwin	22 TMA H	
Physics 3	Using waves	23	
	The uses and dangers of Radioactivity	24 TMA I	
Science Issues	Changes in the Earth and Atmosphere	25	
	Humans and the Environment	26 TMA J	

Textbook

The textbook that is referred to throughout this course is *AQA GCSE Science* by Jim Briethaupt, Ann Fullick and Patrick Fullick. It is published by Nelson Thornes (ISBN 0 7487 9634 7)

You will need a copy of *AQA GCSE Science* throughout the course; you can buy a copy through the Oxford Open Learning website. It is referred to in almost every lesson and provides excellent coverage of the material. By using the textbook and the course you will have very full coverage of all the material

You should not need other books throughout the course but you may like to look in other science books from time to time. If you feel that you would like to use a revision guide before the examination you should ask your tutor which one they recommend.

Internet Resources

In each lesson of the course, internet sites are given which have been carefully selected to illustrate points in the course and to provide additional activities. These are an important tool in your understanding of your science course and you should make every effort to view them and use the activities that they contain. If you do not have an internet connection at home, consider building in regular trips to a library or internet café as part of your study schedule.

The structure within each lesson: how to study

Front page

The front page of each lesson shows:


- The title.
- **Aim(s)** for the lesson. These set out the position that you should reach after working through the lesson; keep these in mind while reading the lesson material.
- **Context.** This gives a very brief summary and shows how the lesson fits in with the rest of the course.
- **Reading.** The individual references for each lesson.

Lesson notes

There then follow the notes; these are an outline of the subject material to be studied in the lesson. Read the notes carefully several times until you feel that you have understood the broad outline of the theory involved, and then tackle the reading references. The textbook may deal with the subjects in greater detail, and, as with the notes, you will probably need to read the passages several times.

Activities

Most activities in the course are placed in the notes at the relevant point. Activities are indicated as follows:

Activity 7	Investigate how a nucleus is held together, particularly how the binding energy of the nucleus relates to Einstein's equation, $E = mc^2$.
	

The pencil symbol indicates that you should make your own notes in the space provided.

Self-Assessment Tests

When you feel that you have mastered the topics and completed the activities, tackle the practice tests, which are at the end of every lesson that does not contain a tutor-marked assessment.

Tutor-marked Assignments

After every three or four lessons there is a tutor-marked assignment. These are in 'A' level examination style and should be carried out under timed conditions to give you examination practice. These tests will thoroughly check your understanding of the previous few topics. You should send your answers to these tests to your tutor, who will return your marked script, together with a set of suggested answers.

Revision

Do **not** leave all your revision until the end of the course. You will need to revise thoroughly for your examination, but frequent revision throughout the course is **essential**. Plan your revision sensibly, and re-read as you feel necessary, if your knowledge is beginning to fade.

Coursework

You will need to discuss the coursework with your tutor once you have made a start on the course. AQA will specify the topic that you will be working on. Do not start the coursework before discussing it with your tutor.

You should not need too much in the way of specialist equipment for your coursework – mainly items that you can find in the kitchen.

Checking the Syllabus

As you know, this course has been written to cover the contents of the **AQA syllabus 4462** which is available to download (you will need an Adobe Acrobat reader on your computer) at:

<http://www.aqa.org.uk>

You should read the syllabus throughout the course, so either keep a copy on your computer or print it out. If you do not have access to the internet, the syllabus is available from:

AQA Logistics Centre (Manchester)
Unit 2, Wheel Forge Way,
Ashburton Park, Trafford Park,
Manchester
M17 1EH

Past papers

AQA now makes all (but the very last set) of past papers available online for free download at:

<http://www.aqa.org.uk>

Discuss with your tutor how to approach these.

Your tutor

You have a lot of resources to help you in your studies; your course file, textbook, internet resources and your tutor. You should make good use of your tutor to help you with any difficulties that you may have during the course.

And finally... very good luck with your studies.

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