



Buile Hill  
Academy

*Enriching Lives, Inspiring Ambitions*

# **Curriculum Guide for Science**

## Our Vision and Approach in Science

The Science Department at Buile Hill Academy believes in providing the best opportunities for our young people to develop their Scientific understanding of the world around them. Through a knowledge rich curriculum, pupils will be given the opportunity to talk, write and work scientifically. We are committed to providing an inclusive, stimulating environment which inspires a love for knowledge and learning. Our young people will develop the skills to enable them to have informed debates based on a grounding of scientific fact and be able to distinguish evidence from misleading conjecture. Exposing pupils to a plethora of Scientific knowledge, cultivating the ability to critically analyse information and justify their opinions will prepare pupils to be successful well-informed citizens who can pursue a career of their choice.

## What our students will learn

Our curriculum is sequenced to cover a series of topics across the academic year to give students a full experience of the big ideas in Biology, Chemistry and Physics. The breakdown of topics covered across the year groups is detailed in the grid below. Please note this is subject to change as we adapt our curriculum to meet the needs of our students.

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Stage 3	Year 7	Cells Properties of Materials	Forces Substances and mixtures Health and disease	Health and disease Sound and light Inheritance	Inheritance Elements and compounds The Solar system and beyond	Variation Polymers	Heating and Cooling From cells to organ systems
	Year 8	Forces Health and digestion	Health and digestion The Periodic Table	Space Breathing and Respiration Chemical Reactions	Chemical Reactions Heating and Cooling	Photosynthesis and Ecosystems	Properties of Materials
	Year 9	Breathing and Respiration Acids and Alkalis	Heating and Cooling Photosynthesis and Ecosystems	Earth and Atmosphere Electricity and Magnetism	Genetics and Evolution	Properties of Materials	Sound and light
Key Stage 4	Year 10	Cell structure Inheritance and the genome Elements, compounds and mixtures Energy of moving particles	Exchange and Transport How atoms bond Energy of moving particles Measuring and Calculating Motion	Coordination and control The significance of carbon compounds Electric charge	Human lifestyles and health Trends in reactions Energy of moving objects	Growth and development Properties of Structures Waves	Health and infectious disease Environmental Impact of Carbon Circuit components
	Year 11	Electricity Infection and Response Quantitative Chemistry	Particle model of matter Bioenergetics Chemical Changes	Atomic structure Homeostasis Energy Changes Forces	Inheritance Rate of Reaction	Waves Ecology Organic Chemistry	Magnetism and Electromagnetism Chemical Analysis Chemistry of the atmosphere

## How you can support your child's learning in Science:

Students will have a knowledge organiser for each of their schemes of learning. Students can use these to test themselves on the core content throughout the term.

- Question your child on what they have learnt: How does it relate to the real world?
- Encourage them to watch the news regularly to keep up to date with current scientific developments. Ask them how these developments link to their learning in their Science lessons
- Students at KS3 will be given a retrieval knowledge quiz homework every two weeks
- Students at KS4 will be given a retrieval knowledge quiz homework every week

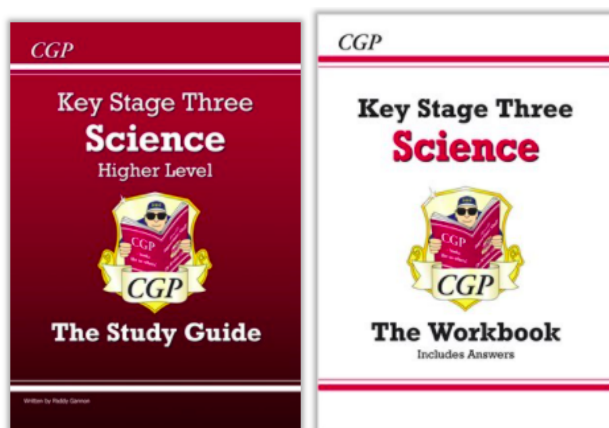
## Websites you can visit:

- BBC Bitesize  
KS3 - <https://www.bbc.co.uk/bitesize/subjects/zng4d2p>  
KS4 Combined Science - <https://www.bbc.co.uk/bitesize/subjects/zp266yc>  
KS4 Triple Science: <https://www.bbc.co.uk/bitesize/subjects/zrkw2hv>
- Youtube – Primrose Kitten Science Videos  
This is the largest free collection of GCSE Science videos on youtube  
<https://www.youtube.com/c/primrosekittenscience>

## Books you can purchase:

### CGP Study Guides:

#### KS3



#### KS3 Study Guide (Higher):

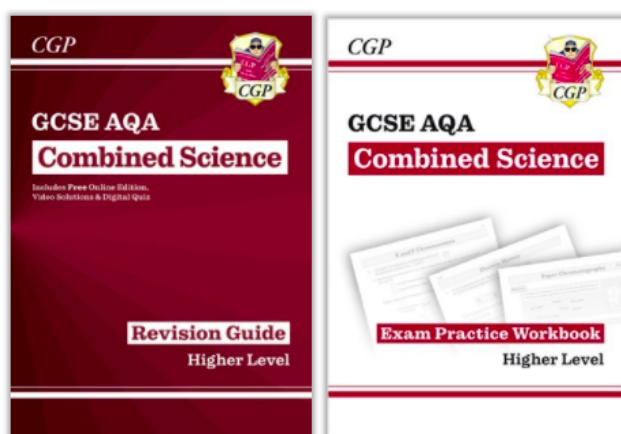
<https://www.cgpbooks.co.uk/secondary-books/ks3/science/shr32-ks3-science-study-guide-higher>

#### KS3 Study Guide (Foundation):

#### KS3 Workbook :

[https://www.cgpbooks.co.uk/secondary-books/ks3/science/shw32b-ks3-science-workbook-higher-\(with-answers\)](https://www.cgpbooks.co.uk/secondary-books/ks3/science/shw32b-ks3-science-workbook-higher-(with-answers))

## KS4 Combined Science



### KS4 Revision guide

**Higher:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/combined-science/sahr46-new-gcse-combined-science-aqa-revision-guid>

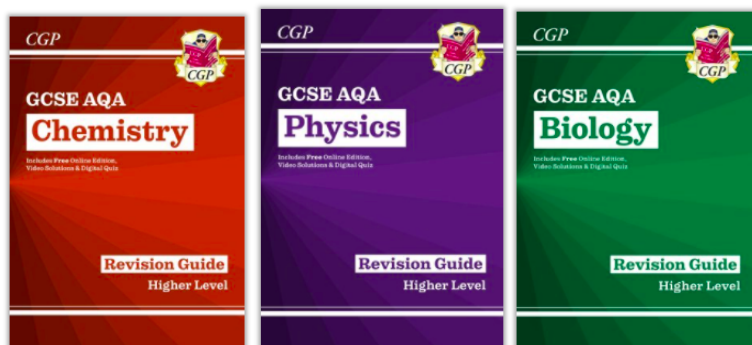
**Foundation :** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/combined-science/safr46-new-gcse-combined-science-aqa-revision-guid>

### KS4 Workbook

**Higher:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/combined-science/sahq42-new-gcse-combined-science-aqa-exam-practice>

**Foundation:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/combined-science/safq42-new-gcse-combined-science-aqa-exam-practice>

## KS4 Triple Science:



### KS4 Physics Revision guide

**Higher:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/physics/par48-new-gcse-physics-aqa-revision-guide-higher-i>

**Foundation:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/physics/pafr42-new-gcse-physics-aqa-revision-guide-foundat?c=31115112>

### KS4 Biology Revision Guide

**Higher:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/biology/bar46-new-gcse-biology-aqa-revision-guide-higher-i?c=16072009>

**Foundation:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/biology/bafr42-new-gcse-biology-aqa-revision-guide-foundat>

### KS4 Chemistry Revision guide

**Higher:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/chemistry/car46-new-gcse-chemistry-aqa-revision-guide-higher?c=38663136>

**Foundation:** <https://www.cgpbooks.co.uk/secondary-books/gcse/science/chemistry/cafr42-new-gcse-chemistry-aqa-revision-guide-found?c=23707573>