

## Pearson BTEC National Diploma in Applied Science

### Why study Applied Science at The Sixth Form at Ridgewood?

- Explore the fundamental nature of almost everything that we know of.
- Study all three sciences in detail; get a deeper understanding of the world around you, and yourself. Start your journey into a world deep beneath the surface of what you can actually see.
- Study in three specialist post-16 laboratories in Faraday where the majority of teaching takes place, one for each of Biology, Chemistry and Physics. All our labs are highly resourced with practical equipment you will use frequently during your studies.
- One of our largest departments, the Science team boasts ten teachers and three technicians. Within this team we have highly qualified teachers in all three specialisms. Their backgrounds and expertise cover a wide breadth of areas including engineering, applied chemistry and biological sciences.
- Former alumni of the science department at Ridgewood have progressed to study medicine, astrophysics, radiography, physics, mathematics, mechanical engineering, chemical engineering, computer science, chemistry, bio-medical science and aeronautical engineering.

### What topics will I study in this subject?

Topic	What this means
Unit 1: Principles and applications of science	<p>All scientists and technicians need to understand the core science subjects and principles; these are the topics you will be focusing on during this unit</p> <ul style="list-style-type: none"> <li>• Chemistry: Structure and bonding in science applications</li> <li>• Biology: Structure and function of cells</li> <li>• Physics: waves and how we use them for communication.</li> </ul>
Unit 2: Practical scientific procedures and techniques	<p>In this unit you will continue with the content you have experienced in Unit 1; however, you will focus more on the practical application of this new knowledge. You will do this by undertaking three main experiments, one for each of the specialisms, and produce a report on each</p> <ul style="list-style-type: none"> <li>• Chemistry: Titrations and calorimetry</li> <li>• Biology: Chromatograms</li> <li>• Physics: Cooling curves.</li> </ul>
Unit 3: Science investigation skills	<p>This unit will consist of you planning and carrying out your own investigations based upon a topic presented to you from Edexcel.</p>
Optional module	<p>This optional module will be decided upon based upon the interests of the group. A list of module titles is given below</p> <ul style="list-style-type: none"> <li>• Physiology of human body systems</li> <li>• Human regulation and reproduction</li> <li>• Biological molecules and metabolic pathways</li> <li>• Genetics and genetic engineering</li> <li>• Diseases and infections</li> <li>• Applications of organic chemistry</li> <li>• Applications of inorganic chemistry</li> <li>• Electrical circuits and their applications</li> <li>• Astronomy and space science</li> </ul>

## What skills will I need in this subject?

Skill	What this skill involves in this subject
A01 – recall/ remember facts	Demonstrate knowledge of scientific fact, definitions of terms, and scientific formulae. <i>Command words: give, label, name, state.</i>
A02 – application of facts	Demonstrate understanding of scientific concepts, procedures, processes and techniques and their application. <i>Command words: calculate, compare, discuss, draw, explain, state, write.</i>
A03 – Scientific principles and interpreting information	Analyse, interpret and evaluate scientific information to make judgements and reach conclusions. <i>Command words: calculate, compare, comment, complete, describe, discuss, explain, state.</i>
A04 – Making connections between scientific principles	Make connections, use and integrate different scientific concepts, procedures, processes or techniques. <i>Command words: compare, comment, discuss, explain.</i>

## What will my lessons involve?

- Applied Science is taught by three separate science teachers: a specialist in each of biology, chemistry and physics.
- Applied Science lessons will contain a variety of different tasks to suit all learners' needs. Examples of activities in lessons include fact recall quizzes on A01 content, hands-on practicals in order to complete the practical aspects of the course, and paired discussions around higher level thinking. We also focus heavily on teacher-led worked examples and model answers.
- 75% of the course is coursework and therefore a large proportion of lessons will be completing coursework and practical aspects of the course.
- We also strive to give you regular written feedback on classwork so that you know exactly how to improve and achieve a better grade.

## What will my independent study involve?

- A significant factor in your success at post-16 is the quality of your independent study work. Independent study for Applied Science will largely consist of making revision resources and answering questions, and completing coursework.
- We expect you to spend nine hours over two weeks completing high quality independent study for this course.
- A portion of your independent study will also consist of conducting research by searching online, in text books or revision guides. This could either involve finding practical methods to conduct in the class or researching content prior to lessons.
- It is important for you to reflect regularly on your strengths and areas for development and make improvements to these. The most successful Applied Science students are the ones who do this the most by completing additional notes and questions on areas for development.
- You will also be spending a large proportion of your time completing coursework and redrafting work to hand to your separate biology, chemistry and physics teachers.

## How will I be assessed?

Percentage exam assessment: 25%	Percentage coursework assessment: 75%
---------------------------------	---------------------------------------

Assessment	Details of assessment
Unit 1 Assessment	<p>This will be assessed through three 40 minute examinations. Each one will focus on a particular specialism.</p> <p>It will take place in the summer of year one of the course. It is worth 25% of your overall grade.</p>
Unit 2 Assessment	<p>A coursework portfolio of practicals will be built up throughout this module and then submitted to the examination board.</p> <p>This coursework will be built up throughout both years and submitted at the end of your second year. It is worth 25% of your overall grade.</p>
Unit 3 Assessment	<p>You will be assessed through a piece of timed coursework with an examination component that will be performed in the classroom and then submitted to examination board.</p> <p>This will be completed in the summer of year one of the course. It is worth 33% of your overall grade.</p>
Option module Assessment	<p>This piece of coursework is based upon a practical that you will perform in class and then submitted to the examination board.</p> <p>This coursework will be built up throughout your second year and submitted in summer. It is worth 17% of your overall grade.</p>

## How do I know this is the right course for me?

- Studying Applied Science is not only interesting and challenging. It also opens up many future career possibilities as it offers an alternative pathway into a career in science.
- At the end of this course you will receive UCAS points; these can be used at many universities as entry points. However it is important that you check to ensure the university course you wish to apply for accepts UCAS points as some do not.
- The content follows on from the GCSE science, but the demands and skill level are higher. Therefore you have to be willing to dedicate your time to developing these.
- There are many practicals and subsequent lab reports to write; these all contribute to your overall final grade. This is better suited to people who don't always perform well on written examinations.

