

# Biology

## Curriculum Map

	<div>Year 7</div> <div>B 1.1 Cells B 1.3 a) Animal reproduction B 1.2 Body systems B 2.1 Health and lifestyle</div>	<div>Year 8</div> <div>B 2.2 a) Ecosystem process (Human) B 2.2 b) Ecosystem process (plant) and B1.3 b) Plant reproduction B 2.3 Adaptation and Inheritance</div>	
Accelerated group	<div>Year 9</div> <div>4.1 Cell biology 4.2 Organisation (start)</div>	<div>Year 10</div> <div>4.2 Organisation (finish) 4.3 Infection and response</div>	<div>Year 11</div> <div>4.4 Bioenergetics 4.5 Homeostasis and response 4.6 Inheritance, variation and evolution 4.7 Ecology</div>
	<div>Year 9</div> <div>4.1 Cell biology 4.2 Organisation 4.3 Infection and response 4.4 Bioenergetics</div>	<div>Year 10</div> <div>4.5 Homeostasis and response 4.6 Inheritance, variation and evolution Revisit 4.1—4.4</div>	<div>Year 11</div> <div>4.7 Ecology</div>
Options group			
Combined group	<div>Year 9</div> <div>4.1 Cell biology 4.2 Organisation (start)</div>	<div>Year 10</div> <div>4.2 Organisation (finish) 4.3 Infection and response 4.4 Bioenergetics</div>	<div>Year 11</div> <div>4.5 Homeostasis and 1esponse 4.6 Inheritance, variation and evolution</div>
	<div>Year 12</div> <div>Biological molecules Cells, viruses and reproduction Classification and biodiversity Exchange and transport (in mammals, fish and invertebrates)</div>	<div>Year 13</div> <div>Energy for biological processes Microbiology and pathogens Modern genetics Origins of genetic variation Control systems Ecosystems</div>	



# Chemistry

## Curriculum Map — KS3/4

Year 7	Year 8
C 1.2 Elements, atoms and compounds C 1.3 a) An introduction to reactions C 2.1 The Periodic Table C 1.1 The Particle Model C 2.2 a) Solutions C 2.2 b) Separation techniques	C 1.3 b) More about reactions C 1.4 Acids and alkalis C 2.3 Metals and acids C 2.4 The Earth & C 1,3 b) Combustion

Accelerated group	Year 9	Year 10	Year 11
	Chemistry fundamentals 4.9 Chemistry of the atmosphere 4.10 Using resources 4.8 a Chemical analysis 4.1 Atomic structure and the Periodic Table	4.2 Bonding structure and properties of matter 4.3 Quantitative chemistry 4.4 Chemical changes 4.5 Energy changes	4.6 Rates of reaction 4.7 Organic chemistry 4.8 b) Ion tests

Options group	Year 9	Year 10	Year 11
	Chemistry fundamentals 4.9 Chemistry of the atmosphere 4.10 Using resources 4.8 Chemical analysis 4.1 Atomic structure and the Periodic Table	4.2 Bonding structure and properties of matter 4.3 Quantitative chemistry 4.4 Chemical changes 4.5 Energy changes	4.6 Rates of reaction 4.7 Organic chemistry 4.8 b) Ion tests

Combined group	Year 9	Year 10	Year 11
	Chemistry fundamentals 5.9 Chemistry of the atmosphere 5.10 Using resources 5.8 a Chemical analysis 5.1 Atomic structure and the Periodic Table	5.2 Bonding structure and Properties of matter 5.3 Quantitative chemistry 5.4 Chemical changes 5.5 Energy changes 5.6 Rates of reaction	5.7 Organic chemistry



# Chemistry

## Curriculum Map — KS5

Year 12	Year 13
<u>Physical</u> Atomic structure Amount of substance Bonding Energetics Oxidation, reduction and redox equations Kinetics Chemical equilibria, Le Chatelier's principle and K <sub>c</sub> Acids and bases	<u>Physical</u> Thermodynamics Rate equations Equilibrium constant K <sub>p</sub> for homogeneous systems Electrode potentials and electrochemical cells
<u>Organic</u> Introduction to organic chemistry Alkanes Halogenoalkanes Alkenes Alcohols Organic analysis	<u>Organic</u> Optical isomerism Aldehydes and ketones Carboxylic acids and derivatives Aromatic chemistry Amines Polymers Amino acids, proteins and DNA Organic synthesis Nuclear magnetic resonance spectroscopy Chromatography
<u>Inorganic</u> Periodicity Group 2, the alkaline earth metals Group 7(17), the halogens	<u>Inorganic</u> Properties of Period 3 elements and their oxides Transition metals Reactions of ions in aqueous solution



# Physics

## Curriculum Map

	<b>Year 7</b>  P 1.3 Light P 1.4 Space P 1.2 Sound P1.1 Forces	<b>Year 8</b>  P 2.3 a) Motion P 2.3 b) Pressure P 2.2 Energy P2.1 Electricity and magnetism	
Accelerated group	<b>Year 9</b>  4.1 Energy 4.3 Particle model of matter 4.4 Atomic structure 4.2 Electricity 4.6 Waves (start)	<b>Year 10</b>  4.6 Waves (finish) 4.5 Forces 4.7 Magnetism and electromagnetism	<b>Year 11</b>  4.8 Space
	<b>Year 9</b>  4.1 Energy 4.3 Particle model of matter 4.4 Atomic structure 4.2 Electricity	<b>Year 10</b>  4.6 Waves 4.5 Forces	<b>Year 11</b>  4.7 Magnetism and electromagnetism 4.8 Space
Options group	<b>Year 9</b>  6.1 Energy 6.3 Particle model of matter 6.4 Atomic structure 6.2 Electricity	<b>Year 10</b>  6.6 Waves (finish) 6.5 Forces (start)	<b>Year 11</b>  6.5 Forces (finish) 6.7 Magnetism and electromagnetism
	<b>Year 9</b>  6.1 Energy 6.3 Particle model of matter 6.4 Atomic structure 6.2 Electricity	<b>Year 10</b>  6.6 Waves (finish) 6.5 Forces (start)	<b>Year 11</b>  6.5 Forces (finish) 6.7 Magnetism and electromagnetism
Combined group	<b>Year 12</b>  3.1 Measurements and their errors 3.2 Particles and radiation 3.3 Waves 3.4 Mechanics and materials 3.5 Electricity	<b>Year 13</b>  3.5 Electricity 3.6 Further mechanics and thermal physics 3.7 Fields and their consequences 3.8 Nuclear physics 3.11 Engineering physics	
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# Applied Science Curriculum Map

## Year 12

### Unit 1 – Principles and applications of Science

The electronic structure of atoms  
 Ionic bonding  
 Covalent bonding  
 Metallic bonding  
 Intermolecular forces  
 Quantities used in chemical reactions  
 The periodic table  
 Physical properties of elements  
 Chemical properties of elements  
 Cell theory  
 Microscopy  
 Ultrastructure and function of organelles in cells  
 Cell specialisation: structure and function  
 Tissue structure and function; epithelial, endothelial, muscle, nervous  
 Oscillations, periods and amplitude  
 Wave motion  
 Wave speed  
 Graphical representation of wave features  
 Types of wave motion: transverse and longitudinal  
 Diffraction gratings  
 Stationary waves resonance  
 The principles of fibre optics  
 Optical fibres  
 Applications of fibre optics in medicine and communication  
 Speed of electromagnetic waves and inverse square law for intensity of a wave  
 Regions of the electromagnetic spectrum

### Unit 2 – Practical scientific procedures and techniques

Laboratory equipment and calibration  
 Standardisation of solutions using titration  
 Titration  
 Colorimetry  
 Thermometers  
 Cooling curves  
 Determination of melting point  
 Chromatographic techniques  
 Applications of chromatography  
 Other types of chromatography  
 Theory and principles behind chromatography  
 Personal responsibility  
 Interpersonal skills  
 Professional practice

## Year 13

### Unit 3 – Science investigation skills

Writing a hypothesis for an investigation  
 Selection of appropriate equipment, techniques and standard procedures  
 Health and safety issues  
 Variables in an investigation  
 Method for data collection and analysis  
 Collection of qualitative and quantitative data  
 Processing data  
 Interpretation and analysis of data  
 Evaluation  
 Enzymes in action  
 Diffusion of molecules  
 Plants and their environment  
 Energy content of fuels  
 Electrical circuits

### Unit 8 – Physiology of human body systems

Structure of the musculoskeletal system  
 Functions of the musculoskeletal system  
 Disorders of the musculoskeletal system  
 Health matters and treatments related to the musculoskeletal system  
 Structure of the lymphatic system  
 Functions of the lymphatic system  
 Disorders of the lymphatic system  
 Health matters and treatments related to the lymphatic system  
 Structure of the digestive system  
 Functions of the digestive system  
 Disorders of the digestive system  
 Health matters and treatments related to the digestive system and diet



# Health & Social Care Curriculum Map

## Year 12

### **Unit 1 – Human lifespan development**

Physical development across life stages  
Intellectual development across life stages  
Emotional development across life stages  
Social development across life stages  
The nature/nurture debate  
Genetic factors that affect development  
Environmental factors that affect development  
Social factors that affect development  
Economic factors that affect development  
Major life events that affect development  
The physical effects of ageing  
The psychological effects of ageing  
The societal effects of ageing

### **Unit 14 – Physiological disorders and their care**

Types of physiological disorder and the effects on body systems and functions  
Impact of disorders on service users' physical, mental, social and emotional health  
Causes of physiological disorders  
Signs and symptoms of physiological disorders  
Investigative procedures for physiological disorders  
Diagnostic procedures for physiological disorders  
Provision of treatment and support  
Types of carers and care settings  
Care methods and strategies  
Treatment plan processes

## Year 13

### **Unit 2 – Working in health and social care**

Roles of people who work in health and social care settings  
Responsibilities of people who work in health and social care settings  
Multi-disciplinary working in the health and social care sector  
Monitoring the work of people in health and care settings  
Roles of organisations in providing health and care services  
Issues that affect access to services  
Ways organisations represent the interests of service users  
Roles of organisations that regulate and inspect health and social care services  
Responsibilities of organisations towards people who work in health and social care settings  
People with specific needs  
Working practices

### **Unit 5 – Meeting individual care and support needs**

Promoting equality, diversity and preventing discrimination  
Skills and personal attributes required for developing relationships with individuals  
Empathy and establishing trust with individuals  
Ethical issues and approaches  
Legislation and guidance on conflict of interest, balancing resources and minimising risk  
Enabling individuals to overcome challenges  
Promoting personalisation  
Communication techniques  
How agencies work together to meet individual care and support needs  
Roles and responsibilities of key professionals on multi-disciplinary teams  
Maintaining confidentiality  
Managing information



# Science

## Assessment Guidance

### Assessment & Feedback framework – Science 2021-22

#### KS3 and 4

This policy outlines the expectations with regards to teacher marking and feedback, along with what should be present in student written work.

All students across KS3 and 4 will have a science exercise book to be used in the majority of lessons. Some lessons will also use printed booklets to support learning.

Embedded throughout this policy are clear links to the academy expectations of student work:

**Pride** in work

**Subject knowledge** and practise of **skills**

Regular **review**

Actions following **responsive feedback**

**Progress.**

#### Marking

Staff are expected to formally mark the following:

**Summative assessments** (see later on for assessment plan)

Each assessment should be completed on paper and then stuck into the exercise book. Feedback and reflection for the test should be clearly evidenced thorough the use of closing the gap activities (see below)

#### **Closing the gap activities**

Students are to complete an activity once getting test feedback; this activity targets an area on the topic which they found most challenging.

#### **Assessed homework**

This year we are trialling assessed HW with Y7 and 8 to give students an additional 3 opportunities a year to receive graded work which is globally assessed.

#### **Standards audit**

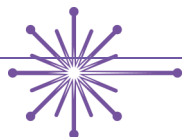
Once a module a class set of books will be marked using a whole class feedback sheet. This is only focusing on 'standards', as outlined in the book section of the policy.

'Formal' marking means the teacher taking in work and writing comments either on the work directly, or on a whole class feedback sheet.

In addition to this formal marking, we will expect to see the following evidence of effective feedback in lessons and books:

#### **Peer/students marking**

This is when students mark each other's or their own work. This must be done in a different colour to that which the test was completed in.



# Science

## Assessment Guidance

### **Oral feedback**

This can be from the teacher or a peer to a student to support their progress. This will not necessarily be evident in the book, but will be noted in observations.

### **Student work standards**

A student's exercise book (or booklet) is expected to become a valuable revision resource, and as such, all notes and activities must be presented in line with Academy/department expectations.

Each new topic must be introduced through the use 'knowledge organiser', to be clearly displayed in the exercise book.

There should be evidence of regular homework being set. This could be learning some facts or keywords for a quiz, in which case the quiz should clearly state that it was based on homework being completed.

To embed longer term learning there must also be evidence of retrieval practice in the exercise books. This may come in the form of mini tests at the beginning and/or end of lessons.

For KS4, the exercise book must contain all work relating to the teaching order presented in the front of the book. Practical work, including core practical work, will also be written in the book. Pre-prepared sheets will be used to structure core practical work.

For KS3, the exercise book will contain all work, both knowledge and skills based.

### **Assessments**

Our students in KS3 and 4 have 3 formal, summative assessments each academic year. These will be publicised to each year group in good time.

The assessments will contain some element of retrieval questions in an examination format.

## **KS5**

### **Biology**

Students are assessed in this linear qualification in three formal examinations. Questions will also assess the use of mathematical skills, which will make up to 10% of the exam papers. There is no coursework element of the course. Instead, the students will be required to complete a number of core practicals which cover specific skills and techniques.

In lesson, feedback is provided to students both in the forms of written and verbal comments. Students will complete a range of different tasks, including summative assessments and assessed homeworks, of which written feedback and time for reflection is provided.

### **Chemistry**

All students across KS5 chemistry will have a small folder, notepad, or exercise book to be used in the majority of lessons. Chemistry students are also expected to keep a folder or set of folders containing notes and documents relating to the course from previous units covered.





# Science

## Assessment Guidance

Students in year 12 and 13 will sit 10 assessments throughout the 2 years in lessons plus a baseline test. The assessments will take around 50 minutes and be made up of around 40 marks. In addition, students will be asked to complete one piece of assessed homework on a given topic every module. The assessments are primarily topic-based however they can on occasion draw on knowledge and skills from previous topics as the course progresses which replicates the synoptic nature of the chemistry course. These will be used in conjunction with other class-based tasks as a basis for the students' attainment grades/module grades. Students will be informed of assessments in good time to allow effective preparation to take place. The students will also sit two formal assessments based heavily on previous examinations one in each year. These are used directly to inform teachers predicted grades.

### **Physics**

#### **Marking**

Staff will formally mark the following:

#### **Summative assessments**

#### **Required practical work**

Each required practical will be completed on paper with the appropriate cover sheet. Staff should mark the work and indicate student success on the cover sheet.

#### **Closing the gap activities**

#### **Standards audit**

In addition to this formal marking, we will expect to see the following evidence of effective feedback in lessons and books:

#### **Peer/students marking**

#### **Oral feedback**

#### **Assessment frequency**

Students in y12 will have five, and y13 six, formal assessments points throughout the year which will feed directly into their attainment grades given in module grades. These assessments are structured to have around 35 marks of examination style questions and around 5 multiple choice questions. These are based on the topics they have done since the last assessment and allow for some practice of the multiple choice element of the exam papers 1 and 2. The topics being covered in the assessment will be clearly publicised to students in good time before the examination to facilitate effective revision. Students will have 2 two formal assessment periods, one in y12 and one in y13, in which they will complete a mock Paper, typically based on paper 1 from the most recent examination series. This will be used as a significant tool to inform module grades and predicted grades.

