

# Biology

## Curriculum Map

Year 7	Year 8
B 1.1 Cells B 1.3 a) Animal reproduction B 1.2 Body systems B 2.1 Health and lifestyle	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

Accelerated group

Year 9	Year 10	Year 11
4.1 Cell biology 4.2 Organisation (start)	4.2 Organisation (finish) 4.3 Infection and response	4.4 Bioenergetics 4.5 Homeostasis and response 4.6 Inheritance, variation and evolution 4.7 Ecology

Options group

Year 9	Year 10	Year 11
4.1 Cell biology 4.2 Organisation 4.3 Infection and response 4.4 Bioenergetics	4.5 Homeostasis and response 4.6 Inheritance, variation and evolution Revisit 4.1—4.4	4.7 Ecology

Combined group

Year 9	Year 10	Year 11
4.1 Cell biology 4.2 Organisation (start)	4.2 Organisation (finish) 4.3 Infection and response 4.4 Bioenergetics	4.5 Homeostasis and response 4.6 Inheritance, variation and evolution

Year 12	Year 13
Biological molecules Cells, viruses and reproduction Classification and biodiversity Exchange and transport (in mammals, fish and invertebrates)	Energy for biological processes Microbiology and pathogens Modern genetics Origins of genetic variation Control systems Ecosystems



# 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
<p><u>Physical</u></p> <p>Atomic structure Amount of substance Bonding Energetics Oxidation, reduction and redox equations Kinetics Chemical equilibria, Le Chatelier's principle and <math>K_c</math> Acids and bases</p>	<p><u>Physical</u></p> <p>Thermodynamics Rate equations Equilibrium constant <math>K_p</math> for homogeneous systems Electrode potentials and electrochemical cells</p>
<p><u>Organic</u></p> <p>Introduction to organic chemistry Alkanes Halogenoalkanes Alkenes Alcohols Organic analysis</p>	<p><u>Organic</u></p> <p>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</p>
<p><u>Inorganic</u></p> <p>Periodicity Group 2, the alkaline earth metals Group 7(17), the halogens</p>	<p><u>Inorganic</u></p> <p>Properties of Period 3 elements and their oxides Transition metals Reactions of ions in aqueous solution</p>



# 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
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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
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Options group

<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
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Combined 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
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<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 3.12 Turning points
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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

### Years 7 to 11

These guidelines outline 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 and KS4 students will have a folder in addition to this for core practical work.

Some lessons will also use printed booklets to support learning.

Embedded throughout the guidelines 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** and **Progress**.

### **Marking**

Staff will formally mark the following:

#### **Summative assessments**

Each assessment will be completed on paper and then stuck into the exercise book. Feedback and reflection for the test will be clearly evidenced through the use of 'assessment feedback' stickers.

#### **Core practical work**

Each core 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**

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

#### **Standards audit**

Once a module a class set of books will be marked using a whole class feedback sheet. This is focusing only on 'standards' of the presentation and quality of the work presented in the book, as well as whether or not the student is completing all tasks set in class and at home.

**'Formal' marking** means the teacher will take in work and write comments either on the work directly, or on a whole class feedback sheet. Students will then be provided with time in lessons to reflect on and respond to feedback from these marking sessions.

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.

#### **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.

#### **Assessment frequency**

Students in Y7-10 will have three formal assessment points throughout the year which will feed directly into their attainment grades given in module grades. These assessments are structured to have ten multiple choice questions from any topic the student has studied across the key stage, and then 40 marks of examination style questions based on the topics they have done since the last assessment. The topics being covered in the assessment will be clearly publicised to students in good time before the examination to facilitate effective revision.

Students in Y11 will have 2 two formal assessment periods in which they will complete a mock Paper 1 in the first session, and a Paper 2 in the second session, from each Biology, Chemistry and Physics. This will be used as a significant tool to inform whether a student should be entered for foundation or higher tier in the summer examinations.

