

Year 7 Science

Year 7 science is designed to build on the basic ideas introduced at key stage 2 while keeping in mind that different students, from different schools will have experienced science in different ways.

It is based on the KS3 national curriculum but also uses departmental expertise and our knowledge of the GCSE curriculum. Every unit is based around a career where science can make a real difference and is designed to give students a sound knowledge of the core principles in terms of content and practical skills while also generating an awe and fascination about science.

There are 15 units through “KS3” (6 in years 7 and 8 and 3 in year 9) each of which will last roughly one half term. They have been written to be taught in a specific order to form a spiral curriculum with interleaving throughout

Every unit includes a “required practical” with a specific focus to develop students’ practical skills while other non-specific ideas such as variables, accuracy, precision, anomalies, etc.. are taught throughout the curriculum. Throughout the year students will gain credits towards a “Practical Skills Award” by successfully demonstrating skills in the "required practicals"

Every unit also has a SAIL-based task, a literacy homework and “GOAL” (Go Off And Learn) tasks

Each lesson begins with a “Brain in Gear” retrieval task and a “Key Learning Question”. There will be teacher input of some kind followed by tasks which use prior learning to develop greater knowledge understanding. Once understanding is established then students develop their ability to apply this to unfamiliar situations.

At the end of each unit, students complete a unit test made up of past exam questions. This is then marked and graded and used to identify strengths and areas in need of attention. Note that many topics overlap and so unit assessments may contain elements from different units which also acts as retrieval practice.

Year 7 Curriculum	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic(s)	7-1 Vet	7-2 Oceanographer	7-3 Engineer	7-4 Dietician	7-5 Nurse	7-6 Racing Driver

	Classification Food chains Habitats and populations Adaptation Microscopes Cells Specialised cells	The structure of the Earth States of matter Particle theory Dissolving Pressure in liquids The rock cycle	Fuels and energy resources Energy transfers Fuel costs Heat and insulation Current and potential difference in series circuits	The digestive system Enzymes and digestion Fermentation Food groups and a healthy diet	Bacteria and viruses Tissues, organs and organ systems Human reproduction The menstrual cycle Disease Body defences Recreational drugs Testing for glucose and protein	Combustion Simple machines Speed Distance-time graphs Newton's first law - balanced and unbalanced forces Current and potential difference in parallel circuits
Assessment	<p>"GOAL" (Go Off And Learn) mini-tests within each topic Extended Independent Assessments - extended tasks with shared success criteria Formal end of unit tests End of Year exams covering all the units covered during the year</p>					

Independent Work

Regular homework covering a variety of skills:

- GOALs ("Go Off And Learn") for factual recall
- Application
- Practice questions to gain experience of recall, application and unfamiliar contexts
- Write ups of experimental work, especially work related to the Required Practicals
- Extended Independent homework tasks

Year 8 Science

Year 8 science is designed to build on the ideas introduced in year 7 and begin to prepare students for GCSE.

It is based on the KS3 national curriculum but also uses departmental expertise and our knowledge of the GCSE curriculum.

Every unit is based around a career where science can make a real difference and is designed to give students a sound knowledge of the core principles in terms of content and practical skills while also generating an awe and fascination about science.

There are 15 units through “KS3” (6 in years 7 and 8 and 3 in year 9) each of which will last roughly one half term. They have been written to be taught in a specific order to form a spiral curriculum with interleaving throughout

Every unit includes a “required practical” with a specific focus to develop students’ practical skills while other non-specific ideas such as variables, accuracy, precision, anomalies, etc.. are taught throughout the curriculum. Throughout the year students will gain credits towards a “Practical Skills Award” by successfully demonstrating skills in the "required practicals"

Every unit also has a SAIL-based task, a literacy homework and “GOAL” (Go Off And Learn) tasks

Each lesson begins with a “Brain in Gear” retrieval task and a “Key Learning Question”. There will be teacher input of some kind followed by tasks which use prior learning to develop greater knowledge understanding. Once understanding is established then students develop their ability to apply this to unfamiliar situations.

At the end of each unit, students complete a unit test made up of past exam questions. This is then marked and graded and used to identify strengths and areas in need of attention. Note that many topics overlap and so unit assessments may contain elements from different units which also acts as retrieval practice.

Year 8 Curriculum	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic(s)	8-2 Climatologist The composition of the atmosphere The Earth and the seasons Photosynthesis and the atmosphere The carbon cycle Climate change	8-3 Spy Newton’s first law Newton’s second law Friction and resistance to motion Hooke’s law Elastic energy Light and ray	8-4 Research chemist Conservation of mass Chemical reactions Formulae and equations Reactions of acids	8-1 Farmer Plant and animal cells Photosynthesis Leaf structure Diffusion and transpiration Plant reproduction Pollination and seed	8-6 Musician Transverse and longitudinal waves Sound Sound waves Frequency, wavelength and wave speed Light waves	8-5 Conservationist Cells and the nucleus Chromosomes, genes and DNA Heredity Variation and natural selection

	Acids and bases Indicators and the pH scale Neutralisation	diagrams Reflection and mirrors The Sun and stars Galaxies Floating and sinking	with metals and bases Reactivity series of metals Displacement reactions Extraction of metals Conservation of mass	dispersal Food webs Bioaccumulation	Colour Electrical resistance	Extinction Biodiversity
Assessment	<p>“GOAL” (Goal Off And Learn) mini-tests within each topic Extended Independent Assessments - extended tasks with shared success criteria Formal end of unit tests End of Year exams covering all the units covered during year 7 and year 8</p>					

Independent Work
<p>Regular homework covering a variety of skills:</p> <ul style="list-style-type: none"> • GOALs (“Go Off And Learn”) for factual recall • Application • Practice questions to gain experience of recall, application and unfamiliar contexts • Write ups of experimental work, especially work related to the Required Practicals • Extended Independent homework tasks

Year 9 Science

Year 9 science is designed to build on the ideas introduced in years 7 and 8, before beginning the GCSE courses by studying one GCSE topic from each of the biology, chemistry and physics courses

It is based on the KS3 national curriculum but also uses departmental expertise and our knowledge of the GCSE curriculum. Every unit is based around a career where science can make a real difference and is designed to give students a sound knowledge of the core principles in terms of content and practical skills while also generating an awe and fascination about science.

There are 15 units through “KS3” (6 in years 7 and 8 and 3 in year 9) each of which will last roughly one half term. They have been written to be taught in a specific order to form a spiral curriculum with interleaving throughout

Every unit includes a “required practical” with a specific focus to develop students’ practical skills while other non-specific ideas such as variables, accuracy, precision, anomalies, etc.. are taught throughout the curriculum. Throughout the year students will gain credits towards a “Practical Skills Award” by successfully demonstrating skills in the "required practicals"

Every unit also has a SAIL-based task, a literacy homework and “GOAL” (Go Off And Learn) tasks

After “End of Key Stage 3” exams students begin the GCSE science curriculum by studying three GCSE science topics; B7, C9 and P1.

Each lesson begins with a “Brain in Gear” retrieval task and a “Key Learning Question”. There will be teacher input of some kind followed by tasks which use prior learning to develop greater knowledge understanding. Once understanding is established then students develop their ability to apply this to unfamiliar situations.

At the end of each unit, students complete a unit test made up of past exam questions. This is then marked and graded and used to identify strengths and areas in need of attention. Note that many topics overlap and so unit assessments may contain elements from different units which also acts as retrieval practice.

Year 9 Curriculum	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic(s)	9-1 Sports scientist Human skeleton Muscles Healthy diet	9-2 Circus performer Gravity and non-contact forces Pressure	9-3 Scientific pioneer Simple atomic model Symbols and	C9 - Chemistry of the Atmosphere Evolution of the atmosphere The greenhouse	B7 - Ecology Competition, Adaptations, Food chains, Trophic levels and	P3: Particle Model of Matter Changes of state and the particle model

	The lungs and breathing Diffusion and gas exchange Asthma and smoking Aerobic and anaerobic respiration	Moments and turning forces Light and the pinhole camera Static electricity Magnetism Electromagnets	formula Properties of metals and non-metals Patterns in the periodic table Development of scientific ideas	effect and climate change Air pollution	biomass, The carbon cycle, Food security, Farming and fisheries	Internal energy and energy transfers Pressure
Assessment	<p>“GOAL” (Goal Off And Learn) mini-tests within each topic Extended Independent Assessments - extended tasks with shared success criteria Formal end of unit tests End of “key stage” exams covering all the units covered during year 7, 8 and 9 are sat in February prior to starting GCSE courses</p>					

Independent Work
<p>Regular homework covering a variety of skills:</p> <ul style="list-style-type: none"> • GOALs (“Go Off And Learn”) for factual recall • Application • Practice questions to gain experience of recall, application and unfamiliar contexts • Write ups of experimental work, especially work related to the Required Practicals • Extended Independent homework tasks