



Curriculum Intent

Subject: Science
Year 7

	What?	Why?	National Curriculum Links
Term 1-1	7B1 Cells, Organs & Systems – Living things are made of cells, structure of animal & plant cells and function of organelles, microscopes and calculating magnification, tissues, organs, main organ systems – circulatory, respiratory, digestive, central nervous	Foundation topic for biology – cells (plant & animal), organs (plant & animal), organ systems, microscopes. Underpins many other units and is a key topic at GCSE.	Structure and function of living organisms Cells and organisation
	7C1 Atoms, elements & particles – symbols from the Periodic Table, definition of element, compound, molecule, metals and non-metals, chemical formulae	Fundamental topic in chemistry, built on in all other topics. Many physics topics also benefit from a good understanding of this topic.	The particulate nature of matter Atoms, elements and compounds The Periodic Table Physical changes
	7P1 Energy – energy types, units, conservation of energy, efficiency, fuels, renewable and non-renewable resources. Relevant equations $GPE=mgh$, Kinetic energy	Foundation topic for physics – types of energy – law of conservation of energy – physics formula. This topic crosses over into the fundamental GCSE topics (P1, P2). Maths skills in science introduced – including calculator use	Energy Energy changes and transfers Changes in systems



Term 1-2	7B2 Sexual reproduction – sex organs, sex cells, fertilisation, pregnancy, birth, menstrual cycle, contraception, STIs	Important topic for all KS3 students. Builds on the cells topic. PSCH links.	Reproduction
	7C2 Separating mixtures – Definition of a mixture, methods of separation include filtration, crystallisation, distillation, chromatography	Fundamental practical methods – expanded on at GCSE. Builds on knowledge gained from 7C1.	Pure and impure substances
Term 2-1	7P2 Electricity – series and parallel circuits, circuit symbols, calculating current and voltage, $V=IR$, resistance, safety, fuses	Safety at home. This unit expanded on at GCSE – a good unit to stretch high ability students with physics equations and complex circuits	Current electricity Static electricity
	7B3 Muscles & bones – Names of major muscles, breathing, lungs, structure of the heart, the circulatory system, strength of bones	Career links for people interested in medicine etc. Lungs and heart recapped from previous topic (7B1) and built on at GCSE	The skeletal and muscular systems
Term 2-2	7C3 Acids & alkalis – names and formulas of common acids and alkalis, neutralisation, making and naming salts, pH scale, indicators	Excellent topic for recapping fundamental chemistry terms. Builds knowledge and skills in the lab, using apparatus. Expanded on at GCSE into a quite difficult topic, so a good grounding here is essential.	Chemical reactions
	7P3 Forces – Types of force, Hooke's Law, friction, balanced and unbalanced forces, resultant, measuring forces, free body diagrams, $W=mg$	Very important physics topic that underpins many others. Start to use more physics equations. Expanded on at GCSE.	Forces Balanced forces



Term 3-1	7B4 Ecosystems – Variation, adaptations, sampling - quadrats, food chains, food webs, pyramids of number and biomass	GCSE links Geography links	Relationships in an ecosystem
	7C4 Rates of Reaction – factors that increase the rate of reaction include temperature, concentration and surface area	Expanded on at GCSE – this is a new topic we have included in our Scheme of Work, so that students are better prepared for this at GCSE. Builds practical skills.	Chemical reactions Energetics
Term 3-2	7P4 Sound & Light – Types of waves. Longitudinal waves, calculating speed of sound using formula, detecting sounds, structure of the ear, ultrasound and infrasound properties and uses. Reflection, law of reflection, refraction, colours in light, UV and infrared, lenses and how they work, the structure of the eye, standard form.	Expanded on at GCSE Brings together several different science disciplines – biology (structure of ear and eye) and physics – how the particles interact to form sound waves etc.	Observed waves Sound waves Light waves
	7B5 Food & nutrition – balanced diet, food groups, food tests – carbohydrates, fat, protein. Enzyme action and factors that affect enzymes, digestive system	Essential knowledge for a healthy lifestyle in the future. Builds on 7B1. Expanded at GCSE. Links with KS3 DT (Food)	Nutrition and digestion