

## Overview plans for academic year 2024-2025

#### Subject:Science

## Year group/cohort:KS3

	Knowledge and	Knowledge and	Skills	Skills	Assessment	Subject specific	Cross curricular
	Understanding	Understanding				literacy	links
	Components	Composite	Components	Composite	What is being	Key Vocabulary	Including
	(Key concepts)	(Bigger picture)	(Key concepts)	(Bigger picture)	assessed, how,		Personal
					and when?		Development
							and SMSC
Autumn	Understand that	Unit 1 – Human				Cell, cell	Links with PE –
Term 1	the human body	<u>Body</u>	Using a light	Practical -		membrane,	healthy diet and
	is composed of		microscope	Microscopes	Formative	cytoplasm,	well being
	structures called				Assessment –	nucleus, genetic,	
	organs, which are				Cells	tissues, organs,	
	organised into					organ systems,	
	organ systems				AFL 6 mark	enzymes,	
	that carry out all				question –	digestion,	
	of the key				Specialised Cells	absorbed, pulse	
	processes of life.					rate, respiration,	
	Understand that					pathogen,	
	these systems all		Compare different	Practical – Energy		bacteria, virus,	
	require energy,		foods energy	<u>in Food</u>	Formative	toxin, antibody,	
	which is		values		Assessment –	ingest,	
	contained in food				Practical skills	vaccination,	
	and released in					drug, penicillin,	

	the cell by respiration. The organ systems are responsible for delivering food and oxygen to the cells and taking away waste.  A healthy body can be maintained by a balanced diet, exercise and a healthy lifestyle.	Testing for starch, glucose and protein Investigate the effect of exercise on pulse rate	Practical – Food Testing  Practical – Pulse Rate	Check Point/Vocab builder  AFL 6 mark question  End of Unit Assessment	additive, glands, hormones, menstrual cycle, fertility, contraceptive	
Autumn	Understand that				Cell, cell	Students have
Term 2	these key processes, including reproduction, are coordinated by the nervous system and a hormone system. Understand that health can be damaged by microbes, which				membrane, cytoplasm, nucleus, genetic, tissues, organs, organ systems, enzymes, digestion, absorbed, pulse rate, respiration, pathogen, bacteria, virus, toxin, antibody,	the opportunity to study the word of the famous scientist Edward Jenner and his contribution to vaccines

	can cause infectious		Students investigate white	Practical - Microscopes		ingest, vaccination,
	diseases. The		blood cells	<u>iviici oscopes</u>		- I
			blood cells			drug, penicillin,
	body can defend				Charles intand	additive, glands,
	itself against most diseases but				Checkpoint and Vocab Builder	hormones,
					vocab Builder	menstrual cycle,
	will sometimes					fertility,
	need drugs in				451.634.1	contraceptive
	order to alleviate				AFL 6 Mark	
	the symptoms				Question –	
	and speed				Menstrual Cycle	
	recovery.					
	Understand that					
	several hormones				Checkpoint and	
	are involved in				Vocab Builder	
	the menstrual					
	cycle of					
	a woman and the				End of Topic	
	uses of hormones				<u>Assessment</u>	
	in fertility					
	treatment.					
Spring	Understand that	Unit 3 Elements,				Atom, particle,
Term 1	matter is	Mixtures and				element, boiling
	composed of tiny	Compounds				point, liquid,
	particles called		Students	<u>Practical – Alkali</u>		gas, conduct,
	atoms and there		investigate the	Metals		metals, melting
	are about 100		reactivity of alkali			point, solid,
	naturally		metals in this		Checkpoint and	shiny, malleable,
	occurring types		demo		Vocab Builder	ductile, non-
	of atoms called				p142/3	metals, brittle,

elements.	Students	Practical Chemical		compound,	
Elements are	investigate	Reactions		mixture,	
shown in the	chemical reactions			equation, kinetic	
periodic table				theory,	
and are either				chromatography,	
metals or non-				crystallisation,	
metals. Atoms				filtration,	
are the building				distillation,	
blocks for all			AFL 6 mark	solvent, ore,	
substances.			Question –	alloy, corrosion,	
Understand that			Compounds	polymer,	
when two or				biodegradable,	
more elements				incineration,	
combine				microorganism,	
chemically a				recycling.	
compound is	Students				
produced.	investigate	<u>Practical –</u>			
Different	temperature	Changes of State	Mendeleev FA –		
substances have	change and		<b>Changes of State</b>		
different	changes of state				
combinations of					
atoms joined					
together in					
different ways,					
which gives them					
different					
properties, such					
as whether they					
are solid, liquid or					
gaseous at room					
temperature.					
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Spring Term 2	Many materials we use are mixtures. Understand that mixtures can be separated by processes such as filtration. Understand that mixtures can be separated by processes such as filtration. Understand the properties of metals and alloys. Understand how polymers are formed and there uses.	Students investigate separation techniques  Students make polymers	Practical – Rock Salt  Practical – Making Slime	AFL 6 mark Question – Mixtures  Checkpoint and Vocab Builder  End of Topic Assessment	Atom, particle, element, boiling point, liquid, gas, conduct, metals, melting point, solid, shiny, malleable, ductile, nonmetals, brittle, compound, mixture, equation, kinetic theory, chromatography, crystallisation, filtration, distillation, solvent, ore, alloy, corrosion, polymer, biodegradable, incineration, microorganism, recycling.
Summer Term 1	Understand that energy can be transferred usefully, stored or dissipated, but cannot be created or destroyed.	Students investigate energy transfers	Practical – energy Circus		Energy, energy store, energy resource chemical energy, kinetic energy, elastic potential energy, thermal energy, nuclear

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	Understand that	Students	Practical – Friction		energy,
	forces are pushes	investigate the		Checkpoint and	geothermal
	or pulls, and if a	effect of friction		Vocab Builder	energy absorber,
	force causes an				conductivity,
	object to move				dissipated,
	then work is done				efficiency,
	and energy is				emitter,
	transferred.				lubrication,
	Understand that	Graph skills	<b>Analysing Motion</b>		matt,
	a braking force		<u>Graphs</u>		shiny, radiation,
	will cause an				thermostat,
	energy transfer			Checkpoint and	nuclear reactor,
	that makes a			Vocab Builder	radioactive,
	vehicle slow				renewable, non-
	down and heats				renewable,
	the brakes. The				turbine, alpha
	braking distance				particle, beta
	of a vehicle				particle, gamma
	depends on many				ray, ionising
	different things,				radiation,
	such as the speed				nucleus,
	of the vehicle.				, , , , , , , , , , , , , , , , , , ,
Summer	Understand that				Energy, energy
Term 2	energy resources				store, energy
	available to use				resource
	may be divided				chemical energy,
	into renewable			AFL 6 mark	kinetic energy,
	and non-			Question –	elastic potential
	renewable.			Energy	energy, thermal
	Understand that				energy, nuclear
	energy can also				energy,
	be released from				geothermal

particles such as neutrons and protons in the nucleus, because atoms can break down to emit particles or gamma rays  End of Topic Assessment  End of Topic radio renew renew turbin particle par
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## <u>Subject Information including exam board details:</u>

### KS3 National Curriculum with Entry Level Science Content.

This is a mixed year group. Students access the National Curriculum and are prepared for return to mainstream.

# Careers linked to this subject area:

**Research** 

**Medical** 

### **Nuclear Energy**

#### **Enrichment Opportunities:**

Science in the News : Science News Explores | News from all fields of science for readers of any age (snexplores.org)

Seneca Learning Free Homework & Revision for A Level, GCSE, KS3 & KS2 (senecalearning.com)

BBC Bitesize KS3 Science - BBC Bitesize