## <u>CNCS</u> Year 7 Science: Curriculum Overview

**Rationale**: In Year 7, students will build on prior knowledge from KS2 and develop their skills in key foundation concepts in Biology, Chemistry and Physics. Students will learn how to work safely in a lab and investigate scientific questions. Students will revisit and be introduced to a range of specific subject terminology, learning how to identify and discuss this appropriately. Furthermore, students will be given opportunities to develop their own responses to scientific problems and consider how to apply their knowledge to them.

A learner in Year 7 will know/ have studied: Key areas in all three sciences, this will build the foundation for further study and investigation. They will have worked in a lab and will know the key safety rules to follow. They will have carried out key investigations to help with their understanding of the areas taught.			<u>A learner in Year 7 will be able to:</u> Work safely in labs and carry out investigations. They will be able to question and will have begun to understand the world around them from the units studied.		
Term	Outline	Assessment		Home Learning	Key Skills/ End Point
1	<ul> <li>B1 Cell Biology</li> <li>Students will be able to describe and compare plant, animal and bacterial cells. They will be able to use a microscope to view a slide they have prepared. They will be able to simply describe diffusion, state the factors that affect it and name places where it occurs in living things.</li> <li>C1 Atomic Structure &amp; the Periodic table</li> <li>Students will be able to describe the structure of the atom and the arrangement of elements in the periodic table. They will be able to describe some methods of separating mixtures.</li> <li>P1 Energy</li> <li>Students will be able to describe the energy stores and energy transfers via conduction, convection and radiation. They will compare the renewable and non-renewable energy resources.</li> </ul>	<b>1.1 &amp; 1.2 Pit Stops</b> B1 Cell Biology (LA & HA)C1.1 Atomic Structure & the Periodic Table (LA & HA)C1.2 Atomic Structure & the Periodic Table (LA & HA)P1.1 Energy (LA & HA) P1.2 Energy (LA & HA) <b>1.2 End of Term Assessment (LA &amp; HA)</b> B1 Cell Biology C1 Atomic Structure & the Periodic Table P1 Energy <b>Skills Tested</b> AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.		Set once per week via Educake.	Students are able to recall key knowledge and apply this knowledge to exam questions from different areas. Students will interpret and then describe and explain what graphs show with reference to the data collected for a range of contexts. Students are able to analyse information given to them, and apply their knowledge gained through the course to evaluate data provided.

		AO2: Apply knowledge and understanding of: scientific ideas: scientific enquiry.		
		techniques and procedures.		
		AO3: Analyse information and ideas to:		
		interpret and evaluate; make judgements		
		and draw conclusions; develop and improve		
		experimental procedures.		
	B2 Organisation	2.1 & 2.2 Pit Stops		
	Students will be able to describe organ systems,	B2.1 Organisation (LA & HA)	Set once per	Students are able to recall key knowledge and
	e.g. digestive system, respiratory system and	B2.2 Organisation (LA & HA)	week via	apply this knowledge to exam questions from
	skeletal system. They will evaluate the		Educake.	different areas.
	importance of a balanced diet and the	C5 Energy Changes (LA & HA)		
	consequences of an imbalanced diet. They will			Students will interpret and then describe and
	test the presence of different food groups in food	P2.1 Electricity (LA & HA)		explain what graphs show with reference to
	samples.	P2.2 Electricity (LA & HA)		the data collected for a range of contexts.
	CE Enorgy Changes	2.2 End of Torm Accordment (I.A.S. HA)		Students are able to analyse information given
	CS Ellergy Changes Students will be able to describe energy changes	2.2 Ellu OI Term Assessment (LA & HA) P2 Organization		to them, and apply their knowledge gained
	during chamical reactions. They will be able to	CE Enorgy Changes		through the course to evaluate data provided
	draw energy profile diagrams for exo-	P2 Electricity		through the course to evaluate data provided.
2	/endothermic reactions			
Z	/endothermic reactions.	Skills Tested		
		A01: Demonstrate knowledge and		
	P2 Electricity	understanding of: scientific ideas: scientific		
	Students will be able to compare current and	techniques and procedures.		
	voltage in series and parallel circuits. They will be	AO2: Apply knowledge and understanding		
	able to draw circuit diagrams using their	of: scientific ideas; scientific enquiry,		
	knowledge of circuit symbols. They will	techniques and procedures.		
	understand the role of the National Grid in the	AO3: Analyse information and ideas to:		
	distribution of electricity.	interpret and evaluate; make judgements		
		and draw conclusions; develop and improve		
		experimental procedures.		

	<b>B3</b> Infection and Decrement		Cat and nor	Students are able to recall key knowledge and
	B3 Infection and Response	3.1 & 3.2 Pit Stops	Set once per	Students are able to recall key knowledge and
3	Students will be able to describe the role of	B3 Infection and Response (LA & HA)	week via	apply this knowledge to exam questions from
	pathogens in spreading communicable diseases.		Еписаке	different areas.
	They will describe now the numan body prevents	C4.1 Chemical Changes (LA & HA)		
	the entry of pathogens and how white blood cells	C4.2 Chemical Changes (LA & HA)		Students will interpret and then describe and
	destroy pathogens. They will explain the			explain what graphs show with reference to
	importance of vaccinations and describe the	B4 Bioenergetics (LA & HA)		the data collected for a range of contexts.
	difference between painkillers and antibiotics.			
		P3 Particle Model of Matter (LA & HA)		Students are able to analyse information given
	C4 Chemical Changes			to them, and apply their knowledge gained
	Students will be able to describe the chemical			through the course to evaluate data provided.
	reactions of metals with oxygen, water and acids.	3.2 End of Term Assessment (LA & HA)		
	They will learn how to make a soluble salt and an	B3 Infection and Response		
	indicator to test the pH of different household	C4 Chemical Changes		
	substances. They will compare the reactivity of	P3 Particle Model of Matter		
	different metals and describe how to extract			
	metals from their ores.	Skills Tested		
		AO1: Demonstrate knowledge and		
	P3 Particle Model of Matter	understanding of: scientific ideas; scientific		
	Students will be able to compare the	techniques and procedures.		
	arrangement of particles in solids, liquids and	AO2: Apply knowledge and understanding		
	gases and describe changes of state. They will be	of: scientific ideas; scientific enquiry,		
	able to calculate and measure the density of	techniques and procedures.		
	regular and irregular objects.	AO3: Analyse information and ideas to:		
		interpret and evaluate; make judgements		
	B4 Bioenergetics	and draw conclusions; develop and improve		
	Students will be able to describe and measure the	experimental procedures.		
	rate of photosynthesis. They will also be able to			
	describe respiration and simply compare aerobic			
	and anaerobic respiration.			