Year 9 Science Curriculum Map

Science is taught in mixed ability classes in year 9.

Month	Unit Title	Description
September	B1 Cell Biology	In this unit, pupils learn about the comparative structures of animal, plant and bacterial cells. They learn how to use microscopes. Pupils study cell specialization, cell differentiation, and stem cells, including looking at the discovery and use of HeLa cells. Finally, pupils learn about mitosis and the cell cycle, and how substances and transported in and out of cells.
October	C1 Atomic Structure and the Periodic Table C8 Chemical Analysis	Pupils learn about the structure of the atom and the development of the atomic model. Pupils then learn about the development of the periodic table, including differences between metals and non-metals, and trends in elements in groups 1, 7 and 0. They also study techniques to separate mixtures, including chromatography. Finally, pupils learn about formulations and tests for different gases.
November	P1 Energy	Pupils learn about energy stores, energy transfers and the conservation of energy. They also learn about the efficiency of different machines and how to reduce unwanted energy transfers. Pupils also learn about work done and power. Finally, they learn about different energy resources and their advantages and disadvantages.
January	B4 Respiration	Pupils learn about aerobic and anaerobic respiration and about fermentation in yeast. They also learn about the body's response in terms of heart and breathing rate during and after exercise.
January	B3 Infection and Response	Pupils learn about communicable diseases caused by bacteria, viruses, fungi and protists. They also learn about human defences against infection, and the importance of vaccinations. Pupils also learn about drugs such as antibiotics and painkillers. Finally, pupils learn about drug discovery and drug testing protocols.
February	C9 Atmosphere	Pupils learn about the evolution of the Earth's atmosphere and atmospheric pollutants. In doing so, they learn about greenhouse gases, global warming and climate change.
March	P2 Electricity	Pupils learn about the electrical charge and current in circuits, and the function of different components in a circuit. Pupils investigate how the length of a wire affects its resistance. Pupils also learn about the relationship between potential difference, current and resistance.
April	B2 Organisation	Pupils learn about the hierarchy of organisation in living things. They learn about structure and function of the heart, lungs, blood vessels and blood and understand how they relate to each other. They also learn about coronary heart disease and relevant treatments. Pupils also learn about different food groups and the digestive system. Finally, they learn about enzymes and investigate factors that affect enzyme activity.
May	P5 Forces and Motion	Pupils learn about the difference between contact and non-contact forces, and the relationship between mass and weight. They also learn how to calculate resultant force. Pupils study the motion of objects including calculating the speed and acceleration of an object. Pupils learn to draw and interpret distance-time graphs and velocity-time graphs. Lastly, they learn about factor's affecting a vehicle's stopping distance.
June	C10 Using resources	Pupils learn about the Earth's resources and sustainability. They study water and water treatment, and investigate the composition of different water samples. At the end pupils learn about the importance of carrying out Life Cycle Assessments on the manufacture of different items.
July	B7 Ecology	Pupils learn about the interdependence of living things within an ecosystem, including identifying biotic and abiotic factors. Pupils carry out sampling of organisms in Clissold Park. They learn about different types of adaptations, food chains and predator-prey cycles. Pupils then go on to learn about how different substances are cycled through ecosystems. Finally, they go on to learn about land use, waste management, biodiversity and the impact of climate change on ecosytems.