

Science Phase One Curriculum

Overview:

By the end of phase 1 we would like students to have a broad and balanced knowledge of several key topics, that both encourages students to explore and understand the world around them. The curriculum aims to encompass all of the national curriculum and follow a spiral structure, constantly building upon previous knowledge in order to reinforce understanding at a deeper level. We wish students to develop into confident, resilient and reflective learners who enjoy science and move on and up to be successful at GCSE. We ensure that we also prepare students in both practical and mathematical skills, in order for them to fully access the curriculum and explore investigations scientifically.

Content:

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	<p>Biology - The differences between species, how cells build up to organisms and how to use a microscope</p> <p>Chemistry – How we experiences different states of matter and how it is all built up of atoms, compounds and mixtures.</p>	<p>Biology – Our digestive system, the effects of a healthy diet, and how a bad diet can impact health.</p> <p>Chemistry – Introduction to the periodic table of elements, and the chemical and physical properties of those elements.</p>	<p>Biology – The role of diffusion in the body. Gas exchange in the lungs and the effects of smoking and lung damage.</p> <p>Chemistry – An introduction to basic chemical reactions, how we represent them and the different types.</p>	<p>Biology – The structure and function of the skeleton, including joints and looking in depth at the heart.</p> <p>Chemistry – We discover what the Earth is made out of and we look in detail at the rock cycle.</p>	<p>Biology – We look at flowers, plants and their importance to us.</p> <p>Chemistry – In this topic we look in depth at acids, alkali and neutralisation.</p>	<p>Biology – In this topic we look at reproduction, including the menstrual cycle, gestation and birth. We also compare plant and animal reproductive methods.</p> <p>Chemistry – We recap and build upon our work with the periodic table further investigating properties.</p>

	<p>Physics – How we experience forces, moments and how we measure them.</p>	<p>Physics – How we experience speed, motion and how we measure and record the speed of objects.</p>	<p>Physics – How we experience gravity. Measuring weight as a force, mass and the effect of mass on different planets.</p>	<p>Physics – In this topic we take a detailed look at magnets and their effects. We also look into space and the structure of our solar system</p>	<p>Physics – We look at waves and their effects in mechanical situations, such as sound, water and other vibrations.</p>	<p>Physics – We continue with the theme of waves however now we compare them to electromagnetic waves.</p>
<p>Year 8</p>	<p>Biology – We learn about respiration, both anaerobic and aerobic, and the impact of exercise and smoking.</p> <p>Chemistry – Here we recap on chemical reactions, both endothermic and exothermic.</p> <p>Physics – In this topic, we learn about fuels, energy resources as well as looking at domestic fuel bills and costs.</p>	<p>Biology – In this topic, we look at the leaves and how they are adapted for photosynthesis.</p> <p>Chemistry – Here we look at elements compounds and mixtures in greater detail, as well as a variety of separation techniques.</p> <p>Physics – We look at the particle model including its limitations, as well as chemical and physical changes.</p>	<p>Biology - The roles of polymers and monomers in the context of food, carbohydrates, proteins, and fats.</p> <p>Chemistry – We look in depth at the composition of the atmosphere and the carbon cycle.</p> <p>Physics – In physics this term we look at the transfer of thermal energy as well as the different types of energy stores.</p>	<p>Biology – We look at food chains, webs and the interdependence of organisms.</p> <p>Chemistry – at this point we look at the reactivity series and how we use of carbon to refine metals.</p> <p>Physics – In physics we look at series and parallel circuits, and the relationship between current voltage and resistance.</p>	<p>Biology – We look at the discovery of Watson, Crick and Franklin. DNA mutations, and the importance of gene banks.</p> <p>Chemistry – In this topic we discover the properties of gases and their application.</p> <p>Physics – We look at the mechanics of the eye and the interactions of light, colour and reflection.</p>	<p>Biology – Finally we look at animal and bacterial cells and how they build to tissues and organs.</p> <p>Chemistry – In chemistry we recap and build on word equations, reactions and products.</p> <p>Physics – And finally in physics we look at interacting forces, energy transfers and work done.</p>