Year 7 Science Curriculum

Autumn Term	Spring Term	Summer Term
Autumn 1	**Spring 1**	**Summer 1**
Introduction to Science • Lab rules • Safety risks and hazards • Measurements and units • The Bunsen burner **ORGANISMS** **Cells** • Animal and plant cells • Exploring cells - Using the microscope • Tissues, organs and organ systems • Adaptation of cells • Prokaryotes and Eukaryotes **Movement** • Human skeleton • Muscles and joints • Problems with the skeletal system • Antagonistic muscles **MATTER** **Particle Model** • Using particles to explain matter • Understanding solids	**ORGANISMS** **Digestion** • Unbalanced diets • Effects of diet on health • Digestive system • Roles of digestive organs **REACTIONS** **Metals and non – metals** • Using metals and non-metals • Exploring reactions of metals with acids • Investigating reaction of metals with acids • Understanding displacement reactions • Understanding oxidation reactions • Investigating oxidation reactions **ELECTROMAGNETS** **Voltage and Resistance** • Describing electric circuits • Understanding energy in circuits • Explaining resistance • Describing series and parallel circuits	**ORGANISMS** **Inheritance** • Understanding the nature of genetic material • Modelling inheritance • Understanding variation **Reproduction** • The menstrual cycle. **REACTIONS** **Acids and alkalis** • Exploring acids • Exploring alkalis • Using indicators • Exploring neutralisation • Investigating neutralisation **WAVES** **Sound** • Exploring sound • Describing sound • Exploring sound systems • Hearing sounds • Understand how sound travels through materials

• Understanding liquids and gases • Exploring diffusion • Changes of state	• Comparing series and parallel circuits	• Learning about the reflection and absorption of sound **Light** • Exploring the properties of light • Exploring reflection • Exploring refraction • Seeing clearly • Exploring coloured light
Autumn 2	**Spring 2**	**Summer 2**
Separating Mixtures • Introducing separating mixtures • Exploring solutions • Understanding distillation • Explaining chromatography **FORCES** **Speed** • Describing forces • Understanding speed • Describing journeys with distance – time graphs • Exploring Journeys • Investigating motion of a car • Understanding relative motion **Gravity** • Understanding forces • Understanding gravitational fields • Understanding mass and weight	**Current** • Investigating static charge • Explaining static charge • Understanding electric fields circuits	**ECOSYSTEMS** **Interdependence** • Understanding food webs • Understanding the effects of toxins in the environment • The importance of insects and ecological balance **EARTH** **Earth Structure** • Understanding the structure of the Earth • Exploring igneous rock • Exploring sedimentary rock • Exploring metamorphic rocks • Understanding the rock cycle

• Understanding gravity		

Year 8 Science Curriculum

Autumn Term	Spring Term	Summer Term
Autumn 1	**Spring 1**	**Summer 1**
Plant Reproduction • Exploring flowering plants • Exploring the anatomy of a plant • Importance of insects and ecological balance • Exploring flowering plants • Exploring fertilization • How seeds are dispersed • How fruits disperse seeds • Investigation into the effect of sugar concentration on pollen tubes **Periodic table** • Looking at the periodic table of elements • Exploring metals in the periodic table • Exploring non-metals in the periodic table • Investigation into metals and non-metals • Analysing wider patterns in the periodic table	**Breathing** • Understanding how breathing works • Measuring breathing • Exploring gas exchange in humans **Elements** • Combining elements • Comparing elements and compounds • Exploring polymers • Exploring ceramics and composites **Magnetism** • Magnetic fields • Magnetic attraction and repulsion • Explaining electromagnets • Using electromagnets • Investigating the strength of electromagnets	**Universe** • Describing stars and galaxies • Explaining the effects of the Earth's motion • Exploring our neighbours • Using models in science

Autumn 2	Spring 2	Summer 2
Energy transfer • Understanding energy transfer • Comparing rates of energy • Getting the electricity we need • Energy stores and transfers • Exploring energy transfers • Understanding potential and kinetic energy • Understanding elastic energy **Energy costs** • Looking at the cost of energy in the home • Using electricity responsibly	**Respiration** • Understanding aerobic respiration • Exploring respiration in sport • Understanding anaerobic respiration • Investigating fermentation • Comparing aerobic and anaerobic respiration **Climate** • Understanding our atmosphere • Understanding how carbon is recycled • Exploring how humans affect the carbon cycle • Understanding global warming • Project on global warming **Heating and cooling** • Explaining thermal energy • Heating • How to stop energy from travelling • Energy and temperature	Revision of topics covered in year 7 and 8 Scientific enquiry projects Biology Chemistry Physics Understanding variables Understanding Graphs Interpreting graphs Maths in science

Year 9 Science Curriculum

Autumn Term	Spring Term	Summer Term
Autumn 1	**Spring 1**	**Summer 1**
Genes • Introducing genes • Explaining natural selection • Understanding the importance of biodiversity • Explaining extinction • Understanding the nature of genetic material • Exploring the role of chromosomes • Understanding variation • Modelling inheritance **Wave properties** • Exploring Light • Comparing transverse and longitudinal waves • Exploring waves **Pressure** • Exploring pressure on a solid • Exploring pressure in a fluid • Calculating pressure • Explaining floating and sinking	**Electromagnets** • Forces and fields • Using ideas about fields • Investigating electromagnetism • Using electromagnets • Investigating the strength of electromagnets **Types of reaction** • Exploring combustion • Exploring the use of fuels • Experiment investigating the products of combustion • Thermal decomposition • Investigating the products of thermal decomposition • Understanding thermal decomposition • Explaining changes	**Begin GCSE units m Paper 1 topics** **Biology – Cell structure and transport** **Chemistry – Atomic structure** **Physics - Energy**
Autumn 2	**Spring 2**	**Summer 2**

Work • Doing work • Making work easier **Chemical energy** • Understanding exothermic reactions • Comparing exothermic and endothermic changes • Investigating exothermic reactions • Explaining the use of catalysts	Review KS3 units Assessmen	