

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2
Topic (s)	70 Introduction to Science	7A Cells and living systems	7B Particles	7C Forces and motion	7D Diet and health	7E Acids and alkalis	7F Energy	7G Reproduction and growth	7H Scientific enquiry		
Topic Objectives	Identify and name scientific equipment. Understand the meaning of hazard symbols and the basic safety rules in the lab. Introduction to the idea of variables and investigations.	To know and understand the basic structure of animal and plant cells. To know the names of some major human organs and organ systems.	To understand and use the particle model to represent solids, liquids and gases and to explain their behaviour. To be able to name the changes of state.	To be able to name the forces acting on an object and describe their effect on the shape and movement of the object.	To understand the content of a healthy diet, how food is digested and the effects of recreational drugs. Discuss healthy choices and empower students to make them by teaching them about food labels. (RRS)	To understand that not all chemicals are acids and not all acids are hazardous. Describe neutralisation reactions and their importance in everyday life.	To know about different energy resources. To understand that energy is needed to generate electricity and the advantages and disadvantages of different energy resources. (RRS)	Describe the differences between sexual and asexual reproduction. Understand the effect of maternal lifestyle on the foetus through the placenta. (RRS)	Start developing lines of enquiry, making predictions and collecting evidence to test them.		
Acquired Knowledge / Skills	Draw and label diagrams for simple experiments. Start naming variables in investigations and posing questions that can be investigated. <b>Measure and record temperatures, start analysing results, calculating means and drawing simple graphs.</b>	Describe cells role as building blocks of organisms. Describe the function of the human skeleton and how movement is brought about via joints and muscles. Explain how different cells are adapted for different functions. <b>Use of microscope</b>	Draw particle diagrams for solid, liquid and gas. Describe the separation techniques that can be used to change mixtures into pure substances. Explain observed behaviour of solids, liquids and gases in terms of the arrangement of their constituent particles. <b>Simple distillation. Chromatography</b>	Recall the names of some contact and non contact forces. Draw and annotate force diagrams. Calculate speed from distance and time. Interpret distance-time graphs. <b>Measure distance and time to calculate speed. Use Newton meters to measure forces.</b>	Recall the names of main nutrients and what foods are sources of them Describe the function of each nutrient in the body. Name the organs in the digestive system and describe their function. <b>Food tests: testing foods for sugar, protein and fat.</b>	Recall names of some everyday acids and alkalis and the meaning of hazard symbols. Relate the pH scale to the strength of acidity and alkalinity and to the hazards of acids and alkalis. Introduction to word and symbol equations. <b>Use of indicators to measure acidity or alkalinity and pH</b>	Describe simple energy transfers and energy resources with a particular focus on heating and cooling. Calculations involved with energy transfer including work done, power and the costs of domestic electricity. <b>Measuring temperature changes (calorimetry)</b>	Recall structure and function of the human male and female reproductive systems, in humans and plants. Describe wind and insect pollination, fertilisation, seed and fruit formation and dispersal. Describe variation between individuals within a species. <b>Dissection of a flower.</b>	Start identifying independent, dependent and control variables. make and record observations and measurements Identify anomalous results. Draw conclusions based on evidence and describe patterns linking two variables.		
Practical skill											
Target Vocabulary	Equipment Diagram Hazard Risk Variable Mean Line graph Bar graph Results table Conclusion	Nucleus Cell membrane Cytoplasm Cell wall Chloroplast Vacuole Tissue Organ Organ system Microscope	Particle Solid Liquid Gas Condense Freeze Evaporate Melt Pressure Diffusion	Force Speed Distance Gravity Contact Balanced Unbalanced Newton Upthrust Air resistance	Nutrient Protein Carbohydrate Fat Vitamin Mineral Fibre Diet	Acid Base Alkali Salt Neutralisation pH scale Indicator Hazard Corrosive Irritant	Transfer Conservation Resource Fuel Conduction Convection Radiation Heat Temperature	Egg Sperm Fertilise Sexual Asexual Pollen Ovule Pollination Stigma Stamen	Plan Analyse Evaluate Risk assessment Independent variable Dependent variable Control variable Prediction Conclusion		
Assessment		7A Key assessed task: Cell sizes (analysis)	7B Key assessed task: Does temperature affect the rate of diffusion? (analysis).	7C Key assessed task: speed of a solid falling through a liquid (analysis).	7D Key assessed task: enzyme (amylase) (analysis).	7E Key assessed task: neutralisation (analysis)	7F Key assessed task: comparing the energy content of different fuels (analysis)	7G Key assessed task: seed dispersal (analysis).			
	Baseline test A		End of term 1 test		End of term 2 test		Baseline test		End of term 3 test		

Note: due to restrictions regarding practical resources, different classes will cover the topics for each term in different order. All classes will have covered the same content by the end of each term.