

	Chapter	Content	Knowledge	Skills	Key Questions	Assessment	Literacy/numeracy	SMSC
Autumn	B1	Cell Biology: Eukaryotic and Prokaryotic Cells Plant and Animal Cells Specialised Cells Transport across cells	Chapter B1 Knowledge: Knowing what cells look like under a light microscope and comparing what we can see under an electron microscope. Recalling the differences between plant and animal cells and learning how to organise cells into prokaryotes and eukaryotes. Learning how to calculate order of magnitude to appreciate size. Compare and contrast diffusion, osmosis and active transport.	Biology: To use a microscope to examine cells To be able to carry out calculations involving magnification, real size and image size To be able to calculate the order of magnitude and express answers in standard form Qualitatively test for the presence of different food molecules in a variety of foods	Biology: What are the differences between Eukaryotic and Prokaryotic Cells? How big are cells?	Diagnostic test on B1 ReACT tasks B1 End of Chapter Test	Biology: Key words: organelle, cell, diffusion, osmosis, active transport, microscope, membrane, specialised Numeracy: Calculating magnification and order of magnitude Key words: division, differentiation, somatic, meristem, cloning, tissue, organ, organ system, organism, carbohydrate, lipid, protein, digestion	Understand how microscopy techniques have changed over time and lead to recent developments. Working together to complete practicals safely.
	C1	Atomic Structure: Structure of the Atom Chemical Equations Separating Mixtures Fractional Distillation and Chromatography History of the Atom Ions and Isotopes	Why atoms have no overall charge Understanding the differences between different atoms. Knowing how to calculate the number of different sub-atomic particles. Learning how to balance equations Appreciate how the model of the atom has evolved over time to lead to the modern atom. Knowing the differences between atoms and ions. Understanding how to separate different liquids by different methods.	Identifying different variables Confidence to carry out practicals Writing risk assessments. Recording data in a table. Evaluate the different models of the atoms and why they are replaced over time. Using SI Units and Standard form	How do different types of atoms differ from each other? How do Scientists carry out and document research?	C1 Diagnostics Test C1 End of Chapter Test C1 ReAct Tasks	Chemistry: Keywords: element, atom, groups, compounds, nucleus, electrons, reactants, products, equations, balanced, state symbols, solutions, aqueous, filtration, distillation, crystallisation, chromatography, atomic number, mass number, proton, neutron, ion, isotope, shells Numeracy: Balancing Equations, using standard form and calculation of number of subatomic particles.	Appreciating how the model of the atom has changed over time. Working together to complete practicals safely.
	P1	Conservation and Dissipation of Energy: Changes in Energy Stores Conservation of Energy Energy and Work Energy Dissipation Energy and Efficiency Electrical Appliances Energy and Power	Stating the forms energy can be stored in, explain how energy is transferred from one form to another. Understand the principle of conservation of energy and apply it to situations. Calculate efficiency in differing situations. Understand how to calculate amounts of energy, power and work done with units.	To recall and apply correct scientific knowledge To qualitatively be able to compare and contrast advantages and disadvantages of renewable and non-renewable energy resources	What are the different forms of energy store and transfer? What is the law of conservation of energy and how is it applied? What is efficiency and how can you find the efficiency of a device? How do power and energy relate?	Diagnostic test on P1 ReACT tasks P1 End of Chapter Test	Key words: Energy Store, Work done, Spring Constant, Gravitational Potential Energy, Kinetic Energy, Dissipated, Efficiency Numeracy: Calculating percentages, drawing and interpreting graphs and using equations.	Appreciating how the model of the atom has changed over time. Working together to complete practicals safely.
Spring	B2	Cell differentiation and specialisation: The Cell Cycle Cell division Cell differentiation Stem cells Therapeutic cloning	Knowing the importance of cell differentiation. Describe mitosis and why it is important in cells. Evaluate the use of stem cells. Know the process of therapeutic cloning.	Modelling cell division Evaluate the use of embryonic vs. Adult stem cells and create a well balanced argument. Qualitatively test for the presence of different food molecules in a variety of foods	Why do cells divide? How can stem cells be used in human medicine?	Diagnostic test on B2 ReACT tasks B2 End of Chapter Test	Key words: division, differentiation, somatic, meristem, cloning, tissue, organ, organ system, organism, carbohydrate, lipid, protein, digestion Numeracy: Interpreting data and graphs, calculating percentage, drawing graphs	
	C2	The periodic Table Content: Development of periodic Table Electronic Structures and the Periodic table. Group 1 Group 7	How the periodic table developed over time. How testing a prediction can support or refute new scientific ideas. How atomic structure is linked to the periodic table. How elements behave in different groups and how these properties change as we go down the group The difference between transition metals and alkali metals.	Evaluate the different models of the periodic table. Linking the properties of different atoms to their position on the periodic table. Writing balanced equations	Why was the periodic table such a significant science breakthrough?	C2 Diagnostic Test C2 End of Chapter Test C2 ReAct Tasks.	Keywords - Alkali, pH, universal indicator, halogens, displacement, transition, properties. Numeracy: Balancing equations	Understanding why the periodic table came about. Understanding why the periodic table was a scientific breakthrough.
	P2	Energy Transfers: Conduction Infrared Radiation Specific Heat Capacity Heating and Insulating Buildings	Required Practical: Investigating Thermal Insulators Define infrared radiation and thermal conductivity. Explain what specific Heat capacity and how it is calculated by calculation or via a practical. Describe how heat is lost through a home and how this can be prevented	To be able to use and read a thermometer correctly To be able to use a stopwatch accurately and effectively To be able to record scientific data accurately in a table To use an equation- in this case the specific heat equation. When doing this to use correct units and make conversions if required To memorise stores and transfers of energy and interpret how energy has been converted in an interaction. To memorise and be able to apply one of three equations taught in the chapter To be able to rearrange one of the equations used in class and then calculate a property.	What is conduction? Where does it occur? What is infrared, how is the transfer of energy by this method useful? How can heat transfer be reduced or increased?	Diagnostic test on P2 ReACT tasks P2 End of Chapter Test	Key words: Thermal conductivity, Infrared Radiation, Specific Heat Capacity. Numeracy: Calculating specific heat capacity, interpreting data, using equations and drawing graphs	Understanding the importance of insulation oh houses.
	P3	Energy Resources: Energy Demands Renewable Resources Non-Renewable Resources Energy and the Environment	Describe how energy demands change throughout the day and how these needs can be met. Name types of renewable and non-renewable energy and when their use is appropriate. Describe the energy transfers within each.	To memorise stores and transfers of energy and interpret how energy has been converted in an interaction.	What are non renewable energy resources? How are they utilised? Why has their use become unsustainable? What are the alternatives to non-renewable energy and what are the pros and cons of each method? How can we use the above resources to meet demand?	Diagnostic test on P3 ReACT tasks P3 End of Chapter Test	Key words: Biofuel, carbon-neutral, reactor core, geothermal energy, renewable, non-renewable, Nuclear fuel Numeracy: interpreting data, using equations and drawing graphs	Appreciate the importance of renewable energy.

