

	Timing	Unit	Core Context	Core Objectives	Key Skills
	Sept	Intro	Lab Rules Lab Safety Key Apparatus	Pupils will: <ul style="list-style-type: none"> • learn about the science department expectations • learn about the lab safety rules • name and use key equipment • identify hazards 	Lab Safety Measurement techniques Identifying hazards and writing simple risk assessments
1	Sept – Nov	Autumn	Cells and movement Particle model Universe	Pupils will: <ul style="list-style-type: none"> • learn that cells are the basic units of life and are organised into tissues from which organs are made • explore cell structure and differences between plant and animal cells • learn that life also exists as simple, unicellular organisms. • explain the properties of solids, liquids and gases based on the arrangement and movement of their particles • explain changes in state • describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun • explain why places on the Earth experience different daylight hours and amounts of sunlight during the year • explain the choice of particular units for measuring distance 	Using microscopes Using bioviewers Models of cells Use models to investigate The relationship between the properties of a material and the arrangement of its particles Relate observations of changing day length to an appropriate model of the solar system

2	Nov – Feb	Winter	<p>Human reproduction and plant reproduction</p> <p>Separating mixtures</p> <p>Electricity</p>	<p>Pupils will:</p> <ul style="list-style-type: none"> • extend their earlier ideas about human reproduction and consider how offspring are protected and nurtured • consider and compare reproductive patterns in other animals with those in humans • relate what they know of the way their bodies change during adolescence to knowledge about human reproduction, growth and the menstrual cycle • plant reproduction • devise ways to separate mixtures based on their properties • explain how substances dissolve using the particle model • use evidence from chromatography to identify unknown substances in mixtures • consolidate and extend their ideas about circuits • use concepts of electric current and energy transfer to explain the working of circuits • explain patterns in the measurements of current and voltage • use the concept of resistance qualitatively • build circuits in which current flow is usefully controlled • consider the hazards of electricity for humans 	<p>Comparing reproductive patterns in other animals with those in humans</p> <p>Observing chemical reactions</p> <p>Practical Techniques, including</p> <ul style="list-style-type: none"> • Filtration • Chromatography • Distillation <p>Observing reactions</p> <p>Building and taking measurements from series and parallel Circuits</p>
3	Feb – May	Spring	<p>Types of reaction</p> <p>Contact forces and gravity</p> <p>Energy costs and energy transfer</p>	<p>Pupils will:</p> <ul style="list-style-type: none"> • know that combustion is a reaction with oxygen and thermal decomposition is a reaction where the reactant is broken down using heat. • explain observations about mass in a chemical or physical change • describe how materials behave as they are stretched or squashed • describe what happens to the length of a spring when the force on it changes • describe factors which affect the size of frictional and drag forces • explain the way in which an astronaut’s weight varies on a journey to the moon • be introduced to the concepts of energy stores and energy transfers • consider the nature and origin of fossil fuels and renewable sources of energy and how their use has implications for the environment • consolidate and extend their ideas about energy resources for living things: food for people and sunlight for plants • link the energy resources to the role of the Sun as the ultimate source of most of the Earth’s energy resources 	<p>Observing chemical reactions</p> <p>Sketch the forces acting on an object and label their size and direction</p> <p>Practical Investigation</p> <p>Data Analysis</p> <p>Scientific writing skills</p>

4	May - Jul	Summer	<p>Variation</p> <p>Acids and alkalis</p>	<p>Pupils will:</p> <ul style="list-style-type: none"> • explore variation within and between species • consider why classification is important and are introduced to scientific classification of animals • investigate patterns of variation in living things and ways of representing and explaining the occurrence of variations • learn about acids and alkalis as classes of chemicals with distinct properties and uses • use indicators to classify solutions as acidic, alkaline or neutral • use the pH scale to compare the acidity and alkalinity of different solutions • begin to explore neutralisation 	<p>Investigating patterns of variation</p> <p>Use of indicators</p>
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