Walkwood Church of England Middle School

Science

	Wk	Year 7 — 6 lessons per fortnight		
		Topic	**Learning Content**	**Assessment**
Autumn - *rotation*	1	**States of matter**	Apply the particle model when considering states of matter. Explain diffusion. Connect gas pressure to the particle model. Investigate mixtures, solutions, solubility, filtration, evaporation, distillation and chromatography. *Vocabulary:* Particle, element, atom, mixture, compound, periodic table, diffusion, concentration, pressure, solution, solvent, solute	
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	5			End of Topic Test
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	7	**Ecosystems**	Recognise specialised cells under a microscope. Explain how uni-cellular organisms are adapted. Describe predator prey cycles Using food webs and chains, explain effects of environmental changes. *Vocabulary:* Mitochondria, membrane, nucleus, vacuole, cytoplasm, surface area, nutrients, minerals.	
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	9			End of Topic Test
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	11	**Sound and light**	Explain how sound is made, transmitted, absorbed and reflected. Explain how light is made, transmitted, absorbed and reflected. Investigate how light passes through transparent materials: refection and dispersion. *Vocabulary:* Transmit, absorb, reflect, refract, disperse, opaque, translucent, transparent.	
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	14			End of Topic Test
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Spring - *rotation*	1	**Skeletal system**	Apply ideas of cells and their adaptations. Explain how the skeleton relates to its function and movement. Explain why some organisms need organ systems. *Vocabulary:* Skeletal, muscle, tendon, ligament, antagonistic, relax, contract, organism.	Autumn Term Assessment
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	3			End of Topic Test
	4	**Acids and alkalis**	Describe reactions with a word equation and particle diagrams. Litmus and UI as indicators. Identify the best indicator. Explain neutralisation reactions. *Vocabulary:* Acid, alkali, neutralisation, acidic, alkaline, sulphuric, hydrochloric, litmus, universal indicator.	
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	7			End of Topic Test
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	9	**Voltage, current, and resistance**	Investigate, voltage, current and resistance in a simple circuit. Calculate resistance. Investigate the strength of electromagnets. Examine and construct electrical energy transfers diagrams. *Vocabulary:* Resistance, ohms, electromagnet, core, repeatability, dissipated, transfer.	
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	11			End of Topic Test
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Summer - *rotation*	1	**Plant reproduction**	Identify parts of the flower and link their structure to their function. Describe plant reproduction. Explain why seed dispersal is important. *Vocabulary:* Carpel, anther, stigma, style, stamen, pollen, ovum, ovary, fertilisation, pollination	Spring Term Assessment
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	3			End of Topic Test
	4	**Human reproduction**	Know the organs of female and male that are involved. Explain how a foetus develops. Consider changes as a child grows into adulthood. Describe causes of low fertility. *Vocabulary:* Penis, vagina, ovary, testis, adolescence, fertilisation, foetus, contractions, cervix.	
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	6			End of Topic Test
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	8	**Forces and speed**	Explain balanced and unbalanced forces Discover the effects of forces Calculate speed. Discover how friction and drag affect an object, including factors that affect the size of frictional or drag forces. *Vocabulary:* aerodynamic, downforce, equilibrium, constant speed, acceleration, deceleration	
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	10			End of Topic Test
	11			End of year test
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Year 8 — 6 lessons per fortnight		
Topic	**Learning Content**	**Assessment**
Photosynthesis	Describe how plants obtain resources. Explain the term producer. Sketch line graphs to show how the rate of photosynthesis. Use a word equation for photosynthesis. *Vocabulary:* Photosynthesis, chlorophyll, chloroplasts, cell wall, diffusion, nutrients, absorb, constant, limiting factor.	
		End of Topic Test
Elements and compounds	Know how symbols and atomic numbers are used in the Periodic Table. Assess the relative reactivity of metals. Name compounds using their chemical formulae. Given chemical formulae, name the elements present and their relative proportions. *Vocabulary:* Elements, compounds, mixtures, bonded, reactivity series, formulae, alkali metals, transition metals.	
		End of Topic Test
Inheritance	Explain the causes of extinction. Consider the theories of survival of the fittest and natural selection. Explain the importance of bio-diversity. *Vocabulary:* Inherit, traits, characteristics, genes, deoxyribonucleic acid, fertilisation, adaptations, Darwin, survival of the fittest, natural selection.	
		End of Topic Test
Contact and non-contact forces	Describe factors which affect the size of forces. Explain 'equilibrium'. Use diagrams to explain observations of pressure in fluids. Explain why objects either sink or float. Draw magnetic field strength and describe force interactions. Explain how a compass works. Know how to generate static forces and how they interact. *Vocabulary:* Forces, equilibrium, pressure, stress, equation, millibars, atmospheric pressure, pascals, positive charge, negative charge , attract, repel.	Autumn Term Assessment
		End of Topic Test
Digestion and respiration	Explain adaptations of the gas exchange system. Explain changes to breathing rate and volume. Explain how we breathe and factors that affect this. Use word equations to describe aerobic and anaerobic respiration. Describe healthy and unhealthy diets. Describe adaptations in the digestive system. *Vocabulary:* Gas exchange, alveoli, bronchi, circulation, trachea, inflate, deflate, respire, malnutrition, obesity, underweight.	
		End of Topic Test
Heating and cooling	Describe how an object's temperature changes over time when heated or cooled. Define the three forms of heat transfer by word and diagram. Explain how a method of thermal insulation works. *Vocabulary:* Increase, decrease, line graph, curve, latent heat, radiation, convection, conduction, expand, insulation, energy transfer.	Spring Term Assessment
		End of Topic Test
Chemical energy	Investigate exothermic and endothermic reactions. Explain why a reaction is an example of combustion or thermal decomposition. Use a diagram of relative energy levels during a change of state. *Vocabulary:* Exothermic, endothermic, combustion, decomposition, sublimation, latent heat, freezing point.	
		End of Topic Test
		End of year test