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Principal: Mrs C Stanyer

Subject: Science

Year 9 Curriculum Map 2024 - 25

Week Commencing	Topic (including links to additional resources)	Assessment Window
Staff INSET 02/09 Students Return 03/09	Ecology 2 (7 lessons) <ul style="list-style-type: none"> Define the term distribution of a species. State examples of factors that will determine the distribution of a species. Suggest how human activities are affecting the distribution of a species. Recall the meaning of consumer and producer. Construct pyramids of biomass. Explain why energy is lost in a food chain. 	
09/09/2024	<ul style="list-style-type: none"> State what is meant by farming. Give examples of farmed resources. Evaluate the efficiency of farming meat (food chains). Compare farming techniques. State what is meant by agriculture. Evaluate the impact of modern farming techniques on yield. Suggest why crop rotation is important. 	
16/09/2024	<ul style="list-style-type: none"> State what is meant by human food security. Evaluate the use of intensive farming techniques. State what is meant by the water cycle. Describe the water cycle. Explain the impact of human activities on the water cycle. Recall what is meant by an adaptation. Relate adaptation to function for a variety of extinct animals. Link the main changes in earths evolution to the change in adaptations of plants. 	Learning Checkpoint
23/09/2024	Photosynthesis and Respiration 2 (9 lessons) <ul style="list-style-type: none"> State what is meant by a producer. State the reactant and products of photosynthesis. Describe the process of photosynthesis. Give examples of how plants are adapted for photosynthesis. Compare the adaptations of plants in different environments. Describe how to test for starch. Describe what a fertiliser does. State what is meant by respiration. State the products and reactants of respiration. Compare aerobic and anaerobic respirations. 	
30/09/2024	<ul style="list-style-type: none"> Write a word equation for aerobic and anaerobic respiration. Investigate the effect of temperature on the rate of respiration (yeast). State what is meant by breathing. Compare breathing and respirations. Describe the process of inhalation and exhalation. 	Learning Checkpoint

Ormiston Meridian Academy is committed to safeguarding and promoting the welfare of children and young people and expects all staff and volunteers to share this commitment.



	<ul style="list-style-type: none"> • Describe the structure of lungs. • Describe how the structure of lungs supports the diffusion of oxygen. • Explain how RBC are adapted for their functions. • Explain the effect of sickle cell anaemia on respiration. • Recall the structure of your lungs. • Explain how smoking affects respiration. • Explain how asthma affects respiration. 	
07/10/2024	Forces and Space 3 (5 lessons) <ul style="list-style-type: none"> • Recall the effect of resultant forces acting on an object. • State what is meant by deformation of an object. • Explain the relationship between force applied and deformation (Hooke's law). • State what is meant by pressure. • Describe the relationship between pressure and depth in a fluid. • Explain the relationship between pressure and upthrust. 	
14/10/2024	<ul style="list-style-type: none"> • Describe the relationship between pressure and atmospheric pressure. • State the unit of measure for pressure. • Apply the equation pressure = force/area. • State what is meant by a moment. • Describe the effect on moments on motion. • Apply the equation that links moment, distance and force. • Explain the relationship between moments and work done. 	Learning Checkpoint
21/10/2024	Buffer	
October Half Term		
04/11/2024	Energy 3 (4 lessons) <ul style="list-style-type: none"> • Recall the 3 thermal energy pathways. • Distinguish between heat and temperature. • Define the term thermal energy. • Describe the factors that affect an objects thermal energy. • Compare the effects of temperature difference on thermal energy transfer. • Interpreting cooling curve data. 	
11/11/2024		Achievement Round 1
18/11/2024		Achievement Round 1
25/11/2024	<ul style="list-style-type: none"> • Define the term work. • Describe the relationship between work done, distance and force. • Apply the equation that links work done, distance and force. • Recall the equation that links work done, force and distance. • Describe how levers/pullies can reduce the amount of work need to complete a function. • Explain why car brakes increase work done. 	Learning Checkpoint
02/12/2024	Cells 3 (12 lessons) <ul style="list-style-type: none"> • Recall the meaning of prokaryotic and eukaryotic • Describe the structure of a bacterial cell • Explain how a bacteria cell is adapted for its function 	
09/12/2024	<ul style="list-style-type: none"> • Recall the structure and adaptations of nerve, muscle, and sperm cells • Describe the structure and adaptations of xylem and phloem tissue • Draw an image as viewed under a LMS. • Use magnification scales to determine object size 	

	<ul style="list-style-type: none"> • Compare light and electron microscopes 	
16/12/2024	<ul style="list-style-type: none"> • State when cell differentiation occurs in animals and plants • Describe the cycle • State what a stem cell is • Give examples of where stem cells can be found in animals and plants • Evaluate the use of STEM cells in medical treatments • Describe how stem cells from plants can be used to produce clones of plants • Explain the process of therapeutic cloning 	
Christmas Break		
06/01/2025	<ul style="list-style-type: none"> • Explain the relationship between joints, tendons and ligaments • Explain the structure of a synovial joint • Evaluate different methods used to improve joint mobility • Recall the definition of diffusion • Explain the factors that affect the rate of diffusion • Describe how the gills, lungs and small intestine support diffusion • Calculate SA to volume ratio • Explain the importance of SA to volume ratio 	
13/01/2025	<ul style="list-style-type: none"> • Define the term osmosis • Investigate the effect of concentration on osmosis in plant tissue • Define the term active Transport • Compare the processes of active transport, osmosis and diffusion 	Learning Checkpoint
20/01/2025	Buffer	
27/01/2025	<p>Reactions 3 (7 lessons)</p> <ul style="list-style-type: none"> • Define the term "combustion". • Describe the energy transfer in a combustion reaction. • Compare the pros and cons of different fuels for different situations. • Justify your choice. • Define the term "thermal decomposition". • Identify examples of thermal decomposition reactions. • Describe how atoms rearrange during this type of reaction. • Describe chemical changes as a model, drawing on ideas about conservation of mass. • Explain why a reaction is an example of combustion or thermal decomposition. <p>Predict the products of the combustion of thermal decomposition, and show the word equation.</p>	
03/02/2025	<ul style="list-style-type: none"> • Recall the rule of conservation of mass. • Describe a simple experiment to prove this rule. • Explain observation about mass change in a chemical reaction. • Recall the arrangement of particles in solids, liquids and gases. • Use particle diagrams to show what happens in a reaction. • Write word equations to describe what happens in a chemical reaction. • Use symbol equations to show what happens in a chemical reaction. • Recall the following reactions with a word equation: -Oxidation -Displacement -Metal-acid. • Devise a general rule for how a set of compounds reacts with oxygen or thermally decomposes. • Describe an experiment to prove the rule of conservation of mass. 	
10/02/2025	<ul style="list-style-type: none"> • Use the mass of a reactant in an equation to determine the mass of a product. • Balance a symbol equation 	Learning Checkpoint

	<ul style="list-style-type: none"> Apply this skill to new problems. 	
February Half Term		
24/02/2025	Electricity 2 (9 lessons) <ul style="list-style-type: none"> Recall the meaning of current Describe the relationship between current and resistance Explain the effect of temperature on current 	
03/03/2025		Achievement Round 2
10/03/2025		Achievement Round 2
17/03/2025	<ul style="list-style-type: none"> Recall the units for resistance, current and pd. Apply $V=IR$ in practical contexts Apply $V=IR$ in theoretical contexts 	
24/03/2023	<ul style="list-style-type: none"> Investigate the relationships between wire diameter and resistance (investigation HSW context) 	
31/03/2025	<ul style="list-style-type: none"> state what is meant by an insulator/conductor investigate the relationship between resistance and the conductivity of a material (Investigation HSW context) State what is meant by a cell Compare the use of cells and batteries Evaluate the increasing use of batteries 	
07/04/2025	<ul style="list-style-type: none"> Justify the statement "batteries determine technological development" recall the meaning of static charge describe everyday situations where the principles of static charge can be used usefully explain the link between static electricity and the evolution of life 	Learning Checkpoint
Easter Break		
28/04/2025	Cells and Organs 4 (15 lessons) <ul style="list-style-type: none"> recall the structure of eukaryotic cells compare eukaryotic and prokaryotic cells. <p>Compare the sizes of different cells and subcellular structures.</p>	
05/05/25	<ul style="list-style-type: none"> Recall the main sub cellular structures in animal cells Recall the additional sub cellular structures in plant cells 	
12/05/2025	<ul style="list-style-type: none"> Describe how cells become specialised and give examples of specialised cells. Describe how cells differentiate, and uses of undifferentiated cells. 	
19/05/2025	<ul style="list-style-type: none"> Describe how microscopy techniques have developed over time. Explain how electron microscopy has increased our understanding of sub cellular structures. 	
May Half Term		

02/06/2025	<ul style="list-style-type: none"> • Calculate magnification, using data about real size and image size. • Describe how cell division occurs by mitosis 	
09/06/2025	<ul style="list-style-type: none"> • Describe how stem cells from embryos can be cloned. • Describe how meristem cells in plants can differentiate into any type of plant cell. • Compare the positive and negative aspects of therapeutic cloning. 	
16/06/2025		Achievement Round 3
23/06/2025		Achievement Round 3
30/06/2025		Achievement Round 3
07/07/2025	<ul style="list-style-type: none"> • Describe how particles are transported by diffusion. • Explain how different factors affect the rate of diffusion. • Calculate surface area to volume ratio 	
14/07/2025	<ul style="list-style-type: none"> • Describe how water can move via osmosis. • Describe the process of active transport • Compare the processes of osmosis, active transport and diffusion. 	Learning Checkpoint
21/07/2025	Buffer	