

<h1>Year 8</h1> <p>Science</p>			
1 Biology (3)	<ul style="list-style-type: none"> • Know the difference between fact and opinion and understand correlation. • Use ideas of aerobic respiration to describe the effect of exercise on breathing and heart rates • Know the function of specific nutrients in the body, and how to show their presence in food • Be able to define ingestion, digestion, absorption and egestion 	<ul style="list-style-type: none"> • Be skilful in creating sentences to show cause and effect • Describe how substances are exchanged between muscle cells and the blood, and the blood and cells in the lungs • Be able to explain the difference between a balanced and an unbalanced diet • Explain how to calculate surface area and explain why this is important in absorbing food 	<ul style="list-style-type: none"> • Know the difference between causation and correlation • Understand how the lungs are adapted for efficient gas exchange and how smoking reduces this exchange. • Explain how different specific types of malnutrition is caused and how these might be treated • Explain in detail how the small intestine is adapted to its various functions.
2 Chemistry (3)	<ul style="list-style-type: none"> • Describe what a chemical formula shows and how chemical formulas are used in equations to show chemical change. • Describe how the periodic table is arranged and how it can be used to find elements with similar properties. • Describe combustion reactions of fuels • Describe some of the problems associated with burning fuels including acid rain and global warming. 	<ul style="list-style-type: none"> • Explain how chemical formulas are used in equations to show chemical change. • Explain where the alkali metals, halogens and noble gases are on the periodic table and describe their properties. • Explain how chemical equations can be used to describe combustion reactions • Explain some of the problems associated with burning fuels including acid rain and global warming. 	<ul style="list-style-type: none"> • Explain how chemical formulas are used in equations to show chemical change. • Identify groups of similar elements in the periodic table and make predictions about what their properties will be. • Write word and balanced symbol equations for combustion reactions. • Evaluate the problems associated with burning fuels including acid rain and global warming.
3 Physics (3)	<ul style="list-style-type: none"> • Recall ways heat energy can be transferred. • Describe how energy transfers can be reduced. • Recall light travels in straight lines and draw diagrams showing this. • Draw simple diagrams to describe reflection and refraction. 	<ul style="list-style-type: none"> • Describe how the particle model explains energy transfers. • Interpret a Sankey diagram. • Describe and explain reflection and refraction. • Explain how objects appear coloured. 	<ul style="list-style-type: none"> • Use the particle model to explain the difference between internal energy and temperature. • Calculate power, efficiency and payback time. • Describe and explain refraction and the use of lenses. • Explain how objects appear coloured and relate to frequency.

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<h1>Year 8</h1> <h2>Science</h2>			
4 Biology (4)	<ul style="list-style-type: none"> Know some ways in which plant cells differ from animal cells, and that the plant kingdom is divided into groups Be able to describe how flowers are used to make seeds and some ways in which these seeds are distributed Lists types of microbes Work safely with microbes 	<ul style="list-style-type: none"> Know how plant cells differ from animal cells, and the names, and some of the features, of the groups of the plant kingdom Explain the adaptations of wind and insect pollinated flowers, and describes how seed dormancy can be broken Explains how types of microbes differ from each other Work safely with microbes and accurately collect data from experiments 	<ul style="list-style-type: none"> Accurately compares animal and plant cells as well as all four groups of the plant kingdom Explains how dormancy in seeds can be broken and uses ideas of enzymes and respiration to explain how seeds germinate. Suggests evolutionary relationships between microbes and animal and plant cells Work safely with microbes, accurately collect data from experiments, and conclude experiments scientifically
5 Chemistry (4)	<ul style="list-style-type: none"> Describe some common properties and uses of metals. Describe some reactions of metals with oxygen, water and acid including corrosion of metals. Describe the properties and uses of sedimentary, igneous and metamorphic rocks. Describe how sedimentary rocks are formed and use ideas about the rock cycle to describe how rocks change over time. 	<ul style="list-style-type: none"> Describe some common properties and uses of metals. Use word equations to describe some reactions of metals with oxygen, water and acid including corrosion of metals. Explain the properties and uses of sedimentary, igneous and metamorphic rocks. Explain how sedimentary rocks are formed and use ideas about the rock cycle to explain how rocks change over time. 	<ul style="list-style-type: none"> Describe some common properties and uses of metals. Write word and symbol equations for the reactions of metals with oxygen, water and acid. Explain what a catalyst is and the problems associated with corrosion. Explain the properties and uses of sedimentary, igneous and metamorphic rocks. Explain how sedimentary rocks are formed and use ideas about the rock cycle to explain how rocks change over time.
6 Physics (4)	<ul style="list-style-type: none"> Describe particle model for solids, liquids and gases and describe changes of state. Describe density with respect to floating and sinking. Recall current model of the solar system. Describe and draw the shape of a magnetic field. 	<ul style="list-style-type: none"> Describe changes of state in relation to temperature. Recall calculation for density. Relate to pressure, floating and sinking. Explain why we have changing seasons in the UK. Describe how gravity affects objects. 	<ul style="list-style-type: none"> Link temperature changes with the particle model, density and pressure. Explain how to predict if an object will float or sink. Describe the Earth's magnetic field and explain the effect on compasses. Explain gravity and link to orbits of satellites; calculate weight.