

# BIOLOGY

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Student year: **Upper 3 (Yr 7)**

Head of Department: **Mrs S Thorne**

## SUBJECT OVERVIEW

This is the first year of a 2 year key stage 3 course. Students learn the knowledge and skills that give a sound foundation for studying Biology to GCSE. The course is divided into six topic-based units.

Subject / Topic	Working Scientifically
<b>Cells and organisms</b> <ul style="list-style-type: none"><li>• Using microscopes</li><li>• Animal and plant cell structure</li><li>• Understanding how cells are organized into multicellular organisms</li></ul>	<p>Students will learn the following skills in the contexts of the topics studied in Upper 3:</p> <ul style="list-style-type: none"><li>• Planning and carrying out scientific enquiries to test predictions.</li><li>• Making measurements and applying mathematical concepts in data analysis. Using tables and graphs.</li><li>• Interpreting observations to draw conclusions. Suggesting possible improvements to investigations.</li></ul>
<b>Animal and plant reproduction</b> <ul style="list-style-type: none"><li>• Structure of reproductive systems</li><li>• Puberty and the menstrual cycle</li><li>• Pregnancy and birth</li><li>• Comparing wind and insect pollinated flowers</li><li>• Fruit and seed formation and dispersal</li></ul>	
<b>Environment and adaptation</b> <ul style="list-style-type: none"><li>• Organisms and their habitat</li><li>• Food chains and webs, cooperation and competition</li><li>• Human effects on the environment</li></ul>	
<b>Variation and classification</b> <ul style="list-style-type: none"><li>• The variety of life</li><li>• Genetic and environmental variation</li></ul>	
<b>Photosynthesis</b> <ul style="list-style-type: none"><li>• The importance of plants</li><li>• Leaf structure and photosynthesis</li></ul>	
<b>Food and digestion</b> <ul style="list-style-type: none"><li>• Healthy eating</li><li>• Food tests</li><li>• The digestive system</li></ul>	

# CHEMISTRY

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Student year: **Upper 3 (Yr 7)**

Head of Department: **Mr I Macdonald**

## SUBJECT OVERVIEW

This is the first year of a 2 year key stage 3 course. Students learn the knowledge and skills that give a sound foundation for studying Chemistry to GCSE. The course is divided into six topic-based units.

Subject / Topic	Working Scientifically
<b>The Particulate Nature of Matter</b> <ul style="list-style-type: none"><li>The properties of the different states of matter</li><li>Changes of state in terms of the particle model.</li></ul>	<p>Students will learn the following skills in the contexts of the topics studied in Upper 3:</p> <ul style="list-style-type: none"><li>Understanding how scientific methods and theories develop over time.</li><li>Planning and carrying out scientific enquiries to test predictions.</li><li>Making measurements and applying mathematical concepts in data analysis. Using tables and graphs.</li><li>Interpreting observations to draw conclusions. Suggesting possible improvements to investigations.</li></ul>
<b>Atoms and Elements</b> <ul style="list-style-type: none"><li>Theories and models</li><li>A brief introduction to the periodic table</li></ul>	
<b>Acids and Alkalis</b> <ul style="list-style-type: none"><li>Defining acids and alkalis in terms of neutralisation reactions</li><li>The pH scale for measuring acidity/alkalinity; and indicators</li></ul>	
<b>Pure and impure substances</b> <ul style="list-style-type: none"><li>Pure substances and mixtures</li><li>Separation techniques</li></ul>	
<b>Simple Chemical reactions</b> <ul style="list-style-type: none"><li>Identifying chemical reactions and gas tests</li><li>Introduction to writing equations</li></ul>	
<b>Compounds</b> <ul style="list-style-type: none"><li>Mixtures and compounds</li><li>Formulae and conservation of mass</li></ul>	

# PHYSICS

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Student year: **Upper 3 (Yr 7)**

Head of Department: **Mr C Ridler**

## SUBJECT OVERVIEW

This is the first year of a 2 year key stage 3 course. Students learn the knowledge and skills that give a sound foundation for studying Physics to GCSE. The course is divided into topic-based units and students develop and apply 'working scientifically' skills throughout the year.

Subject / Topic	Working Scientifically
Energy <ul style="list-style-type: none"><li>• Energy stores and energy transfers</li><li>• Fossil fuels and renewable sources of energy</li></ul>	Students will learn the following skills in the contexts of the topics studied in Upper 3: <ul style="list-style-type: none"><li>• Understanding how scientific methods and theories develop over time.</li><li>• Planning and carrying out scientific enquiries to test predictions.</li><li>• Making measurements and applying mathematical concepts in data analysis. Using tables and graphs.</li><li>• Interpreting observations to draw conclusions. Suggesting possible improvements to investigations.</li></ul>
Forces <ul style="list-style-type: none"><li>• Force interactions</li><li>• Balanced and unbalanced forces</li></ul>	
Motion <ul style="list-style-type: none"><li>• Measuring speed</li><li>• Falling objects</li><li>• Streamlining</li></ul>	
Electricity <ul style="list-style-type: none"><li>• Circuit diagrams</li><li>• Resistance of conductors and insulators</li><li>• Measuring current in parallel and series circuits</li><li>• Switches in parallel and series circuits</li></ul>	