

What are the aims and intentions of this curriculum?

The aim of our Key Stage 3 Science Curriculum is to focus on delivering a curriculum that offers all students the opportunity to discover science through hands on investigation, discussions, enquiring skills, developing debating skills and promoting self-sufficient learners. To develop independent learners and extend the students' repertoire of skills through practical experience that prepares them for life beyond school.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	Breathing and digestion	<p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> Smoking Nutrients Food test Unhealthy diet Digestive system Bacteria and enzymes in digestion Gas exchange Breathing Drugs Alcohol 	<ol style="list-style-type: none"> Write down a question that can be answered scientifically Identify control variables in an investigation Compare your results to someone else's 	<p>Formative assessment: Quizzes, class discussions, projects.</p> <p>Summative assessment: end of topic test. Practical test.</p>
	Elements	<p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> Elements, Atoms Compounds Chemical formulae Polymers 	<ol style="list-style-type: none"> Make and record observations of chemical reactions in a table Identify hazards of working with chemical reaction as well as the correct safety measures to follow. 	

Autumn 2	<p>Periodic table</p> <p>Contact forces and pressure</p> <p>Respiration</p>	<p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> • The Periodic table • Elements in group 1 • Elements in group 7 • Elements in group 0 <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> • Friction and drag, • Squashing and stretching, • Turning forces, • Pressure in gases, • Pressure in Liquids, • Stress on solids. <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit.</p> <ul style="list-style-type: none"> • Aerobic respiration • Anaerobic respiration • Biotechnology 	<ol style="list-style-type: none"> 1. Identify risks and benefits of a course of action 2. Justify a course of action in light of an analysis of risk and benefit 3. Describe the similarities, differences, and uses of models, theories, and laws in science 4. Explain why some people may think that there is some doubt about a scientific theory <ol style="list-style-type: none"> 1. Explain the differences in writing for a scientific journal and a scientific magazine 2. Identify places where writing is not clear, concise, correct, or coherent and explain why 3. Write in a style appropriate for purpose and audience 4. Use scientific vocabulary accurately 5. Give evidence to back up your points <p>Project: Wind Power challenge</p>	<p>Formative assessment: Quizzes, class discussions, projects.</p> <p>Summative assessment: end of topic test. Practical test.</p> <p>One project per term</p>
Spring 1	<p>Photosynthesis</p> <p>Types of reaction and chemical energy</p>	<p>To acquire the knowledge and key scientific terms in the following sub topics of the unit.</p> <ul style="list-style-type: none"> • Photosynthesis • Leaves • Investigating photosynthesis • Plant minerals <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> • Atoms in chemical reactions • Combustion • Thermal decomposition • Conservation of mass 	<ol style="list-style-type: none"> 1. Draw an appropriate graph with a line of best fit 2. Explain the choice of range and interval for measurements 3. Explain what to do if your conclusion does not agree with your prediction 4. Identify hazards of working with chemicals and safety measures that should be followed. 	<p>Formative assessment: Quizzes, class discussions, projects.</p> <p>Summative assessment: end of topic test. Practical test.</p>

	Magnetism	<ul style="list-style-type: none"> • Exothermic and endothermic • Energy level diagrams • Bond energies <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit.</p> <ul style="list-style-type: none"> • Magnets and magnetic fields 		
Spring 2	<p>Electromagnets</p> <p>Evolution and inheritance</p> <p>Climate and Earth resources</p>	<p>To acquire the knowledge and key scientific terms in the following sub topics of the unit.</p> <ul style="list-style-type: none"> • Magnets and magnetic fields • Electromagnets • Using electromagnets <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit.</p> <ul style="list-style-type: none"> • Natural selection • Charles Darwin • Extinction • Preserving biodiversity • Inheritance • DNA • Genetics • Genetic modification <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> • Global warming • The carbon cycle • Climate change • Extraction of metals • Recycling 	<ol style="list-style-type: none"> 1. Write down where scientists publish their work 2. Write down what you need to consider when you look at the source of evidence 3. Judge the reliability of a source and check for bias. <ol style="list-style-type: none"> 1. Identify a claim and the evidence for it 2. Identify the reasoning for a claim 3. Write down your opinion on an issue, and the evidence that supports it. <p>Project: Making a DNA model or Your Project is to design an exercise routine and diet plan that you can present to your Gym members or players.</p>	<p>Formative assessment: Quizzes, class discussions, projects.</p> <p>Summative assessment: end of topic test. Practical test.</p>

<p>Summer 1</p>	<p>Work, heating and cooling</p> <p>Wave effects and wave properties</p>	<p>To acquire the knowledge and key scientific terms in the following sub topics of the unit.</p> <ul style="list-style-type: none"> • Energy, work and machines • Energy and temperature • Energy transfer particles • Energy transfer: radiation and insulation. <p>To acquire the knowledge and key scientific terms in the following sub topics of the unit:</p> <ul style="list-style-type: none"> • Sound waves, water waves and energy • Radiation and energy • Modelling waves 	<ol style="list-style-type: none"> 1. Evaluate results (including random and systematic errors) and suggest how the experiment can be improved. 2. Describe sources of error as systemic or random, and suggest ways to minimise these. 	<p>Formative assessment: Quizzes, class discussions, projects.</p> <p>Summative assessment: end of topic test. Practical test.</p>
<p>Summer 2</p>		<p>Revision – Biology, Chemistry and Physics topics</p>	<p>Project: Make a 3D model of the structure of the earth. Or Design an eco-friendly house which reduces the amount of energy lost</p>	<p>Formative assessment: Quizzes, class discussions, projects.</p> <p>Summative assessment: End of Year exam</p>