

## Year 13

### **Energy transfers in and between organisms**

We explore photosynthesis, respiration, energy and ecosystems.

### **Organisms respond to changes in their internal and external environment**

We explore the response to stimuli, nervous coordination and muscles along with homeostasis.

### **Genetics, populations, evolution and ecosystems**

We explore inherited change, populations, evolution and populations in ecosystems.

### **The control of gene expression**

At cellular level, control of metabolic activities is achieved by which genes are transcribed and translated.

We explore gene expression and recombinant DNA technology.



Knowledge	Attributes / Character	Skills	Experiences
<p>Respiration</p> <p>Photosynthesis</p> <p>Inherited change</p> <p>Energy and ecosystems</p> <p>Populations &amp; evolution</p> <p>Response to stimuli</p> <p>Nervous coordination &amp; muscles</p> <p>Homeostasis</p> <p>Populations in ecosystems</p> <p>Gene expression</p> <p>Recombinant DNA technology</p>	<ul style="list-style-type: none"> <li>• Confidence - Students are encouraged to develop their confidence through communication skills when they are asked to offer their points of view as well as demonstrating their understanding through the use of scientific language to express a point</li> <li>• Organisation - Students are held to high standards and expectations of work throughout studying A-level Biology. This includes them being organised and responsible with their workload.</li> <li>• Resilience - Students need to work on reviewing AS content alongside A Level biology to be prepared for exams in the summer term.</li> <li>• Empathy - Being able to support one another through group work and the challenges of the course. Learning about how different communities in the world live e.g Amish community.</li> </ul>	<p>The skills of Year 12 are continued into Year 13 and built upon further with particular focus on:</p> <ul style="list-style-type: none"> <li>• Being able to select and apply the correct statistical test for a given experiment</li> <li>• Students learn how logarithmic scales are useful within biology and learn how to carry this out when required</li> <li>• Students take more responsibility for the design of their investigations and are encouraged to suggest improvements and make amendments to methods given to them whilst carrying out practicals</li> </ul>	<p>Biology in Action-Warwick</p> <p>Biology Live Midlands to see a range of inspirational scientists and examiner sessions</p> <p>PCR Discovery Day-Think Tank</p> <p>Required practical 9 - Investigating factors affecting respiration in single celled organisms</p> <p>Required practical 7 - Investigating the pigments in leaves</p> <p>Required practical 8 - Investigating the activity of dehydrogenase in chloroplasts</p> <p>Required practical 10 - Investigating simple animal responses</p> <p>Required practical 11 - Determining the concentration of a glucose solution</p> <p>Required practical 12 - Investigating the effect of an environmental factor on the distribution of a species</p>