



## Robert Bloomfield Academy: Key Stage 2 Grade Descriptors – Science



KS2 Expectations	Biology	Chemistry	Physics
Year 6 Secure	<p>Explore why certain animals do not fit neatly in to a specific groups</p> <p>Explain why certain features are less good to use when classifying living things</p> <p>Suggest possible reasons for changes to living things over time</p> <p>Recognise that selective breeding may result in offspring with certain features</p> <p>Give examples of living things that have evolved in different ways depending on habitat eg Darwin's finches</p> <p>Explain how the characteristics of the heart, blood and the blood vessels help them carry out their role.</p> <p>Compare how nutrients are transported around different types of organisms</p> <p>Explain how decisions about lifestyle can affect the quality and length of life.</p>	<p>Explain what is happening to the materials when physical (reversible) or chemical (irreversible) changes occur</p> <p>Explain combustion as an irreversible reaction with oxygen in a word equation.</p> <p>Identify that some materials are more soluble than others</p> <p>Explain why a particular separation technique may be more appropriate for specific materials</p>	<p>Calculate distances using the speed of light.</p> <p>Explain some examples of reflection (including snow blindness).</p> <p>Explain how refraction changes depending on materials using particle theory and the appearance of coloured objects in coloured lights.</p> <p>Explain how sound travels through materials using particle theory.</p> <p>Explain sound waves compared to light waves.</p> <p>Use the idea of sound and light waves to explain earthquakes.</p> <p>Use secondary sources to explain some causes of temporary/permanent deafness</p>
Year 6 Developing	<p>Use similarities and difference in observable features to decide how living things should be grouped</p> <p>Explain why vertain features are useful when classifying organisms eg backbone</p>	<p>Describe some everyday physical or reversible changes</p> <p>Describe some everyday chemical or irreversible changes</p>	<p>Explain how light travels.</p> <p>Accurately explain reflection and refraction using diagrams.</p> <p>Explain what happens when colours combine.</p>

	<p>Use fossils as evidence that living things have changed over time          Recognise that offspring normally vary from each other and their parents          Describe examples of a living thing that has adapted to live in a specific habitat</p> <p>Describe what the heart and blood vessels do          Use diagrams to describe the path of nutrients around the body          Suggest how different things affect the body and a person's actions</p>	<p>Describe how it is the oxygen in the air that is needed for combustion          Describe how some materials in solution may be retrieved          Justify your separation technique with reference to the material selected</p>	<p>Link pitch and loudness to amplitude and frequency.          Explain how to vary pitch and loudness on instruments and how varying these affects the sound.          Explain sound waves using particle model</p>
Year 6 Beginning	<p>Identify the broad groups that living things are classified into          State how plants and animals can be classified using specific characteristics          Recognise that fossils provide information about living things from millions of years ago          Recognise that living things produce offspring of the same kind, but that offspring vary          Identify ways in which certain animals or plants are adapted to their habitat and evolved as a result</p> <p>Name the parts of the circulatory system          Describe what is transported round the body</p>	<p>State what is meant by a physical change          State what is meant by a chemical change          State that if something is going to burn it needs air          Know that some materials will dissolve in liquid to form a solution          Suggest how mixtures may be separated</p>	<p>State what luminous means.          Describe how shadows are formed.          State the difference between opaque, translucent and transparent.          Describe the law of reflection and refraction.          Describe the effect of colour filters.          Describe sounds using pitch and loudness.          Describe some simple experiments that show matter carries sound waves.          Describe the human range of hearing</p>

	Recognise how diet, exercise, drugs and lifestyle affect the body		
Year 5 Secure	<p>Suggest similarities in the life cycles of a number of different vertebrates</p> <p>Suggest why some of the changes that take place in humans happen</p> <p>Compare how different plants reproduce</p> <p>Evaluate how effective the different methods of seed dispersal are</p>	<p>Suggest why a material's properties might influence their selection for a specific use</p> <p>Use test evidence when making these suggestions</p>	<p>Explain why the Sun appears at different points during the year</p> <p>Explain, using a model, why shadows change during a year</p> <p>Using a model, explain why the Moon looks different over a 28 day period</p> <p>Relate the number or voltage of cells to the number and operation of bulbs or buzzers that can be run from them</p> <p>Explain the effect of changing the order of the components in a circuit.</p> <p>Design circuits using symbols</p> <p>Recognise that Gravity acts between all objects of any mass</p> <p>Identify ways in which forces that oppose motion may be useful or non-useful</p> <p>Explain, with reference to everyday objects, why a force multiplier might be useful</p>
Year 5 Developing	<p>Identify similarities and differences in two life cycles</p> <p>Describe the changes as humans develop in to old age</p> <p>Describe in detail how plants reproduce</p> <p>Describe the different methods by which seeds are dispersed</p>	<p>Test and sort materials on the basis of their physical properties</p> <p>Show how some materials can be retrieved from their physical changes</p> <p>Use evidence to justify the material selection based on its purpose</p>	<p>Describe the changes that happen during a day/year using the idea of a rotating earth</p> <p>Describe the rotation of the Earth and Moon around the sun.</p> <p>Describe the changes to the appearance of the moon over a 28 day period</p> <p>Explain how number and voltage of cells affects the lamp or buzzer.</p> <p>Explain the use of switches, how bulbs can be made brighter and buzzers made louder</p>

			<p>Represent a circuit that has been constructed using symbols.</p> <p>Explain gravity makes an object fall to earth Describe how motion may be resisted by named opposing forces Describe how some devices may change the size of a force</p>
Year 5 Beginning	<p>Identify what a life cycle is Identify how people change as they get older Describe how plants reproduce Describe how a plant produces seeds</p>	<p>Compare and group everyday materials on the basis of their appearance and feel Understand that some changes are reversible Give reasons for the use of everyday materials</p>	<p>List the changes that occur in the day and the night State that the Sun, Moon and Earth are roughly spherical in shape State the moon <i>appears</i> to change over a 28 day period</p> <p>Recognise that changing the number and voltage of cells may alter the operation of a circuit. Identify the function and operation of different components. Understand that components can be represented by symbols.</p> <p>Describe the effects of gravity on certain objects Recognise that motion may be resisted by forces Recognise that simple machines transfer force</p>