

### Key Stage 3 Mastery Curriculum for Science

	Core skills to be mastered	Core knowledge to be mastered
Year 7	<ul style="list-style-type: none"> <li>Describe how a scientific idea is being used</li> <li>Make or suggest simple models to state how things are in the real world</li> <li>Identify ways in which scientists have used evidence to develop new theories</li> <li>Use scientific words and ideas to explain simple ideas</li> <li>Identify equipment needed for an experiment/investigation</li> <li>Describe the variables in an investigation</li> <li>State risks within an experiment</li> <li>Form accurate observations or measurements identifying suitable range and intervals</li> <li>Use scientific words correctly when talking about ideas</li> <li>Identify and state what has been found out in an investigation</li> <li>Identify the anomalies within my evidence</li> <li>Identify how an investigation may be improved</li> <li>Use relevant scientific key words correctly in a sentence</li> </ul>	<ul style="list-style-type: none"> <li>Cell structure and different types of cells</li> <li>Hierarchical organisation of cells</li> <li>Introduction to micro-organisms</li> <li>Reproduction, human &amp; plant</li> <li>Relationships within an ecosystem</li> <li>Classification</li> <li>Particulate nature of matter</li> <li>Pure and impure substances and separation techniques</li> <li>Simple chemical reactions</li> <li>Types of fuels</li> <li>Simple forces and motion</li> <li>Simple circuits</li> <li>Space physics</li> </ul>
Year 8	<ul style="list-style-type: none"> <li>Explain the purposes of some scientific processes</li> <li>Use ideas or models to describe how something happens</li> <li>Describe a scientific idea using a simple models</li> <li>Use scientific evidence to support or object to an argument</li> <li>Explain why certain pieces of equipment are right for an experiment</li> <li>Describe possible dependent variables and explain choice for investigation</li> <li>Describe risks within an experiment and how they should be controlled</li> <li>Explain how to deal with things that cause errors so that data can be reliable</li> <li>Describe a valid conclusion based on one piece of evidence</li> <li>Describe scientific reasons for anomalies</li> <li>Use data to describe the suitability of a method and suggest improvements</li> <li>Use relevant scientific key words in a paragraph</li> </ul>	<ul style="list-style-type: none"> <li>The role of diffusion</li> <li>Structure and function of the skeleton</li> <li>Biomechanics including antagonistic muscles</li> <li>Diets including the balance required within and effects caused by an unbalanced diet</li> <li>Health including the positive and negative factors</li> <li>Atoms, elements and compounds</li> <li>The periodic table</li> <li>Chemical reactions</li> <li>Earth and the atmosphere</li> <li>Magnetism</li> </ul>
Year 9	<ul style="list-style-type: none"> <li>Evaluate how a scientific theory is being used in processes/technology</li> <li>Describe and explain in detail how and why things happen using ideas and models from different areas of science</li> <li>Explain how scientists test new ideas</li> <li>Identify whether evidence is being presented in a balanced way</li> <li>Detailed explanation why a method for investigating is the best method</li> <li>Describe key variables in complex investigations</li> <li>Describe risks within an experiment and explain why these should be controlled using suitable sources of information</li> </ul>	<ul style="list-style-type: none"> <li>Plant anatomy and how they survive</li> <li>Photosynthesis in plants</li> <li>Types of respiration</li> <li>Inheritance</li> <li>Environmental and genetic variation</li> <li>Energetics</li> <li>Reactions of metal compounds</li> <li>Energy changes and transfer</li> <li>Types of waves including light, sound, energy</li> </ul>

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	<ul style="list-style-type: none"><li>• Explain in detail, how the choice of method minimises error and can produce accurate and reliable data Use symbols, flow diagrams and different kinds of graphs to represent ideas</li><li>• Use calculations and data to describe a valid conclusion</li><li>• Explain unexpected results and dealing with anomalies</li><li>• Explain how to improve the reliability of evidence</li><li>• Use relevant scientific key words correctly to link scientific ideas together</li></ul>	<ul style="list-style-type: none"><li>• Forces and pressure</li><li>• Electrical resistance</li></ul>
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