

### St. Dominic's School KS2 – KS4 Subject Overview: Science

**Curriculum Intent:** To enable pupils and students with hidden disabilities to be fully included in society is increasingly complex and challenging. Our moral responsibility is to ensure that pupils and students *'achieve ambitious goals and live life to the full'* through a purposeful curriculum that is rooted in our collective knowledge and understanding,

The Science curriculum will provide insight into, and an experience of how, science works, stimulating learners' curiosity and encouraging them to engage with Science in their everyday lives. Pupils and students will learn to see the world in a different way, and be encouraged to think scientifically, understand the applications and implications of science, be able to communicate and collaborate scientific ideas, be able to use investigative approaches and finally work critically with evidence– all skills they need for their next stage of scientific learning, to equip them for success at their GCSEs and to make informed career choices in the future.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Core Values</b>	<b>Myself</b>		<b>My Context</b>		<b>The Wider World</b>	
	I am me Self-Care	I matter Functional Motor and Sensory Skills	I am unique Independent Living Skills	I belong Independent Living Skills	I am safe Personal Safety and Welfare	I am prepared Organisation and Preparation for Work
<b>Functional independence</b>						
<b>Learning to Learn</b>	Self-Managers	Independent Enquirers	Reflective Learners	Team Workers	Effective Participators	Creative Thinkers
<b>Language and communication</b>	Attention, Listening and Understanding	Vocabulary	Narrative Skills	Social Interaction	Social Interaction	Social Interaction
<b>Myself and others</b>	Moral Understanding	Emotional Resilience	Spiritual Understanding	Cultural Tolerance	Citizenship	Social Understanding of the Wider World
<b>Reading</b>	Retelling	Literal questioning	Prediction	Inference	Inference	Evaluation
<b>Writing Y3- 7 GPVS</b>	Combining words, phrases and clauses	Grammatical terms and word classes	Standard English and formality /functions of sentences	Punctuation	Verb forms/tenses and consistency	Vocabulary
<b>Writing Y8-11 GPVS</b>	Sentences and Clauses	Nouns, Verbs and tenses	Adjectives, adverbs and grammar	Possession and Speech	Cohesion, organisation and presentation	Punctuation
<b>Writing Y3-11 Composition</b>	Plan and organise	Narrate and describe	Extend	Summarise	Adapt	Edit and revise
<b>Numeracy Y3-7</b>	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions, Decimals and Percentages	Shape, Space and Measures	Data Handling
<b>Number Y8-11</b>	Number	Algebra	Reasoning, Multiplication and Division	Proportions and Proportional Change	Geometry	Data Handling
<b>KS2</b>	<u>Using investigative approaches</u> I can say what a variable is.  I can spot dangers and risks in everyday situations.  I can name some simple scientific equipment.	<u>Communication for audience and with purpose</u> I can make posters and leaflets to show scientific ideas.  I can describe patterns in results and link this evidence to any question asked.  I can remember key scientific words and descriptions in discussions and written work.	<u>Thinking scientifically</u> I can see differences, similarities or changes related to simple scientific ideas.  I can come up with ideas and explore possibilities.  I can ask questions to extend my thinking.	<u>Collaborating in science</u> I can say why it's a good idea to work together on an experiment.  I can work with another person on an experiment.  I can name some famous scientists and the work they have done to help future scientists	<u>Understanding the applications and implications of science</u> I can name some past scientific work that helps people today.  I can name different technology that helps people.  I know some negative impacts when science is not used to help people	<u>Working critically with evidence</u> I can say when science is used within particular jobs.  I can show simple scientific data in a tables and a bar chart.  I can say how my experiment went

KS3	<p><b><u>Using investigative approaches</u></b> I can recognise the range of variables involved in an investigation and decide which to control.</p> <p>I can identify possible risks to myself, and others, during a scientific experiment.</p> <p>I can select equipment or information sources from those provided to address a question.</p>	<p><b><u>Communication for audience and with purpose</u></b> I can select appropriate ways of presenting scientific data.</p> <p>I can suggest straightforward conclusions from data presented.</p> <p>I can use appropriate scientific forms of language to communicate scientific ideas, processes.</p>	<p><b><u>Thinking scientifically</u></b> I can use scientific ideas when describing simple processes.</p> <p>I can use simple models to describe scientific ideas.</p> <p>I can find scientific evidence that is being used to support or refute ideas or arguments.</p> <p>I can represent things in the real world using simple physical models.</p>	<p><b><u>Collaborating in science</u></b> I can recognise that scientists of all disciplines and nationalities often work together to develop explanations.</p> <p>I can distinguish between opinion and scientific evidence in contexts related to science, and use evidence rather than opinion to support or challenge scientific arguments.</p> <p>I can suggest how collaborative approaches to specific experiments or investigations may improve the evidence collected.</p>	<p><b><u>Understanding the applications and implications of science</u></b> I can describe some benefits and drawbacks of scientific developments.</p> <p>I know decisions about the use and application of science and technology are influenced by society and individuals</p> <p>I can understand how scientific or technological developments may affect different groups of people in different ways</p>	<p><b><u>Working critically with evidence</u></b> I can identify patterns in data presented in various formats, including line graphs</p> <p>I can use scientific and mathematical data when communicating information or ideas Identify scientific evidence they have used in drawing conclusions</p> <p>I can suggest improvements to my working methods and give reasons</p>
KS4	<p><b><u>Using investigative approaches</u></b> I can recognise significant variables in investigations, selecting the most suitable to investigate and control.</p> <p>I can independently write a risk assessment explaining the course of action I will take to mitigate the hazards.</p> <p>I can explain why particular pieces of equipment or information sources are appropriate for the questions or ideas under investigation.</p>	<p><b><u>Communication for audience and with purpose</u></b> I can distinguish between opinion and scientific evidence in contexts related to science.</p> <p>I can use evidence rather than opinion to support or challenge scientific arguments.</p> <p>I can use appropriate scientific and mathematical conventions and terminology to communicate abstract ideas.</p>	<p><b><u>Thinking scientifically</u></b> I can identify the strengths and weaknesses of particular models.</p> <p>I can make connections between abstract ideas and/or models in explaining processes or phenomena.</p> <p>I can explain the processes by which ideas and evidence are accepted or rejected by the scientific community.</p> <p>I can make predictions using scientific knowledge and understanding.</p>	<p><b><u>Collaborating in science</u></b> I can explain why it is important for the scientific community to have a process for validating the work of other scientists and how this has influenced the acceptance of current theories</p> <p>I can explain how scientists with different specialisms and skills have contributed to particular scientific or technological developments</p> <p>I can effectively represent abstract ideas using appropriate symbols, flow diagrams and different kinds of graphs in presenting explanations and arguments</p>	<p><b><u>Understanding the applications and implications of science</u></b> I can explain the power and limitations of science in addressing a range of moral or ethical issues</p> <p>I can explain the unintended consequences that may arise from scientific and technological developments</p> <p>I can explain how creative thinking in science and technology generates ideas for future research and development</p>	<p><b><u>Working critically with evidence</u></b> I can identify quantitative relationships between variables, using them to inform conclusions and make further predictions</p> <p>I can decide on the most appropriate formats to present sets of scientific data, such as using line graphs for continuous variables</p> <p>I can evaluate the conclusions drawn by others, including scientists, in familiar or less complex contexts and consider how strongly the evidence supports these conclusions</p>