




Curriculum Intent for Science at Blessed Robert Sutton Catholic Voluntary Academy for KS3 and KS4

	<p>Science at Blessed Robert Sutton allows pupils to gain a coherent understanding of the links between structure and function of living organisms; understand the properties and interactions of matter in all its forms; understand forces and the impact of these on matter; explore chemical interactions; develop a deep understanding of the world around them. Throughout the curriculum the students will become proficient practical scientist enlightened by The Sutton Way.</p>
	<p>Science will teach spiritual development by pupils developing an appreciation of God's creation and an understanding the interactions of science and religion. Pupils will understand uses of the Earth's resources and how these need to be preserved and recycled, strengthen their understanding of sustainable energy sources. Pupils will be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. They will be taught to be critical about information and to evaluate strategies and behaviours that could have an impact on the environment. Pupils will at times explore the relationship between the Church and the scientific community – and potential conflicts.</p> <p>Our Science curriculum exposes students to the values of Catholic Social Teaching.</p> <ol style="list-style-type: none"> 1. Dignity of Work: In Science, students learn about the value of human ingenuity and innovation in creating new technologies and solutions, promoting human dignity through work. They understand how scientific discoveries can improve people's lives and dignity. 2. Life and Dignity of the Human Person: Through studying the human body and its systems, students develop an appreciation for the sacredness and dignity of human life. They learn about the interconnectedness of human biology and the importance of respecting human life at all stages. 3. Family and Community: Science helps students understand the interconnectedness of ecosystems and the impact of human actions on communities. They learn about the importance of cooperation, collaboration, and mutual respect within families, communities, and ecosystems. 4. Option for the Poor and Vulnerable: By exploring environmental issues like climate change, pollution, and resource depletion, students develop an awareness of the disproportionate impact on vulnerable populations. They learn about sustainable solutions that prioritize the needs of all people, especially the poor and marginalized. 5. Rights and Responsibilities: Through studying scientific concepts like conservation, conservation biology, and environmental ethics, students understand their individual and collective responsibilities to protect the natural world. They recognize the rights of all living beings to a healthy environment. 6. Solidarity and Common Good: By investigating global issues like climate change, pandemics, and environmental degradation, students develop an understanding of the interconnectedness of global challenges. They learn about the importance of international cooperation, solidarity, and collective action to address these global problems. 7. Stewardship - Care for God's Creation: Throughout their scientific studies, students learn about the responsibility to care for God's creation. They understand the need to balance human needs with environmental sustainability, respecting the intrinsic value of nature and living in harmony with creation.
	<p>Science will teach social excellence throughout the curriculum by encouraging students to:</p> <ol style="list-style-type: none"> 1. Develop teamwork and collaboration skills: Many science experiments and projects require students to work in groups, promoting teamwork, communication, and collaboration. These skills are essential for social excellence, as they enable individuals to work effectively with others towards a common goal. 2. Encourage problem-solving and critical thinking: Science involves analysing data, identifying patterns, and making informed decisions. These critical thinking skills are also valuable in social situations, where individuals must navigate complex social dynamics and make wise decisions. 3. Fostering curiosity and creativity: Science encourages students to ask questions, explore, and find solutions to real-world problems. This curiosity and creativity can be applied to social situations, where individuals can use their problem-solving skills to address social issues and challenges. 4. Build resilience and perseverance: Conducting science experiments can be challenging and requires students to persist through setbacks and failures. This resilience and perseverance can help individuals develop a growth mindset, which is essential for overcoming obstacles in social situations.

	<p>5. Develop communication skills: Science projects often require students to present their findings to others, developing their communication skills. Effective communication is crucial in social situations, where individuals must convey their ideas and opinions clearly and respectfully.</p> <p>6. Promoting scientific literacy: Understanding scientific concepts helps individuals make informed decisions about the world around them. This scientific literacy can translate to social situations, where individuals can evaluate information critically and make informed choices.</p> <p>7. Encourage respect for diversity: Science recognizes the diversity of human experience and the importance of considering multiple perspectives. This same respect for diversity is essential in social situations, where individuals must acknowledge and appreciate the experiences and views of others.</p> <p>8. Foster global citizenship: Science is a global subject that has implications for the environment, health, and well-being of people worldwide. Studying science can help individuals develop a sense of global citizenship, encouraging them to take an active role in addressing global challenges.</p> <p>9. Develop spatial awareness and visual literacy: Many science concepts rely on spatial awareness and visual literacy, such as understanding diagrams, models, and charts. These skills are also essential in social situations, where individuals must interpret visual information effectively.</p> <p>10. Encourage reflection and evaluation: Science requires students to reflect on their own learning and evaluate the effectiveness of their experiments. This reflective practice can help individuals develop a growth mindset, recognizing their strengths and weaknesses, and making adjustments accordingly.</p>
	<p>Science will teach academic excellence by developing an understanding of the academic rigours of studying Science. Pupils will develop an understand of scientific literacy and become proficient at using it. Teaching will equip pupils to critically analyse scientific theories and question observations made in practical investigations. Pupils will strengthen their understanding of practical equipment and be able to manipulate the equipment with confidence, including the use of microscopes; safe handling chemicals; carrying out chemical reactions; taking measurements of time, distance and forces in different contexts. Pupils will develop their mathematical skills through manipulation of calculations and graphically displaying information. Due to the rigorous nature of our Science curriculum it provides a solid foundation for A-levels and beyond. Students will learn how to become self-reliant learners who can identify their own strengths alongside areas of needs. Above all our curriculum prepares students for living and working in the real world, students will develop skills which will support them throughout their life.</p>

Pupils will follow the Key Stage 3 National Curriculum through the AQA KS3 syllabus and KS4 they will move to study AQA Trilogy GCSE Combined Science or choose to study AQA Trilogy GCSE Separate Science. As a result, the Science Curriculum aims to enable pupils to:

- Develop a range of practical skills which will allow pupils to apply observe scientific theories
- collect, analyse and communicate with a range of data gathered through practical work that deepen their understanding of scientific processes
- communicate scientific information in a variety of ways, including through graphs, tables, diagrams and through extended pieces of writing
- develop scientific knowledge that questions the world we live in
- develop knowledge of the how the human body functions including mechanisms for breathing, digestion and reproduction; how chemicals react and bond together; how forces interact; develop an understand of the structure of our planet and how we impact it; understanding our energy usage;
- prepare our pupils for life in an increasingly scientific and technological world today and in the future
- encouraging open-mindedness, self-assessment, perseverance and developing the key scientific skills of hypothesising, observing, interpreting, explaining, analysing and evaluating