St Christopher's Academy – Next Steps Medical
Key Stage 3 Science Policy

1. Origins of the Curriculum

The Key Stage 3 Science curriculum at the Raedwald Trust is derived from the National Curriculum and provides a broad and balanced science education that covers the three core disciplines: **Biology, Chemistry, and Physics**. The curriculum has been sequenced to ensure that key knowledge builds logically from Key Stage 2 foundations, with clear progression mapped across the key stage to prepare pupils for Key Stage 4 learning. Concepts are introduced sequentially but revisited through **concentric units**, allowing for knowledge to be deepened and retained over time.

In alignment with the **Raedwald Trust's educational intent**, the science curriculum is designed to develop students' understanding of the world through a combination of content knowledge and the processes that underpin scientific thinking. Students explore foundational ideas—from atoms and cells to ecosystems and energy—so they can better understand and explain the physical, biological, and chemical world around them.

The curriculum has been carefully tailored for **Alternative Provision (AP)** to meet a wide range of needs, with short term and fractional placements. Practical activities, real-world applications, and topic-based learning help engage students who may have previously disengaged from mainstream science education. The inclusion of personalised content (particularly in outreach settings) ensures that reintegration into mainstream schools is as smooth and academically aligned as possible.

2. Content and Sequencing

The science curriculum at Key Stage 3 is deliberately structured to ensure both **breadth and depth** across the three scientific disciplines—Biology, Chemistry and Physics. The curriculum builds progressively each year, with both **substantive knowledge** (the established facts, concepts, and theories of science) and **disciplinary knowledge** (the methods and practices of science, such as hypothesis testing, data collection and analysis) carefully sequenced to support long-term retention and meaningful understanding.

The fundamental areas in our **Science curriculum** are:

- **Biology**: cells and organisation; systems of the human body (skeletal, muscular, digestive, respiratory); health and nutrition; photosynthesis and respiration; reproduction and genetics; ecosystems and inheritance.
- **Chemistry**: the particulate nature of matter; elements, compounds and mixtures; the periodic table; chemical reactions; Earth's atmosphere and materials.
- **Physics**: energy changes and transfers; light and sound waves; forces and motion; pressure in fluids; electricity and magnetism; the particle model; space physics; energy use and cost in domestic settings.

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Autumn	Spring	Summer
Biology Cells Biology Skeletomuscular System Digestive System Respiratory System **Chemistry** Solids, Liquids, Gases Elements and Compounds Diffusion and Dissolving Separation Techniques **Physics** Energy Resources Energy Stores Light Sound **Working Scientifically**	**Biology** Photosynthesis Respiration Food Chain Webs Chromosomes and DNA **Chemistry** Chemical Reactions Combustion and Oxidation Acids and Alkalis Acid Reactions **Physics** Balanced/Unbalanced forces Forces and Motion Pressure Matter and Density	**Biology** Reproduction Health and Disease Inheritance Variation **Chemistry** Periodic Table Relativity Earth and Rock Cycle Atmosphere **Physics** Current Electricity Static Electricity Magnetism Space

Pupils are taught in groups for 1 x 60 minute session per week

Learning objectives are drawn from the National Curriculum and taught within themed units that allow for interdisciplinary links and real-life context. Units are organised to allow students to explore scientific phenomena and apply learning through practical investigation. **Working scientifically** is embedded throughout all units rather than taught as a standalone strand. It supports students' understanding of the **processes and methods** of science, including observation, hypothesis development, testing, data analysis, and drawing conclusions. This integration fosters an appreciation for the dynamic and iterative nature of science and helps students recognise that scientific knowledge evolves in response to new evidence.

Due to the diverse nature of placements within the Trust, the full Key Stage 3 science curriculum may not be delivered to all students. Some topics or extended investigations may be omitted based on time constraints or individual needs. This policy is written to reflect a full-time curriculum offer; however, **refinements and adjustments** are routinely made for students accessing **fractional placements and short-term provision,** prioritised to cover essential knowledge and processes most relevant to the learner's context and progression pathway.

Omissions from the National Curriculum

While the majority of the curriculum is covered, the following omissions have been made due to considerations around time, pupil context, and accessibility within an AP setting:

- **Physics – Relative Motion**: This content area has been omitted due to its advanced conceptual demands and limited relevance in the short- to medium-term learning journeys of many AP pupils. Reintegration pathways allow this content to be addressed at the mainstream setting if required.
- **Physics – Density and States of Matter**: Specific content relating to the **similarities and differences between solids, liquids and gases**, including a detailed focus on **density**, has not been included. The foundational particle model is covered, but the extended comparison of states of matter by density is not taught in depth.

These omissions are not expected to hinder long-term progression, as they are topics that can be revisited in Key Stage 4 if necessary. Where pupils are expected to return to mainstream schools and study the full curriculum, individualised plans may include supplementary resources or targeted support.

All teaching is **adapted to the individual needs** of learners. Scaffolding, modelling, and the use of visual aids are used to support understanding, and lessons are carefully structured to develop fluency with technical terminology. **Explicit vocabulary instruction** is embedded in every lesson. This supports the **EDI framework**, ensuring that all students can access and engage with scientific concepts regardless of their background or prior attainment.

3. Assessment and Outcomes

Assessment in Key Stage 3 Science at St Christopher's Academy is integral to our curriculum design, providing valuable insights into student progress and informing future teaching. We employ a range of formative and summative assessment strategies to ensure a comprehensive understanding of each student's development.

- Formative Assessment: Regular quizzes, peer assessments, and self-assessments are used to provide ongoing feedback to students. This helps to identify areas of strength and areas for improvement, allowing teachers to tailor instruction to meet individual needs.
- Summative Assessment: End-of-unit tests and projects can be used to evaluate student understanding of key scientific concepts and skills. These assessments are designed to reflect the National Curriculum standards and provide a holistic view of student achievement.
- Feedback: Constructive feedback is provided in a timely manner, focusing on specific ways students can improve their understanding and performance. This feedback is aligned with individual learning goals and encourages a growth mindset.

- Tracking Progress: Student progress is tracked throughout the year using our assessment framework, enabling teachers to identify trends and address any gaps in learning promptly.

Teachers use assessment data to inform practice, adapt lesson plans, and provide targeted interventions. Students are encouraged to self-assess their work against objectives, supporting the development of **metacognitive awareness** and ownership of learning.

The intended outcomes of delivering this curriculum are to:

- Develop a secure and broad understanding of scientific content and processes
- Support critical thinking and enquiry skills
- Promote curiosity and a sense of wonder about the natural world
- Prepare students for transition to Key Stage 4 science pathways

The intended outcomes of delivering the science curriculum include developing a secure understanding of fundamental scientific principles, fostering curiosity and critical thinking, and equipping students with the literacy and inquiry skills needed to progress to Key Stage 4 science pathways. In cases where statutory or benchmark assessments are in place (e.g., reintegration into Year 9 mainstream settings), data from assessments is shared with mainstream partners to support continuity and inform transition planning.

4. Science and the Wider Curriculum

Science at the Raedwald Trust contributes meaningfully to the wider curriculum and students' holistic development. Lessons are designed to encourage reflection on ethical and societal issues, such as climate change, health, and technological innovation—supporting the delivery of **British Values**, **SMSC** (Spiritual, Moral, Social, and Cultural development), and the development of **cultural capital**.

Reading and vocabulary development are central to the science curriculum. Students are explicitly taught to **describe scientific processes and key characteristics in a common language**, using technical terminology accurately and precisely. Through structured discussions and reading of scientific texts, students build a specialist vocabulary that enables them to **articulate scientific concepts** clearly and with confidence.

Ultimately, science education at Key Stage 3 equips students not only with the knowledge they need to progress academically, but with the **critical thinking and communication skills** essential for life beyond education—whether that be in further study, employment, or navigating the scientific challenges of modern life.

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