

Introduction:

The shadow of the global Covid-19 pandemic still looms large over the world, but in education schools are trying to adapt to a new 'old normal'. The stringent restrictions from 2020-21 have been removed, thus there is no need for year bubbles, face masks, no assemblies, online learning, and reduced enrichment activities. This provides the science department with the opportunity to reintroduce the wide variety of opportunities that science provides our students.

The science department continues to embed blended learning within the curriculum, thus preventing students that are isolating from falling behind; with our aim for **all students to remember, know and do more**. During this academic year, GL assessments have been refined, so that they are taken at key points across the school. Students will do a baseline GL in Year 5, followed by an exit GL at the end of Year 6. This will provide evidence of progress across Key Stage. Students will complete one further GL assessment at the end of Year 8, so that progress can be measured from entry to exit of St John's CofE Middle School Academy.

It is also the aim of the science department to ensure that our 'Catch-Up' provision is effectively utilised, so '**Century**' will be used across all year groups throughout the academic year. This will complement the many **Wave 1 Interventions** that are evident in lessons.

Intent:

St John's CofE Middle School Academy Science Department is committed to helping students become confident in challenging ideas and scientific theories that they are presented with within their daily lives.

Our mission is for all students to be challenged within lessons; be able to link their prior learning with new situations they encounter; engage in public discussions; appreciate the awe and wonder of science; develop a life-long love of science and have the skills of a scientifically literate person.

The National curriculum for science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry, and physics
- Develop understanding of the nature, processes, and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

In upper Key Stage 2 the principal focus is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. This is done through specialist teachers facilitating discussion with students, allowing them to explore and talk about their ideas; creating their own questions about scientific phenomena; and analysing functions, relationships, and interactions more systematically. They will encounter more abstract ideas and begin to recognise how ideas help them to understand and predict how the world operates.

Science Curriculum 2021-22

In Key Stage 3 the focus is to develop a deeper understanding of a range of scientific ideas in biology, chemistry and physics. We aim to enable students to interconnect the three subject areas, but also across the curriculum by developing their use of scientific vocabulary, including the use of scientific terminology, units, and mathematical representations.

Implementation:

The science department has created a bespoke curriculum incorporating aspects of Collins Connect and Outstanding Science for KS2, which is taught as discreet lessons twice a week. There is an investigative aspect to most lessons, which helps to develop their scientific thinking in preparation for Key Stage 3. Students are periodically assessed on the topics that they have been taught, enabling teachers to focus wave 1 intervention on areas that the students have found most challenging.

In Key Stage 3, students follow the Activate course, which is taught exclusively by specialist science teachers. Both Years 7 & 8 have a top set for science; with the remaining classes being taught as mixed ability groups. The creation of the top set is to stretch and challenge students, preparing them for the separate science pathways available at High School. There are assessments at the end of every topic, which test the knowledge, understanding and applications of science; and incorporate low level questions through to higher order thinking skills. Alongside this, the science department has been working closely with the local High Schools to ensure that the mathematical and investigative skills required for GCSE science are taught at St Johns CofE Middle School Academy.

Autumn Term

Key Stage 2:

Students in Year 5 study the units of Materials and Forces. Whereas Year 6 study the units of The Body, The Nature Library and Electricity.

Key Stage 3:

Students on Year 7 study the units of Working Scientifically, Cells, Particles and Elements. Whereas Year 8 study the units of Ecosystem Processes, The Periodic Table and Electricity & Magnetism.

Spring Term

Key Stage 2:

Students in Year 5 study the units of Plants, Lifecycles, Everyday Materials and Earth & Beyond. In Year 6, students study the units of Marvellous Mixtures and Everything Changes.

Key Stage 3:

Students on Year 7 study the units of Body Systems, Chemical Reactions, Sound and Forces. Students will also complete a mini project on the unit of Space, which will be completed as homework. Whereas Year 8 study the units of Health and Lifestyle, Separating Techniques and Energy. Likewise, students in Year 8 will also complete a mini project for homework on the topic of The Earth.

Summer Term

Key Stage 2:

Students in Year 5 study Reproduction and All Change, with students in Year 6 studying Light and the bespoke Working Scientifically unit. This is specifically designed to provide students with the skills required for Key Stage 3 scientific enquiry.

Key Stage 3:

Students in Year 7 study Reproduction, Acids & Alkalis and a unit from Year 8 called Adaptations & Inheritance. Students in Year 8 study Adaptation & Inheritance, Metals & Acids and Motion & Pressure.

The Launchpad, which supports the learning of a select number of students, also offers a bespoke curriculum designed to be taught over two years covering topics on Plants, Materials, Forces, The Body, Nature Library, Electricity and Light. Those students in Years 7 & 8 will have differentiated lessons linked to the topics being delivered on the above topics.

Impact:

The curriculum offer for science has now created a rich and stimulating environment that will allow both our students and department to engage in the process of scientific discovery. During the last academic year, science offered a high-quality blended learning curriculum in extremely challenging circumstances. The enrichment opportunities were limited last year; however, the normal science enrichment programme will begin again in earnest this year. The cultural capital of the students is paramount and can be seen through the excellent work produced within their books. The GL results and progress in books demonstrates the strong progress and attainment achieved by our students. However, the impact of lockdown cannot be understated here, as for the second academic year running, a significant proportion of the curriculum was taught online, therefore, the results achieved by the students is a testament to the outstanding efforts of both our students and the science department, of which I am immensely proud.

M Field
September 2021