



Curriculum plan for Science	September 2020
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Introduction

The Science department enhance students' lives in the study of Science by fulfilling the St Joseph's Mission statement: **Living, loving, learning through Christ**. We strive to make learning fun, inspire a love of practical work and a thirst for knowledge in our students, developing them as independent and enquiring learners. To achieve our aim, we endeavour to:

- Ensure all students make outstanding progress, regardless of their starting point.
- Ensure all Science lessons include relevant challenges, pupil engagement and a focus on celebrating success.
- Provide students opportunities to participate in a wide range of learning experiences, developing them as effective communicators and active learners.
- Help all students develop into creative, analytical, and independent thinkers.
- Encourage all pupils to develop skills to enable them to communicate their scientific ideas fluently and accurately.
- Provide a supportive, engaging, and challenging learning environment to help students achieve their very best.
- To provide students with the knowledge and skillset, which enables them to be scientific in their thinking.
- To ensure students understand scientific language, enabling them to describe and manipulate real world scenarios and make informed decisions.
- To provide students with knowledge and a solid foundation of skills in Key Stage 3 and 4, so they are able to achieve the best grade possible at GCSE, which will enable them to go on to their chosen route after St. Joseph's.

Topics covered in each year group

Year 7

Activate Science provides ideal preparation for all GCSE routes, with comprehensive and flexible assessment at the end of each chapter.

AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures

AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques, and procedures.

AO3: Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures.

Mathematics, literacy and working scientifically is embedded throughout to develop key skills.

Assessment of each topic is about every two weeks with an overall assessment at the end of each term.

Term 1 – Biology	Term 2 – Chemistry	Term 3 – Physics
<ol style="list-style-type: none"> 1. Cells 2. Structure and function of body systems 3. Reproduction 	<ol style="list-style-type: none"> 1. Particles and their behaviour 2. Atoms, elements, and compounds 3. Chemical reactions 4. Acids and alkalis 	<ol style="list-style-type: none"> 1. Forces 2. Sound 3. Light 4. Space

Year 8

Term 1a – Chemistry	Term 2 – Physics	Term 3 – Physics (continued)
<ol style="list-style-type: none"> 1. The Periodic Table 2. Separation techniques 3. Metals and acid 4. The Earth 	<ol style="list-style-type: none"> 1. Electricity and magnetism 2. Energy 3. Motion and speed 	<ol style="list-style-type: none"> 1. Electricity and magnetism 2. Energy 3. Motion and speed
Term 1b – Physics <ol style="list-style-type: none"> 1. Forces 2. Sound 3. Light 4. Space 		Term 3 – Biology <ol style="list-style-type: none"> 1. Health and lifestyle 2. Ecosystems 3. Adaptation and inheritance

Year 9

Students will follow **one** of two science options:

AQA GCSE separate sciences. Students can achieve three separate GCSE qualifications in Biology, Chemistry and Physics.

- **AQA Biology, Specification No. 8461.**
- **AQA Chemistry, Specification No. 8462.**
- **AQA Physics, Specification No. 8463.**

AQA GCSE Combined Science Trilogy. Students can achieve two GCSE qualifications in Science.

- **AQA Combined Science Trilogy, Specification No. 8464**

Term 1

Biology

1. Cell structure and transport
2. Cell division
3. Organisation and the digestive system
4. Organising animals and plants

Chemistry

1. Atomic structure
2. The Periodic Table
3. Structure and bonding
4. Chemical calculations

Term 2

Biology

1. Communicable diseases
2. Preventing and treating disease
3. Non-communicable diseases
4. Photosynthesis
5. Respiration

Chemistry

1. Chemical changes

Term 3

Physics

1. Conservation and dissipation of energy
2. Energy transfer by heating
3. Energy resources
4. Electric circuits
5. Electricity in the home
6. Molecules and matter
7. Radioactivity

Year 10

Term 1

Biology

1. The human nervous system
2. Hormonal coordination
3. Homeostasis in action
4. Reproduction
5. Variation and evolution
6. Genetics and evolution

Chemistry

1. Chemical changes
2. Electrolysis
3. Energy changes

Term 2

Biology

1. Adaptations, interdependence, and competition
2. Organising an ecosystem
3. Biodiversity and ecosystems

Chemistry

1. Rates and equilibrium

Term 3

Physics

1. Conservation and dissipation of energy
2. Energy transfer by heating
3. Energy resources
4. Electric circuits
5. Electricity in the home
6. Molecules and matter
7. Radioactivity

Year 11

Term 1

Biology

1. Cells and organisation
2. Disease and bioenergetics
3. Biological responses
4. Genetics and reproduction
5. Ecology

Chemistry

1. Atoms, bonding, and moles
2. Chemical reactions and energy changes
3. Rates, equilibrium, and organic chemistry
4. Analysis and the Earth's resources

Revision

Biology

- Paper 1
- Paper 2

Chemistry

- Paper 1
- Paper 2

Term 2

Biology

1. Cells and organisation
2. Disease and bioenergetics
3. Biological responses
4. Genetics and reproduction
5. Ecology

Chemistry

1. Atoms, bonding, and moles
2. Chemical reactions and energy changes
3. Rates, equilibrium, and organic chemistry
4. Analysis and the Earth's resources

Revision

Biology

- Paper 1
- Paper 2

Chemistry

- Paper 1
- Paper 2

Term 3

Physics

1. Energy and energy resources
2. Particles at work
3. Forces in action
4. Waves, electromagnetism, and space

Physics

- Paper 1
- Paper 2

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