



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.**

<p><b>Term 1 – Biology</b></p> <ol style="list-style-type: none"> <li>1. Cells</li> <li>2. Structure and function of body systems</li> <li>3. Reproduction</li> </ol>	<p><b>Term 2 – Chemistry</b></p> <ol style="list-style-type: none"> <li>1. Particles and their behaviour</li> <li>2. Atoms, elements, and compounds</li> <li>3. Chemical reactions</li> <li>4. Acids and alkalis</li> </ol>	<p><b>Term 3 – Chemistry (continued)</b></p> <ol style="list-style-type: none"> <li>1. Particles and their behaviour</li> <li>2. Atoms, elements, and compounds</li> <li>3. Chemical reactions</li> <li>4. Acids and alkalis</li> </ol> <p><b>Term 3 – Physics</b></p> <ol style="list-style-type: none"> <li>1. Forces</li> <li>2. Sound</li> <li>3. Light</li> <li>4. Space</li> </ol>
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Year 8

**Term 1a – Chemistry**

1. The Periodic Table
2. Separation techniques
3. Metals and acid
4. The Earth

**Term 1b – Physics**

1. Forces
2. Sound
3. Light
4. Space

**Term 2 – Physics**

1. Electricity and magnetism
2. Energy
3. Motion and speed

**Term 3 – Physics (continued)**

1. Electricity and magnetism
2. Energy
3. Motion and speed

**Term 3 – Biology**

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

<p><b>Term 1</b></p> <p><b>Biology</b></p> <ol style="list-style-type: none"><li>1. Cells and organisation</li><li>2. Disease and bioenergetics</li><li>3. Biological responses</li><li>4. Genetics and reproduction</li><li>5. Ecology</li></ol> <p><b>Chemistry</b></p> <ol style="list-style-type: none"><li>1. Atoms, bonding, and moles</li><li>2. Chemical reactions and energy changes</li><li>3. Rates, equilibrium, and organic chemistry</li><li>4. Analysis and the Earth's resources</li></ol> <p><b>Revision</b></p> <p><b>Biology</b></p> <ul style="list-style-type: none"><li>• Paper 1</li><li>• Paper 2</li></ul> <p><b>Chemistry</b></p> <ul style="list-style-type: none"><li>• Paper 1</li><li>• Paper 2</li></ul>	<p><b>Term 2</b></p> <p><b>Biology</b></p> <ol style="list-style-type: none"><li>1. Cells and organisation</li><li>2. Disease and bioenergetics</li><li>3. Biological responses</li><li>4. Genetics and reproduction</li><li>5. Ecology</li></ol> <p><b>Chemistry</b></p> <ol style="list-style-type: none"><li>1. Atoms, bonding, and moles</li><li>2. Chemical reactions and energy changes</li><li>3. Rates, equilibrium, and organic chemistry</li><li>4. Analysis and the Earth's resources</li></ol> <p><b>Revision</b></p> <p><b>Biology</b></p> <ul style="list-style-type: none"><li>• Paper 1</li><li>• Paper 2</li></ul> <p><b>Chemistry</b></p> <ul style="list-style-type: none"><li>• Paper 1</li><li>• Paper 2</li></ul>	<p><b>Term 3</b></p> <p><b>Physics</b></p> <ol style="list-style-type: none"><li>1. Energy and energy resources</li><li>2. Particles at work</li><li>3. Forces in action</li><li>4. Waves, electromagnetism, and space</li></ol> <p><b>Physics</b></p> <ul style="list-style-type: none"><li>• Paper 1</li><li>• Paper 2</li></ul>
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