

**Whole School Curriculum Intent Statement: We build better people through: Developing the skills, knowledge and values to enable all students to be successful in their next steps.**  
**Subject Curriculum Intent Statement: To know the scientific underpinning of human acquired knowledge and develop the skills to add to or utilise this body of knowledge.**

|    | Autumn 1  | Autumn 2   | Spring 1   | Spring 2  | Summer 1  | Summer 2   |
|----|---|--|--|---|---|--|
| 7  | Plant and animal cells: Solids liquids and gases: Energy transfers  | Health: Elements and Compounds : Sound   | Diet and food tests: Acids and Alkalis: Forces   | DNA, Genes and chromosomes: Reactions of metals: Solids, Liquids, Gases   | Exchange surfaces: Earth, Rock, and Rock cycle: Day, Night, Season, Tides | Food chains and webs: Simple Hydrocarbons and Combustion: Generating electricity |
| 8  | The digestive system: Periodic Table: Fuels and energy resources  | Hormones, blood sugar and diabetes: Atomic structure and ions: Changes of state  | Prokaryotic and eukaryotic cells: Chemical reactions: Electric current and p.d   | Ecology: Metallic bonding and alloys : Pressure   | Photosynthesis: The atmosphere: Light                                     | Selective breeding: Structure of hydrocarbons: Solar system                      |
| 9  | Reproduction: Separating mixtures: Motion   | Levels of organisation: Ionic and covalent bonding: Energy in the home   | Enzymes and digestion: Making salts: Density, Dissolving and pressure  | Respiration: Fossil fuels: Features of waves  | Evolution and extinction: Hydrocarbons as fuels: EMS                      | Measuring the environment Ceramics and composite: Astronomy                      |
| 10 | Biology: Infection and Response<br>Chemistry: Quantitative Chemistry  | Chemistry: Chemical Changes<br>Physics: Particle Model   | Biology: Bioenergetics<br>Physics: Atomic Structure  | Chemistry: Energy Changes<br>Physics: Forces  | Chemistry: Rates of Reaction<br>Physics: Forces - Motion                  | Biology: Homeostasis<br>Chemistry: Organic Chemistry                             |
| 11 | Biology: Ecology<br>Chemistry: Chemical Resources & Chemistry of the Atmosphere   | Chemistry: Chemical Analysis & Organic Chemistry<br>Physics: Magnets   | Biology: Inheritance<br>Physics: Waves<br>Chemistry: Rates   | Biology: Homeostasis<br>Physics: Forces   | Exams   | Exams  |
| 12 | Applied Science Unit 2: Learning aim B-Undertake calorimetry to study cooling curves . Unit 1 : Cell structure and function. Cell specialisation. Tissue structure and Function                   | Applied Science Unit 2: Learning aim C- Undertake chromatographic techniques to identify components in mixtures. Unit 1 : Tissue structure and Function. Working with waves. | Applied science unit 2: Learning aim A- Undertake titration and colorimetry to determine the concentration of solutions. Unit 1 : Working with waves. Waves in communication.            | Applied science Unit 2: Learning aim D - Review personal development of scientific skills for laboratory work. Unit 1 :Structure and bonding in applications in science. Production and uses of substances in relation to | Applied science : past papers and revision.Exam                           | Chemistry: Applied science: Unit 3   |
| 13 | Applied Science Unit 9 : Learning aim A- Understand the interrelationship and nervous control of the cardiovascular and respiratory systems. Unit 3 : Enzyme & Diffusion practical investigations | Applied Science unit 9 : Learning aim B Understand the homeostatic mechanisms used by the human body. Unit 3: Ecology & Fuels practical investigations                       | Applied Science unit 9 : Learning aim C - Understand the role of hormones in the regulation and control of the reproductive system. Unit 3 : Electrical Circuit practical investigations | Applied: Science: Unit 3 revision   | Exams, Past paper revision  | Exams  |

#### Biology

|    |                        |                                      |                          |               |                          |                          |
|----|------------------------|--------------------------------------|--------------------------|---------------|--------------------------|--------------------------|
| 10 | Infection and Response | Infection and Response               | Bioenergetics            | Bioenergetics | Homeostasis and Response | Homeostasis and Response |
| 11 | Ecology                | Inheritance, Variation and Evolution | Homeostasis and Response | Exam prep     | Exams                    | Exams                    |

#### Chemistry

|    |   |                   |                                    |                               |                   |                               |
|----|---|-------------------|------------------------------------|-------------------------------|-------------------|-------------------------------|
| 10 | Quantitative Chemistry                            | Chemical Changes  | Energy Changes                     | Rates of Reaction             | Organic Chemistry | Organic Chemistry - continued |
| 11 | Chemical Analysis and Chemistry of the Atmosphere | Organic Chemistry | Energy Changes & Rates of reaction | Using Resources and Exam Prep | Exams             | Exams                         |

#### Physics

|    |                           |                  |                 |                 |       |                   |
|----|---------------------------|------------------|-----------------|-----------------|-------|-------------------|
| 10 | Particle Model of Matter  | Atomic Structure | Forces          | Forces - Motion | Waves | Waves - continued |
| 11 | Magnets and Space Physics | Waves            | Forces - Motion | Forces          | Exams | Exams             |

#### Chemistry

|    |                          |   |                                 |  |  |                         |
|----|--------------------------|---|---------------------------------|--|--|-------------------------|
| 12 | Foundations in Chemistry | Foundations in Chemistry , Periodicity and Groups | Rates , Equilibria and Enthalpy | Organic Chemistry                          | Organic Chemistry and Revision / Past Papers | Mock Exams and Kinetics |
| 13 | Physical Chemistry       | Physical Chemistry and Transition Elements        | Further Organic Chemistry       | Further Organic Chemistry and Spectroscopy | Past papers and Revision                     | EXAMS                   |

#### Applied Science

|             |   |   |  |   |   |                         |
|-------------|---|---|--|---|---|-------------------------|
| 12 (Unit 1) | Cell structure and function. Cell specialisation. Tissue structure and Function   | Tissue structure and Function. Working with waves   | Working with waves. Waves in communication.  | Structure and bonding in applications in science. Production and uses of substances in relation to properties | Applied science : past papers and revision.Exam | Applied science: Unit 3 |
| 12(unit 2)  | Assignment: Learning aim B- Undertake calorimetry to study cooling curves .   | Assignment: Learning aim C- Undertake chromatographic techniques to identify components in mixtures | Assignment: Learning aim A- Undertake titration and colorimetry to determine the concentration of solutions          | Assignment: Learning aim D - Review personal development of scientific skills for laboratory work.            | Applied science : past papers and revision.Exam | Applied science: Unit 3 |
| 13(unit 9)  | Assignment: Learning aim A- Understand the interrelationship and nervous control of the cardiovascular and respiratory systems. | Assignment: Learning aim B Understand the homeostatic mechanisms used by the human body.            | Assignment: Learning aim C Understand the role of hormones in the regulation and control of the reproductive system. | Applied: Science: Revision and past papers. Unit 3  | Past papers and Exam                            |                         |
| 13 (unit 3) | Enzyme & Diffusion practical investigations   | Ecology & Fuels practical investigations  | Electrical Circuit practical investigations  | Applied: Science: Revision and past papers. Unit 3  | Past papers and Exam                            |                         |

#### Physics

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|----|--|--|--|----------------------------------|--------------------------|-------|
| 13 | Electric Fields<br>Capacitors<br>Thermal Physics | Astrophysics and Cosmology<br>Simple Harmonic Motion<br>Particle Physics | Magnetic Fields<br>Nuclear Physics<br>Particle Physics | Radioactivity<br>Medical Imaging | Past papers and Revision | EXAMS |
|----|--|--|--|----------------------------------|--------------------------|-------|

#### Biology

|    |   |  |  |   |  |   |
|----|---|--|--|---|--|---|
| 12 | Biology: Components of the Cell, Biological Molecules & Enzymes | Biology: Plasma Membranes, Mitosis & Exchange Surfaces | Biology: Transport in Animals & Plants | Biology: Classification, Evolution & Biodiversity | Biology: Communicable Diseases & Exams | Biology: (Yr 13) Nervous and Hormonal Communication |
| 13 | Biology: Energy & Respiration, Genetics                         | Biology: Genetics and Genome                           | Biology: Cloning and Inheritance       | Biology: Ecosystems and Populations               | Past papers and Revision               | EXAMS   |