



Year 10 Science



What have students at St. Crispin's been taught to understand and be able to do?

Core Knowledge

Students start their GCSE course in Year 9

Biology - Organisation

Students recap cell structure and the transport of substances in and out of the cell, applying their knowledge to learn about digestion and the role of enzymes with an opportunity for cross over with chemical reactions and reaction profiles in chemistry.

Biology - Organisation 2

Students further study the movement of molecules, this time oxygen and carbon dioxide in the circulatory system.

Biology - Respiration

Students visit the second module on bioenergetics learning about respiration. The equation for photosynthesis is revisited by way of comparison.

Biology - Disease

Students learn about different types of communicable disease. Students covered the structure of pathogen cells or viral particles in Year 9. Students then learn about non communicable diseases, revisiting the structure of heart and lungs.

Biology - Nervous system & hormonal control

Students learn about the role of the nervous system and hormones in the control of the body. Triple students also learn about the structure of the brain and the eye. All students learn about the menstrual cycle and fertility, whilst triple students also learn about the structure of the kidney and dialysis.

Core Skills

Students continue to develop their practical skills, gaining in confidence. Disciplinary knowledge is reinforced through a series of written tasks that build on activities in class.

Students develop their ability to record data in tables and graphs and use these to write conclusions.

They then move to using predictions or hypotheses to write a method, both procedures and investigations or to write a method based on a set of data. At the end of the year they will write their own methods based on scientific observations they make. Each of these core ideas have been first practiced in Year 9 and are revisited in Year 10.

Students also complete a number of practicals in lessons, in addition to the exam board required practicals.



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Core Knowledge

Biology - Human impact on the environment

Students revisit concepts learnt in Chemistry and in Biology in previous years and the impact of students on the environment. They also apply their ecology knowledge taught in Year 9 and learn about biodiversity and conservation.

Biology - Cell structure

Students revisit cells from Year 7 and 8, this time deepening their knowledge to include transport in and out of cells and the difference between Prokaryotes and Eukaryotes.

Biology - Photosynthesis

Students revisit previous topics on plants from Year 7 and 8 and study how plants use the sun's energy to produce food, how plants transport sucrose and water and how diseases effect the growth of plants.

Chemistry - Quantitative chemistry

Students apply their knowledge of chemical reactions and learn about quantitative chemistry learning about the concept of the mole.

Chemistry - Chemical reactions

Students learn about the reactivity series, revisiting aspects of the periodic table from Year 9. They also learn about the reactions of metals and non metals and acids and alkalis.

Chemistry - Electrolysis

Student learn about how metals are extracted using electrolysis, revisiting some of the concepts of extractions of metals from their ores in Year 9.

Core Skills



Year 10 Science continued



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Chemistry - Chemical reactions

Students learn about endo and exothermic reactions and different reaction profiles, with an opportunity for a cross over with the enzymes topic.

Physics - Forces in balance

Students revisit forces and how they are measured, learning about vectors and scalars and resultant forces. Triple science students are taught about some applications of forces, including levers and gears and moments.

Physics - Energy

Students revisit energy stores and the conservation of energy and learn about different types of energy and their calculation.

Physics - Space Triple only

Triple science students learn about Space and revisit EM waves.

Physics - Forces & motion

Students revisit forces and motion, this time learning about acceleration, weight and momentum.

Physics - Electromagnetism

Students learn about magnetic fields and how these are used to produce motors.

Physics - Radioactivity

Students revisit atomic structure from chemistry and physics and learn about unstable atoms and how they are radioactive and the uses of radioactivity.

Core Skills



Year 10 Science continued



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Core Knowledge	Core Skills
<p>Physics - Electric circuits Students revisit electric circuits – building on work in KS3. Students learn about how to build series and parallel circuits.</p> <p>Physics - Heating and cooling Students revisit from Year 8 the ways energy can be transferred by heating.</p>	

How has learning been assessed?

Each half term, students will take a multiple choice assessment in class. This assessment will provide rapid feedback to students helping them to identify their areas of weakness.

In class, students will also complete a written task based on key practical skills. For example, they may be shown equipment and asked to write a method to separate sand and water. This will develop their written skills and develop their disciplinary knowledge.

What is coming up in the following year?

Students will continue their GCSE studies into Year 11.