



# Christ's College Guildford

Principal: Sarah Hatch. BA (Hons), QTS, PGC, NPQH  
[www.christscollege.surrey.sch.uk](http://www.christscollege.surrey.sch.uk)



## Subject: Science

Year Group: 11

### Curriculum Intent:

The intent of our Science curriculum is to encourage our students in developing a sense of excitement, exploration and investigation, a love of the subject and of learning. As well as deepening their understanding of science, they can apply their knowledge to the world around them. Science equips students with an ability to use literacy, numeracy and practical techniques interchangeably and bridges the gap between theory and application. This enables students to make the link between science and technology and the impact they both have on our everyday lives. Throughout their Science education, students work independently and in groups to help them develop their individual learning skills and their ability to communicate and share new ideas and methodology with peers.

### College Values:

Science equips students with the ability to take stewardship of their learning using investigations and research to draw conclusions. By working in groups students are encouraged to cooperate and collaborate allowing them to engender respect for their own techniques and knowledge as well as that of others. By encouraging a love of both content and scientific methods, Science equips students with transferable skills which will apply to service within their communities.

### Knowledge and Skills

Edexcel GCSE (9-1) Yr11 content

**Photosynthesis**, Factors that affect photosynthesis, Absorbing water & mineral ions  
Transpiration & translocation, Plant adaptations, Plant hormones, Uses of plant hormones

**Electrolysis**, Products from electrolysis, Reactivity, Ores, Oxidation & reduction,  
Life cycle assessment & recycling, Dynamic equilibrium, Transition metals, Corrosion  
Electroplating, Alloying, Uses of metals & their alloys, Yields, Atom economy, Concentrations

**Titrations & calculations**, Molar volumes of gases, Fertilisers & the Haber process  
Factors affecting equilibrium, Chemical cells & fuel cells

**Work & power**, Objects affecting each other, Vector diagrams, Rotational forces

**Electric circuits**, Current & potential difference, Current, charge & energy, Resistance  
More about resistance, Transferring energy,

**Power**, Transferring energy by electricity, Electrical safety, Charges & static electricity, Uses & dangers of static electricity  
Electric fields

**Hormones**, Hormonal control of metabolic rate, The menstrual cycle, Hormones & the menstrual cycle,  
Control of blood glucose, Type 2 diabetes, Thermoregulation, Osmoregulation, The kidneys





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**Group 1, Group 7,** Halogen reactivity, Group 0, Rates of reaction, Factors affecting reaction rate Catalysts & activation energy, Exothermic & endothermic reactions, Energy changes in reactions

**Magnets & magnetic fields,** Electromagnetism, Magnetic forces, Electromagnetic induction The national grid, Transformers, Transformers & energy

**Efficient transport & exchange,** Factors affecting diffusion, The circulatory system  
The heart, Cellular respiration

**Ecosystems,** Energy transfer, Abiotic factors & communities

**Bending & stretching,** Extension & energy transfers, Pressure in fluids, Pressure & upthrust

## Skills

Development of Scientific Thinking  
Experimental Skills & Strategies  
Analysis & Evaluation  
Scientific Vocabulary, Quantities, Units, Symbols & Nomenclature  
Extended writing  
Investigation Planning  
Conclusion writing  
Evaluation writing  
Application of mathematical formulae  
Evaluating Impact  
Ethical Considerations  
Data Analysis  
Scientific modelling  
Manipulation of practical equipment

## **Homework:**

At GCSE homework will consist of exam style question practice.  
Some tasks will be research based and these will be teacher assessed (eg: practical write ups and projects)  
Activities will be set on Seneca.  
All students have access to an electronic version of the course textbook.

## **Cultural Capital:**

<https://www.pearsonactivelearn.com/app/Home>  
<https://www.bbc.co.uk/bitesize/levels/z98jimp3>  
<https://senecalearning.com/en-GB/>  
<https://www.s-cool.co.uk/>

