

Computing curriculum rationale

As part of our ambition to meet or exceed the ambitions of the national curriculum, we have designed a broad curriculum offer that ensures students in KS4 are able to access the Computing National Curriculum (KS4) in a multitude of ways. We have designed this to ensure that students outside of those who opt to pursue Computer Science or iMedia as part of the KS4 Pathways process are still able to develop and study aspects of information technology and computer science which ensure they leave Crompton House as computer-literate and allow them to progress to higher levels of study or to a professional career.

The National Curriculum for Computing states that at KS4, students should be taught to:

- Develop their capability, creativity and knowledge in computer science, digital media and information technology
- Develop and apply their analytic, problem-solving, design and computational thinking skills
- Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns

All students in KS4 are expected to demonstrate basic IT skills in their use of the Office suite of programmes. Students make use of Microsoft Teams to store work and communicate with their teachers, in addition to access to Outlook. Using these programmes require students to make use of features such as adding attachments and downloading documents. Students will also use programmes such as Word or PowerPoint across various lessons to document and record their work.

As you can see from the below table of information, the different ambitions of the National Curriculum are delivered through a wealth of educational experiences stretching the full breadth of the curriculum. At Crompton House we believe it paramount that life-long skills are developed not just through one curricular area, but through a range of interactions.

<p>Develop their capability, creativity and knowledge in computer science, digital media and information technology</p>	<p>Art Students make use of Rasterbator, a design website which allows them to consider the use of photographs and digitalisation. This allows them to work on poster design and create contact sheets.</p> <p>Business Studies In Business Studies students make use of a range of programmes to develop their awareness of business. As part of their advertising work, they make use of Canva.</p> <p>Communication Studies Students are expected to be able to use and navigate Lexia, a literacy-based programme. They have also use Sparx Reader in Year 11 to further develop their reading and comprehension skills.</p> <p>Design Technology/Design Engineering As part of their exploration of different programmes, students use Solidworks (CAD) to design and craft their products. They also make use of the technical facilities to complete 2D CAD and laser cutting.</p> <p>Drama In Drama students make use of a range of programmes to design theatre programmes. These programmes can be made using various formats, such as Microsoft Word or PowerPoint and expected to consider the intended audience and what suitable features and design ideas would be appropriate. Additionally students gain a wealth of experience use the technical equipment available, such as lighting desks and sound equipment to help manage theatrical productions.</p>
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English

Using SORA, students have access to an online library. They are expected to be able to develop search and exploration features.

Food and Nutrition

As part of their non-examined assessment, students use Explore Food, which is a programme that creates a nutritional analysis of recipes. Students are expected to be able to navigate the programme independently, making use of its features.

Graphics

Students make use of photoshop to develop their portfolios. They also use Photopea to help edit photographs as part of their creative design work.

Maths

Students are encouraged to use applications such as DESMOS to investigate mathematical concepts. Students are exposed to iteration problems and understand the power of a computer in answering these problems.

Modern Foreign Languages

Using programmes such as Taxitave, students make use of computers to develop their language acquisition. This is further underpinned Linguascope and Wordwall.

Music

Students make use of Soundtrap and MuseScore to help develop their compositions. As part of using these programmes students learn to use the various features to help control and edit sound.

Sport Studies

Students make use of Microsoft Excel and its range of features to help track sport performance. Students are expected to integrate the use of formulas to help calculate performance measures, in addition to embedding graphs and pie charts into their work.

Art

The use of Rasterbator involves students considering the size of work students need the final product to be, and the rates at which images need to be enlarged or reduced.

Design Technology/Design Engineering

Using Solidworks in Design Engineering, students are expected to analyse problems in their design, and make use of the computer facilities of Solidworks to consider how to fit individual components together.

Maths

All students are routinely exposed to problem solving in the mathematics classroom. Students are challenged to analyse information. This may be through data topics where students analyse data to draw conclusions and make inferences. It may be more general, where students are given information in a context and are challenged to use the information in an analytical and sometimes creative way to solve a problem. In geometry, students have to use their design skills. They are taught to transform shapes, describe shapes, design nets of solids, look for symmetry and rotation. They need to understand three dimensional objects and consider how they look from different perspectives. Students are exposed to flow charts and develop some understanding of algorithms.

Science

As part of their work in either Combined Science or Separate Science, students develop their data and analysis skills looking at graphs and problem solving skills as part of the required practical components of GCSE. In addition to this, students look at models, consider how to analyse and interpret data and look at simulations of growing scientific problems.

Develop and apply their analytic, problem-solving, design and computational thinking skills

Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns

Business Studies

Students study the legislation around technology in business, in particular looking at the dangers of online fraud and how to safeguard online payment systems.

Communication Studies

As part of the Holidays unit, students look at how to safely explore and book online holidays. They make use of online site to explore how to research and book holidays. They then consider the role of online review agents, such as TripAdvisor.

Design Technology/Design Engineering

Students must consider the changing nature of technology, such as the use of robotics and IT systems, and how they may impact the creation of products.

Modern Foreign Languages

In Year 10, pupils in MFL study the topic of Technology. During this topic, pupils explore the positives and negatives of technology, which leads to discussions around online privacy and safety concerns.