CURRICULUM STATEMENT

COMPUTER SCIENCE DEPARTMENT

RANELAGH SCHOOL

'For the Spirit that God has given us does not make us timid; instead, his Spirit fills us with power, love and self-control.' 2 Timothy 1:7

At the heart of our ethos is our commitment to being a dynamic learning community, rooted in Christianity, where people matter. In this we seek wisdom and pursue excellence.

Core Values

The Computer Science Department at Ranelagh School aims to provide all pupils with an education that helps them understand and be prepared for computing and technology in an ever changing and challenging technological world whilst being embedded in our shared vision and the core values of the Ranelagh School Learner Profile:

Confidence - Students who are self-assured are more likely to take risks, see mistakes as learning opportunities and be open to new learning experiences. They have poise and self-belief; this means that even when learning is difficult, they will persist.

Resilience - Students are able to keep learning even when they find work difficult. They show flexibility and stamina. When they need to work for long periods on challenging problems they persevere.

Curiosity - Students who are keen to enquire will ask questions and have a genuine interest to learn more. They are inquisitive and work hard on further developing their skills and knowledge. This means they are more likely to understand their own abilities, interests and future aspirations.

Creativity - Students use inventive, resourceful and original ways to learn. They produce learning outcomes that demonstrate their ingenuity and imagination.

Empathy - Students can listen, understand and learn from others. They are well placed to work as part of a team. They show warmth, humour and positivity and collaborate effectively with others.

Independence - Students are self-motivated, they understand how they learn and can manage themselves. They have self-belief, can access resources and know how to learn successfully beyond Ranelagh.

Intention of the Ranelagh Computer Science Curriculum

The intention of the Ranelagh Computer Science Curriculum is that all students:

• understand the content of their courses through the delivery of high quality lessons adapted to their individual needs

• Enriches and broadens their understanding of the subject outside the classroom through extra-curricular activities, visits and by encouraging wider reading of relevant sources

• Prepares students to be successful in examinations by focusing on the appropriate techniques to allow them to perform well

• Prepares pupils for a working life beyond Ranelagh and explore further study on the relevant IT and computing fields

Computer Science Curriculum Outline

Year	Autumn Term	Spring Term	Summer Term
7 (rotation)	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python
8 (rotation)	Data Representation, Networks, Algorithms, computational thinking and Python	Data Representation, Networks, Algorithms, computational thinking and Python	Data Representation, Networks, Algorithms, computational thinking and Python
9	Algorithms, computational thinking and Python programming	Consequences of Computing Data representation Networks	Websites
10	CS: Algorithms, computational thinking and Python programming iMedia: Creating digital graphics coursework	CS: Data Representation, Networks and communication, databases, consequences of computing iMedia: Pre-production skills exam preparation	CS: NEA programming project iMedia: Exam
11	CS: Networks and communication, Data Bases, computer systems iMedia: 2D Characters coursework	CS: Revision/recap past topics and exam past paper practise iMedia: 2D Characters coursework finish and Website coursework start	CS: Exams iMedia: Website coursework finish
12	Algorithms, computational theory topics supporting paper 1	Paper 2 topics: networks and communications, Data Bases, Big Data	NEA project (20% final grade)
13	Networks and communications, Data Bases, Big Data	Revision/recap past topics and exam past paper practise	Revision/recap past topics and exam past paper practise

Computer Science Assessment Criteria

Year 7

Grade	Knowledge and Understanding	Skills
9	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Be able to clearly identify and describe input and output devices. Be able to describe memory and the need for secondary storage. Be able to describe the difference between the internet and www, also difference between browser and a web search engine. Be able to explain what an algorithms is and why does it apply to computer science. Be able to code competently in Python. Excellent ICT skills when using the workstations.
7-8	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Be able to identify and describe input and output devices. Be able to explain memory and the need for secondary storage. Be able to explain the difference between the internet and www, also difference between browser and a web search engine. Be able to define what an algorithms is and how does it apply to computer science. Be able to code in Python. Good ICT skills when using the workstations.
5-6	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Be able to identify and describe input and output devices. Be able to explain memory and the need for secondary storage. Be able to explain the difference between the internet and www, also difference between browser and a web search engine. Be able to define what an algorithms is. Be able to code basic Python commands. ICT skills when using the workstations.
3-4	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Be able to identify and describe some input and output devices. Be able to explain some storage devices. Be able to state what the internet and www are, also be able to identify a browser and a web search engine. Be able to print in Python. Some ICT skills when using the workstations.
1-2	Hardware & software, Networks/Internet, Memory/Storage, Algorithms, computational thinking and Python	Be able to identify one input and output device. Be able to identify one storage device. Be able to print in Python. Basic ICT skills when using the workstations.

Year 8

Grade	Knowledge and Understanding	Skills
9	Data Representation, Networks, Algorithms, computational thinking and Python	Excellent image editing skills using Serif Photo Plus. Excellent understanding of the resolution of images. Excellent understanding of Binary numbers and conversions Binary-Denary Excellent knowledge of Data representation of ASCII Excellent understanding of computer networks and topographies Excellent programming and computational thinking skills that allows the student to write user inputs and Selection statements in Python.
7-8	Data Representation, Networks, Algorithms, computational thinking and Python	Very Good image editing skills using Serif Photo Plus. Very Good understanding of the resolution of images. Very Good understanding of Binary numbers and conversions Binary-Denary Very Good knowledge of Data representation of ASCII Very Good understanding of computer networks and topographies Very Good programming and computational thinking skills that allows the student to write user inputs and Selection statements in Python.
5-6	Data Representation, Networks, Algorithms, computational thinking and Python	Good image editing skills using Serif Photo Plus. Good understanding of the resolution of images. Good understanding of Binary numbers and conversions Binary-Denary Good knowledge of Data representation of ASCII Good understanding of computer networks and topographies Good programming and computational thinking skills that allows the student to write user inputs and Selection statements in Python.

3-4	Data Representation, Networks, Algorithms, computational thinking and Python	Satisfactory image editing skills using Serif Photo Plus. Satisfactory understanding of the resolution of images. Satisfactory understanding of Binary numbers and conversions Binary-Denary Satisfactory knowledge of Data representation of ASCII Satisfactory understanding of computer networks and topographies Satisfactory programming and computational thinking skills that allows the student to write user inputs and Selection statements in Python.
1-2	Data Representation, Networks, Algorithms, computational thinking and Python	Basic image editing skills using Serif Photo Plus. Basic understanding of the resolution of images. Basic understanding of Binary numbers and conversions Binary-Denary Basic knowledge of Data representation of ASCII Basic understanding of computer networks and topographies Basic programming and computational thinking skills that allows the student to write user inputs and Selection statements in Python.

Year 9

Grade	Knowledge and Understanding	Skills
9	Algorithms, computational thinking and Python programming Consequences of Computing Data representation Networks Websites	Excellent programming and computational thinking skills that allows the student to write code to and add comments and annotations to the script. Excellent understanding of the issues and consequences of computing Excellent understanding of the representation of images Excellent understanding of how binary numbers are used in computer science Excellent knowledge on how computer networks work and what devices conform them Excellent skills using Serif Web Plus producing a mood board, interpreting client requirements, save assets to a folder and create a website
7-8	Algorithms, computational thinking and Python programming Consequences of Computing Data representation Networks Websites	Very good programming and computational thinking skills that allows the student to write code to and add comments and annotations to the script. Very good understanding of the issues and consequences of computing Very good understanding of the representation of images Very good understanding of how binary numbers are used in computer science Very good knowledge on how computer networks work and what devices conform them Very good skills using Serif Web Plus producing a mood board, interpreting client requirements, save assets to a folder and create a website
5-6	Algorithms, computational thinking and Python programming Consequences of Computing Data representation Networks Websites	Good programming and computational thinking skills that allows the student to write code to and add comments and annotations to the script. Good understanding of the issues and consequences of computing Good understanding of the representation of images Good understanding of how binary numbers are used in computer science Good knowledge on how computer networks work and what devices conform them

		Good skills using Serif Web Plus producing a mood board, interpreting client requirements, save assets to a folder and create a website
3-4	Algorithms, computational thinking and Python programming Consequences of Computing Data representation Networks Websites	Satisfactory programming and computational thinking skills that allows the student to write code to and add comments and annotations to the script. Satisfactory understanding of the issues and consequences of computing Satisfactory understanding of the representation of images Satisfactory understanding of how binary numbers are used in computer science Satisfactory knowledge on how computer networks work and what devices conform them Satisfactory skills using Serif Web Plus producing a mood board, interpreting client requirements, save assets to a folder and create a website
1-2	Algorithms, computational thinking and Python programming Consequences of Computing Data representation Networks Websites	Basic programming and computational thinking skills that allows the student to write code to and add comments and annotations to the script. Basic understanding of the issues and consequences of computing Basic understanding of the representation of images Basic understanding of how binary numbers are used in computer science Basic knowledge on how computer networks work and what devices conform them Basic skills using Serif Web Plus producing a mood board, interpreting client requirements, save assets to a folder and create a website