



Cardinal
Newman
CATHOLIC SCHOOL

Computer Science

Curriculum Area: Computer Science

*Like good stewards of the manifold grace of God, serve one another with whatever gift each of you has received.
1 Peter 4:10*

Curriculum Intent

Computer Science at Cardinal Newman School represents a vision in which all students engage in the concepts and practices of computer science. Beginning in Year 7 and continuing through Year 13, students will develop a foundation of computer science knowledge and learn new approaches to problem solving that harness the power of computational thinking to become both users and creators of computing technology. By applying computer science as a tool for learning and expression in a variety of disciplines and interests, students will actively participate in a world that is increasingly influenced by technology.

We at CNS envision a future in which students:

- critically engage in discussion on computer science topics
- develop as learners, users, and creators of computer science knowledge
- better understand the role of computer science in the world around them
- analyse, design, implement, test and evaluate solutions to problems that help shape our society and country.

Curriculum Overview: Computer Science

	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
HT1	ESafety & Introductory lessons (skills) (3) Impact of technology (3)	<u>Theory:</u> E Safety & Input, process & output (3) <u>Programming:</u> Python turtle graphics (3)	ESafety (2) <u>Theory:</u> Algorithms (1) <u>Programming:</u> Python basic (7)	<u>Section 1:</u> System Architecture (6) <u>Section 6:</u> programming – sequence & selection (6)	Revision of Theory. (6) <u>Programming:</u> Recap programming up to Procedures & functions (6)	<u>Section 1(ASA):</u> Components of a Computer (6) <u>Section 6(KGR):</u> Data types (6) <u>Section 11(MAA):</u> Programming techniques(2x6=12)	<u>Section 9(KGR):</u> Legal, moral, ethical and cultural issues(4) <u>Section 10(MAA):</u> Computational Thinking(4) <u>Project(MAA):</u> Development
HT2	Word & PPT (4) <u>Theory:</u> Security on electronic devices (3)	<u>Theory:</u> Input, process & output (4) <u>Programming:</u> Python turtle graphics (3)	<u>Theory:</u> Algorithms (4) <u>Programming:</u> Python (7)	<u>Section 8:</u> Data representation (6) <u>Section 6:</u> programming- Iteration (6) Revision(2)	Exams PPE (2 weeks) Revision (6) <u>Programming:</u> Records & files.(4)	<u>Section 1(ASA):</u> Components of a Computer (2) <u>Section 2(ASA):</u> Software systems(4) <u>Section 6(KGR):</u> Data types (4) <u>Section 8(KGR):</u> Boolean Algebra(2) <u>Section 7(MAA):</u> Data structures(9) <u>Project(MAA):</u> Proposal(4)	(3 weeks) Exams (2 weeks) <u>Project(MAA):</u> Development
HT3	<u>Theory</u> :Internet (3) <u>Programming:</u> Scratch programming (3)	<u>Theory:</u> Impact of ICT on society (3) <u>Programming:</u> Python programming (3)	<u>Theory:</u> CPU (3) <u>Programming:</u> Python data types	Exams MYE(2 weeks) <u>Section 2:</u> Wired & wireless networks (4) <u>Section 5:</u> Algorithms (4)	Revision: exam papers <u>Programming:</u> practice writing of programmes	<u>Section 2(ASA):</u> Software systems(2) <u>Section 8(KGR):</u> Boolean Algebra(4) <u>Section 12(MAA):</u> Algorithms (4) Exam MYE(2 weeks)	Revision-ASA, KGR, MAA <u>Project(MAA):</u> Development
HT4	<u>Theory:</u> computer hardware (2) <u>Programming :</u> Scratch programming (3)	<u>Theory:</u> Impact of ICT on society (3) <u>Programming:</u> Python programming (3)	<u>Theory:</u> CPU (1) & Software (2) <u>Programming:</u> Python – If statement	<u>Section 2:</u> Wired & wireless networks (3) <u>Section 3:</u> System software and security (3) <u>Section 5:</u> Algorithms (2) <u>Section 6:</u> programming- Iteration & Arrays (4)	Revision: exam papers <u>Programming:</u> practice writing of programmes	<u>Section 4(ASA):</u> Exchanging Data(6) <u>Section 3(KGR):</u> Software development(6) <u>Section 12(MAA):</u> Algorithms (6) <u>Project(MAA):</u> Analysis(6)	Revision-ASA, KGR, MAA Revision <u>Project(MAA):</u> Evaluation
HT5	<u>Theory:</u> Revision (exam) <u>Programming:</u> micro:bit (3)	<u>Theory:</u> Revision (exam) <u>Programming:</u> Flowchart (3)	<u>Theory:</u> Revision (exam) <u>Programming:</u> Python – For - loop	Exams EoY(2 weeks) <u>Section 3:</u> System software and security (1) <u>Section 4:</u> Ethical, legal, environmental (2)	Revision: exam papers	<u>Section 4(ASA):</u> Exchanging Data(6) <u>Section 5(KGR):</u> Network and web technologies(5) <u>Section 12(MAA):</u> Algorithms (2) <u>Project(MAA):</u> Analysis(6) Revision	Revision-ASA, KGR, MAA

				Section 6: programming- Iteration & Arrays (4)			
HT6	Theory: Cybersecurity (3) Programming: Excel (3)	Theory: Operating systems (3) Programming: Flowol (4)	Theory: Malware, Ethical, legal issues (3) Programming: Python – While - loop	Section 4: Ethical, legal, environmental (5) Section 6: programming – procedures & functions(6)		Exams EoY (2 weeks) Section 4(ASA): Exchanging Data(2) Section 5(KGR): Network and web technologies(4) Section 10(MAA): Computational Thinking(6) Project(MAA): Design(6)	

Curriculum Overview: BTEC ICT

	Year 10	Year 11	Year 12	Year 13
HT 1	Comp.1-Aim A-Explore User Interface design principles Comp.2-Aim A- Investigate the role and impact of using data	Comp.3 Modern technologies Impact of modern technologies	Unit 3-Aim A- Explore the impact of social media Unit 2- The purpose and structure of relational database	Unit 1- Digital devices in IT systems& Transmitting data Unit 6- Aim A- principles of website development
HT 2	Comp.1-Aim B- plan and design a user interface Comp.2-Aim B- Create a dashboard using data	Comp.3 Threats to data Prevention and management of threats to data	Unit 3- Aim B- Develop a plan to use social media Unit 2- Relational database design	Unit 1- Operating online& Protecting data and information Unit 6- Aim B- Design a website
HT 3	Comp.1-Aim B- plan and design a user interface Comp.2-Aim B- Create a dashboard using data	Comp.3 Responsible use of digital systems Legal and ethical	Unit 3- Aim B- Develop a plan to use social media Unit 2- Creating a relation database structure	Unit 1- Impact of IT systems Unit 6- Aim B- Design a website
HT 4	Comp.1-Aim C- Develop and review a user interface. Comp.1-Aim C- Draw conclusions and review data	Comp.3 Forms of notation in digital systems	Unit 3- Aim C- Implement the use of social media Unit 2- Evaluating a database development project	Unit 1- Issues Unit 6- Aim C
HT 5	Comp.1-Aim C- Develop and review a user interface. Comp.1-Aim C- Draw conclusions and review data	Revision	Unit 3- Aim C- Implement the use of social media Unit 2-Revision &Exam	Unit 1- Revision Unit 6- Aim C- Develop a website
HT 6	Completion of incomplete work for both Components	Revision	Completion of incomplete work.	Unit 1- Revision &Exam