

Holy Family Catholic School Curriculum Overview Year 10 – Computing (GCSE)



	Curriculum Content	Suggested Activities
Half Term 1 (Sept-Oct)	OCR Computer GCSE - J277 1.1 Systems Architecture 1.1.1 Architecture of the CPU 1.1.2 CPU Performance 1.1.3 Embedded systems 2.1 Algorithms 2.1.1 Computational thinking 2.1.2 Designing, creating and refining algorithms 2.1.3 Searching and sorting algorithms	- Focused Programming Tasks - Understand how instructions are stored and executed within a computer system - Introduces students to the central processing unit (CPU) - Completing homework assignments via Isaac Computer Science and on Google Classroom
Half Term 2 (Nov-Dec)	1.2 Memory and storage 1.2.1 Primary storage (Memory) 1.2.2 Secondary storage 1.2.3 Units 1.2.4 Data storage 1.2.5 Compression 2.2 Programming fundamentals 2.2.1 Programming fundamentals 2.2.2 Data types 2.2.3 Additional programming techniques 2.4 Boolean logic 2.4.1 Boolean logic	- Introduces students to memory and storage, data representation and programming fundamentals - Focused Programming Tasks
Half Term 3 (Jan-Feb)	<u>1.3 Computers networks, connections and protocols</u> 1.3.1 Networks and topologies 1.3.2 Wired and wireless networks, protocols and layers 2.3 Producing robust programs 2.3.1 Defensive design 2.3.2 Testing	- Focused Programming Tasks - Completing homework assignments via Isaac Computer Science and on Google Classroom
Half Term 4 (Feb-Mar)	<u>1.6 Ethical, legal, cultural and environmental impacts of digital technology</u> 1.6.1 Ethical, legal, cultural and environmental impact	- Focused Programming Tasks - Completing homework assignments via Isaac Computer Science and on Google Classroom
Half Term 5 (Apr-May)	1.4 Network security 1.4.1 Threats to computer systems and networks	- Focused Programming Tasks - Completing homework assignments via Isaac Computer Science and on Google Classroom
Half Term 6	Revision	Focused Programming Tasks

	1.4.2 Identifying and preventing vulnerabilities	
(Jun-Jul)	End of year topic assesement	

Examples of Home Learning Tasks	Completing homework assignments via Isaac Computer Science and on Google Classroom
Assessment Tasks, Methods & Frequency	End of topic assessment, extensive use of formative assessments. Mock Exams
Equipment that Students Need	None needed. All provided within the department.

Parent / Carers can help their child by:	Signing up to Google Guardian and checking their Google Guardian account and reminding their child with any upcoming homework deadlines.
Useful Websites	https://Knowitallninja.com , https://issacomputerscience.com , https://edpuzzle.com , https://quizziz.com , https://bbc.co.uk/bitesize , https://senecalearning.com , https://smartrevise.online/
Extra-Curricular Activities & Career Opportunities	STEM club places offered to those studying computing.

Who Can I Contact?	Head of Computing & IT	Mrs Belgrave
	Teachers of Year 10 Computing	Mr Wynter

Holy Family Catholic School Curriculum Overview Year 10 –

Digital IT (BTEC)



	Curriculum Content	Suggested Reading or Extension Activities
Half Term 1 (Sept-Oct)	Component 1: Exploring user interface design principles and project planning techniques Learning aim A: Investigate user interface design for individuals and organisations A1 What is a user interface? Learners will investigate different types of user interface used by individuals and organisations. They will investigate how they vary across different uses, devices and purposes. A2 Audience needs Learners will investigate the varying needs of the audience and how they affect both the type and the design of the interface. A3 Design principles Learners will investigate a wide variety of design principles that provides both appropriate and effective user interaction with hardware devices. A4 Designing an efficient user interface Learners will investigate techniques that can be used to improve both the speed and access to user interfaces.	Research into sub-topics and attempt knowitallninja online test
Half Term 2 (Nov-Dec)	Learning aim B: Use project planning techniques to plan and design a user interface B1 Project planning techniques Learners will investigate different planning tools and design methodologies that can be used to plan, monitor and execute projects. B2 Create a project plan Learners will select suitable project planning techniques to develop a project plan for the development of a user interface for a given brief. B3 Create an initial design Learners will create an initial design using the design principles listed in section A3. Learning aim C: Develop and review a user interface C1 Developing a user interface Learners will use their design to produce a user interface. C2 Refining the user interface Learners will refine their user interface using an iterative process with potential users. C3 Review	Research into sub-topics and attempt knowitallninja online test

	Learners will review the success of the user interface and the use of their chosen project planning techniques.	
Half Term 3 (Jan-Feb)	COMPONENT 2: COLLECTING, PRESENTING AND INTERPRETING DATA Learning aim A: Investigate the role and impact of using data on individuals and organisations A1 Characteristics of data and information Learners will understand the concepts of data and that data is meaningless without converting it into information by adding structure and context. A2 Representing information Learners will understand the different ways of representing information and will be able to explain situations where they would be used. A3 Ensuring data is suitable for processing Learners will understand the methods that can be used to ensure data input is suitable and within boundaries so that it is ready to be processed. A4 Data collection Learners will understand how the data collection method and data collection features affect its reliability. A5 Quality of information and its impact on decision making Learners will understand the factors that affect the quality of information and their impact on decision making A6 Sectors that use data modelling Learners will understand that different types of organisation use data modelling to help make decisions. A7 Threats to individuals Learners will understand the different threats that face individuals who have data stored about them.	Research into sub-topics and attempt knowitallninja online test
Half Term 4 (Feb-Mar)	Learning aim B: Create a dashboard using data manipulation tools B1 Data processing methods Learners will understand how data can be imported from an external source. They will then explore how to apply data processing methods. B2 Produce a dashboard Learners will use a dashboard to select and display information summaries based on a given large data set.	Research into sub-topics and attempt knowitallninja online test

Half Term 5 (Apr-May)	Learning aim C: Draw conclusions and review data presentation methods C1 Drawing conclusions based on the data Learners will draw conclusions on the data set, using their dashboard in order to make recommendations. C2 How presentation affects understanding Learners will assess how well they have used the presentation features listed in B2	Research into sub-topics and attempt knowitallninja online test
Half Term 6 (Jun-Jul)	Component 3: Effective Digital Working Practices Learning Aim A Modern technologies	Research into sub-topics and attempt knowitallninja online test

Examples of Home Learning Tasks	Assess to all lesson & revision content is available on KnowitallNinja. Create mindmaps/flashcards
Assessment Tasks, Methods & Frequency	Components 1 and 2 are assessed through non-exam internal assessment. The non exam internal assessment for these components has been designed to demonstrate application of the conceptual knowledge underpinning the sector through realistic tasks and activities. This style of assessment promotes deep learning through ensuring the connection between knowledge and practice. The components focus on: • The development of core knowledge and understanding of different types of user interfaces, how user interface design principles are used to meet the needs of different users, and how organisations collect, manipulate and interpret data to draw conclusions and make decisions. • The development and application of skills such as project planning, iterative design of a user interface, using data manipulation tools to create a dashboard, interpreting and drawing conclusions from data. • Reflective practice through the development of skills and techniques that allow learners to respond to feedback and to identify areas for improvement. Non-exam internal assessment is delivered through Pearson-set Assignments. These assignments are set by Pearson, marked by the centre and moderated by Pearson.
Equipment that Students Need	For component 1, learners must have access to: • appropriate software to create the prototype • project proposal template (Task 1a) • resource document (Task 3).

	For component 2, learners must have access to: • appropriate data sets. • spreadsheet software.
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Parent / Carers can help their child by:	Signing up to Google Guardian and checking their Google Guardian account and reminding their child with any upcoming homework/assignment deadlines.
Useful Websites	https://www.knowitallninja.com Component 3 revision videos
Extra-Curricular Activities & Career Opportunities	Coding club offered to the year group and STEM club opportunity. Trips to Computing Museum/Bletchley Park

Who Can I Contact?	Head of Computing & IT	Mrs Belgrave
	Teachers of Year 10 Digital IT	Mr Heskey