



Year 9 Computing Curriculum intent

Students will use design and development skills to devise an app to help new students around Grace College. They will then develop their Python programming skills further to create programs and graphics. Finally, students will learn about how spreadsheets can be used to manipulate and present big data in a useful way.

Year 9 Computing Curriculum Overview

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
User Interfaces		Python Programming		Big Data	
Key question					
How can we apply design principles to develop a user interface to help people?	How do we make a functioning user interface?	How do we use Python to develop programs?	How can we draw pictures using Python?	What is the purpose of a spreadsheet, how can it help us present data?	How can I manipulate data to get more information?
Key Vocabulary					
User Interface Design brief Customer requirements Gannt charts Prototype Interaction	Hyperlink Layout Whitespace Navigation Accessibility Evaluation	Python Condition Data type Function For Loop While Loop	Turtle Pen Fill Line Coordinate Heading	Big Data Spreadsheet Bias Data collection Trends Patterns	Cell Column Row Format Sorting Function

	The knowledge you will need to:	How you will apply this knowledge:	This links to:
1	- Before anything is made there is a process of development and design that must take place to ensure time and resources are used as efficiently as possible. - There are a number of design principles that are applied to the development of user interfaces, these are used to ensure user interfaces work effectively - No user interface designer works on their own, teams are a useful way to share ideas and skills	- You will use design principles to develop and prototype a user interface that will help the community or an individual person in some way. - You will develop and critique a set of designs before choosing a final design for your user interface. - You will develop team building skills as you work in groups of 3 to develop your user interface.	BTEC Digital Information Technology Component 1 Principles of User Interface Design where you will look at a brief and apply design principles BTEC Digital Information Technology Component 3 Learning aim A where you study the impact of modern technology on design and the world. iDEA award Psychology of Web-design Worker badge iDEA award CRM Entrepreneur badge
2	- User interfaces are made up of different screens which perform a range of tasks for different purposes - Accessibility features ensure that everyone can use a user interfaces effectively. - Links and buttons help create a way to navigate through a user interface.	- Having planned your user interface design to the brief you will need to create a working prototype of your app design for testing of each screen - You will include accessibility features that ensure the user experience for all is positive in your user interface - You will create navigation elements to enable the user to effectively use the user interface	
3	- Python is a high-level scripted computer programming language that is used to make and design many programs. - Python uses a series of commands and symbols to be able to operate.	- You will recall the key block-based coding functions and commands and learn how these translate into Python - You will apply these commands and protocols to write basic programs using Python	Year 7 Topic 6 Programming, moving from block based to Python programming GCSE Computer science paper 1 topic 1 Computational thinking, using algorithms and decomposition GCSE Computer science paper 2 topic 6, where all the content is focussed around Python programming precepts Turing lab farm bot (homework task) BTEC Digital Information Technology Component 3 Learning Aim D, Planning and communication where you will look at flow charts and abstracting information iDEA award Random Coding Worker badge
4	- Turtle is a set of preloaded commands within Python that helps a computer to draw images - Each function of turtle has a command that builds on python commands	- You will used Python precepts and protocols to use the turtle function - You will draw a series of images using Python and turtle coding	
5	- When data is collected, using a range of methods there are several considerations that should be considered. - Data can be used to identify trends and patterns and help businesses make decisions.	- You will look at the different types of data collection and consider the strengths and weaknesses of each. - You will look at data and identify trends and patterns.	BTEC Digital Information Technology Component 2 Collecting, Presenting and Interpreting Data where you will look at a brief and apply design principles BTEC Digital Information Technology Component 3 Learning aim B where you study the uses of data iDEA award Big Data Worker badge
6	- Spreadsheets are a useful way to take large amounts of data and manipulate to help businesses interrogate it - There are a range of tools such as graphs, charts and dashboards can present data in an easy-to-understand format.	- You will manipulate a spreadsheet to present and organise data in a more accessible way - You will use a range of data presentation methods to help a business interrogate their spreadsheet more effectively.	