



Bedford Greenacre Independent School: Curriculum Overview, Information Technology, Years 1 to 11

Ref: NCCE (National Centre for Computing Education): <https://teachcomputing.org/curriculum>

Juniors						
	Computing systems and networks	Computing systems and networks	Programming A	Data and information	Creating media	Programming B
Year 1	Technology around us Recognising technology in school and using it responsibly.	Digital painting Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	Moving a robot Writing short algorithms and programs for floor robots, and predicting program outcomes.	Grouping data Exploring object labels, then using them to sort and group objects by properties	Digital writing Using a computer to create and format text, before comparing to writing non-digitally	Programming animations Designing and programming the movement of a character on screen to tell stories.
Year 2	Information technology around us Identifying IT and how its responsible use improves our world in school and beyond	Digital photography Capturing and changing digital photographs for different purposes.	Robot algorithms Creating and debugging programs, and using logical reasoning to make predictions.	Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer	Making music Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	Programming quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz
Year 3	Connecting computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	Stop-frame animation Capturing and editing digital still images to produce a stop-frame animation that tells a story.	Sequencing sounds Creating sequences in a block-based programming language to make music.	Branching databases Building and using branching databases to group objects using yes/no questions.	Desktop publishing Creating documents by modifying text, images, and page layouts for a specified purpose.	Events and actions in programs Writing algorithms and programs that use a range of events to trigger sequences of actions.
Year 4	The internet Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Audio editing Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes.	Data logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Photo editing Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	Repetition in games Using a block-based programming language to explore count-controlled and infinite loops when creating a game.
Year 5	Sharing information Identifying and exploring how information is shared between digital systems.	Video editing Planning, capturing, and editing video to produce a short film.	Selection in physical computing Exploring conditions and selection using a programmable microcontroller.	Flat-file databases Using a database to order data and create charts to answer questions.	Vector drawing Creating images in a drawing program by using layers and groups of objects.	Selection in quizzes Exploring selection in programming to design and code an interactive quiz.

SENIORS						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Year 6	Internet communication Recognising how the WWW can be used to communicate	Webpage creation Designing and creating webpages, giving consideration to copyright,	Variables in games Exploring variables when designing and	Introduction to spreadsheets Answering questions by using spreadsheets to	3D modelling Planning, developing, and evaluating 3D computer models of	Sensing Designing and coding a project that captures inputs from a



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	and be searched to find information.	aesthetics, and navigation.	coding a game.	organise and calculate data.	physical objects.	physical device.
Year 7	Impact of technology: collaborating online respectfully Identifying how to use online collaboration tools respectfully. An introduction to the computing lab.	Networks: from semaphores to the internet Recognising networking hardware and explaining how networking components are used for communication.	Using media: gaining support for a cause Creating a digital product for a real-world cause.	Programming essentials in Scratch: part I Applying the programming constructs of sequence, selection, and iteration in Scratch.	Programming essentials in Scratch: part II Using subroutines to decompose a problem that incorporates lists in Scratch.	Modelling data: spreadsheets Sorting and filtering data and using formulas and functions in spreadsheet software.
Year 8	Developing for the web Using HTML and CSS to create webpages.	Representations: from clay to silicon Representing numbers and text using binary digits.	Mobile app development Using event-driven programming to create an online gaming app.	Media: vector graphics Creating vector graphics through objects, layering, and path manipulation.	Computing systems Exploring the fundamental elements that make up a computer system.	Introduction to Python programming Applying the programming constructs of sequence, selection, and iteration in Python.
Year 9	Python programming with sequences of data Manipulating strings and lists. Creating a programming project.	Media: animations Creating 3D animations through object manipulation, and tweaking and adjusting lighting and camera angles.	Data science Using data to investigate problems and make real-world changes.	Representations: going audiovisual Representing images and sound using binary digits.	Cybersecurity Identifying how users and organisations can protect themselves from cyberattacks.	Physical computing Sensing and controlling with the micro:bit.

GCSE Computer Science						
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Year 10	<ul style="list-style-type: none"> •Introduction to the course •OCR 1.1 Systems architecture •OCR 1.2 Memory and storage – Part 1 •Plus programming 	<ul style="list-style-type: none"> •OCR1.2 Memory and storage – Part 1 •OCR1.2 Memory and storage (Part 2) •Plus programming 	<ul style="list-style-type: none"> •OCR 1.3 Computer networks, connections and protocols •Plus programming 	<ul style="list-style-type: none"> •OCR 1.3 Computer networks, connections and protocols •OCR 1.4 Network security •Plus programming 	<ul style="list-style-type: none"> •OCR 1.4 Computer networks, connections and protocols •OCR 1.5 System software •Plus programming 	<ul style="list-style-type: none"> •OCR 1.6 Ethical, legal, cultural and environmental concerns • text-based adventure game
Year 11	<ul style="list-style-type: none"> •OCR 2.2 Programming fundamentals •OCR 2.1 Algorithms •Plus exam revision lessons 	<ul style="list-style-type: none"> •OCR 2.1 Algorithms •Plus paper 2 exam revision 	<ul style="list-style-type: none"> •OCR 2.3 Producing robust programs •Plus paper 2 exam revision 	<ul style="list-style-type: none"> •OCR 2.4 Boolean logic •OCR 2.5 Programming languages and IDEs •Plus paper 2 exam revision 	As required	