Key Stage 3

Subject: ICT

Intent

"Our world is digital. An understanding of computers will enable students to make informed choices in their digital world." A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing is the term that looks at three different strands that we offer to learners of our subject: Computer Science, Digital Media & Digital Literacy. Computer science is the scientific and practical study of computation and how computation may be applied to the solution of problems. Digital Media is the creative approach to researching, planning and developing products to communicate in the digital world. Digital Literacy is the ability to effectively, responsibly, safely and critically navigate, evaluate and create digital artefacts using a range of digital technologies.

At the end of KS3 our vision is that the girls at FBA:

- Be aware of the opportunities and limitations of living in a digital world
- Understand the core principles of information and computation, understand how digital systems work and how to put this knowledge to use through programming.
- Be equipped to use technology to create programs, systems and a range of content.
- Become digitally literate – able to use computers to express themselves and develop their ideas.

Programme of study and assessment

	Autumn Term	Spring Term	Summer Term
Year 7	Introduction to school network – How to log on to the school systems and use the school system safety and securely. E-safety - Recognising the risks associated with the use of digital technology and the measures to take in order to minimise the risks Algorithms - Understanding concepts of problem solving through	Modelling - Spreadsheet skills focusing on the use of formulas and functions and formatting spreadsheets appropriately. Binary - Understanding how computers store data. Pupils grasp what binary digits are by associating them with familiar sets of symbols, such as	Scratch - Introduction to programming skills and sequencing, variables, selection, and count-controlled iteration Programming - Text-based programming skills. Problem solving skills. Logic skills, arithmetic expressions.

	decomposition and creating precise algorithms to solve problems.	letters and decimal digits.	
Assessment	Assessment for E-safety will be through classroom-based tasks involving planning and creating a publication for a specific audience highlighting online risks and measures to minimise the risks and end of unit test. Algorithms will be assessed through classroom-based task involving students planning flow diagrams to solve a given problem then simulating their solution using FLOWOL and end of unit test.	Assessment for Modelling will be through classroom tasks involving planning and creating a spreadsheet model for a given scenario and an end of unit test based on spreadsheet skills. Assessment for Binary will be through an end of unit test by converting binary to denary and denary to binary and binary addition.	Assessment for Scratch will be through completing a project and students' evaluation of their project will be assessed. Assessment of Python will be through completing small tasks where pupils will show that they can write basic code.
Year 8	<u>How computer work</u> – Understand different hardware components and software that make up a computer system and their function. Looking at Input and Output devices, Storages devices and cloud computing.	<u>Web design</u> – Understand the principles of good web design and the different methods used to create web pages including using HTML. <u>Introduction to Databases</u> Creating relational databases, queries and reports.	<u>Small Basic –</u> This unit is an **introduction to programming in** a textual language designed to make programming easy and approachable for beginners. Simple programs using the Text window are used to introduce input, output and selection. **<u>Animation Project</u>** Creative project involving students working collaboratively to produce a computer-generated animation.

Assessment	Assessed through homework, classwork tasks, and an end of unit test.	Web design unit will be assessed through tasks and completing a website project and students' evaluation of their website. Databases unit will be assessed with pupils creating a database showing skills of data collection, creating a form, query and linking tables. Alongside this will be an end of unit test.	Assessment of Small Basics will be through completing small tasks where pupils will show that they can write basic code. Animation unit will be assessed through tasks and completing a website project and students' evaluation of their website.
Year 9	<u>Understanding Computers</u> In this unit we will cover the basic principles of computer architecture and binary. Pupils will revise some of the theory on input, output and storage covered in previous learning and continue to look at the Input-Process-Output sequence and the Fetch-Decode-Execute cycle through practical activities. Pupils will then look at some simple binary to decimal conversion and vice versa, and learn how text characters are represented using the ASCII code. This will be followed by some simple binary addition. Pupils will learn more in depth how storage devices represent data using binary patterns and physically save these patterns. Finally, they will look at a brief	<u>Advanced Spreadsheets</u> This unit will refresh memory from year 7 and look at more advanced features of spreadsheets. <u>Project Life Cycle</u> This unit will cover Project Life Cycle and the main phases that are needed when creating a project and how one phase is linked to another.	<u>Python 2</u> This unit will be a follow on from Introduction to Python and will look at advance features of this programming language.

	history of communication devices, how new technologies and applications are emerging and the pace of change.		
Assessment	Assessment will be through classwork, homework, whole class group presentation and an end of unit test.	Assessment for Advanced Spreadsheets will be through classroom tasks involving advanced features of Excel for a given scenario. Assessment for the Project Life Cycle will be through group presentation.	Assessment of Python will be through completing tasks where pupils will show that they can write code based on particular scenarios.