Computer Science

Key Stage 3

Year 7

Computer Basics – The history of computers is explored dating back to WW2. The development of computers is followed through the ages. Learners explore modern day technology, identifying internal and external components of a computer and also the development and use of the internet.

E-Safety, website design – learners look at the dangers of going online. They will design and create a website, incorporating an understanding of copyright laws.

Flowol – learners develop their logical thinking skills. An introduction to programming where the use of computers in everyday life is explored, ranging from traffic lights to lighthouses, learners learn how to develop algorithms through diagrams.

Search and select - this unit involves developing transferable research skills, checking for accuracy, reliability and trustworthiness complying with copyright laws. Understanding sources of useful and reliable information, accurately referencing sources.

Modelling– learners have the opportunity to learn about the functionality and formulas within spreadsheets.

Year 8

Algorithms - using pseudo code to write basic algorithms. using bucket sort and bubble sort to sort algorithms.

Boolean and Binary - learners will learn how to convert binary to denary. Understanding 4 bit conversion, exploring computer memory and processes.

Database design - Learners build on their database knowledge by recognising the use of databases in everyday life. Learners then go onto create complex queries.

Scratch - An introduction to basic programming, this unit is a multimedia authoring tool which allows learners to program their own games.

Photoshop, Fireworks and Flash - This involves creating graphical elements and using a range of tools and techniques in a specialist graphics package.

Web Publishing - Learners will plan and create a website using Dreamweaver, this includes using tables and creating buttons for a specified audience.

Kodu – a game making unit which gives learners the opportunity to create their own characters and world.

Computers- a unit which explores computer hardware and software. Researching and identifying input, output, storage devices and operating systems.

Year 9

App Shed - Learners build on their database knowledge by recognising the use of databases in everyday life. Learners then go onto create complex queries.

Graphics- Photoshop, Fireworks and Flash - This involves creating graphical elements and using a range of tools and techniques in a specialist graphics package.

ICT in society - Learners will plan and create a website using Dreamweaver, this includes using tables and creating buttons for a specified audience.

Kodu – a game making unit which gives learners the opportunity to create their own characters and world.

Programming- a unit which explores computer hardware and software. Researching and identifying input, output, storage devices and operating systems.

Key Stage 4

GCSE ICT

Living in the digital world - In this unit, learners explore how digital technology impacts on the lives of individuals, organisations and society. They learn about current and emerging digital technologies and the issues raised by their use in a range of contexts (learning and earning, leisure, shopping and money management, health and wellbeing and on the move). They develop an awareness of the risks that are inherent in using ICT and the features of safe, secure and responsible practice.

Using Digital Tools - This is a practical unit. learners broaden and enhance their ICT skills and capability. They work with a range of digital tools and techniques to produce effective ICT solutions in a range of contexts. They learn to reflect critically on their own and others' use of ICT and to adopt safe, secure and responsible practice.

GCSE Computing

Computer systems and programming - This unit covers the body of knowledge about computer systems on which the examination will be based.

Practical investigation - An investigative computing task, chosen from a list provided by OCR, Controlled assessment which assesses the following: research, technical understanding, analysis of problem, historical perspective, use of technical writing skills, recommendations/evaluation.

Programming Project - Design, develop and test a solution to a problem.

Edexcel GCSE ICT http://www.edexcel.com/quals/gcse/gcse10/ict/Pages/default.aspx

OCR GCSE Computing http://ocr.org.uk/qualifications/gcse-computing-j275-from-2012/

Key Stage 5

BTEC Nationals IT Level 3

Communication and employability skills for IT - The aim of this unit is to ensure that learners understand both the personal attributes valued by employers and the principles of communicating effectively whilst developing effective communication skills and addressing
their own personal development needs.

Computer Systems - The aim of this unit is to enable learners to understand the components of computer systems and develop the skills needed to recommend appropriate systems for business purposes and set up and maintain computer systems.

E-commerce - The aim of this unit is to ensure that learners know the technologies involved in e-commerce, understand the impact of e-commerce on organisations and on society, and that they are able to plan e-commerce strategies.

Human Computer Interaction - The aim of this unit is to ensure learners know the impact Human Computer Interaction (HCI) has on society, economy and culture provides the basic skills and understanding required to enable learners to design and implement human computer interfaces.

Digital Graphics - This unit aims to enable learners to understand different types of digital graphics images and file formats and to be able to create, edit, modify and manipulate digital images of various types and complexity

Multimedia Design - The aim of this unit is to enable learners to understand how multimedia is used in business and to be able to create multimedia products to meet business needs.

AQA ICT http://www.aqa.org.uk/subjects/ict-and-computer-science/as-and-a-level/information-and-communication-technology-2520

Edexcel BTEC IT http://www.edexcel.com/quals/nationals10/it/Pages/default.aspx

GCE Information Technology (to be replaced with Computer Science (2015)

Practical Problem Solving in the Digital World - Courses based on this unit should provide learners with the opportunity to develop their knowledge and understanding of the development of ICT systems through practical experience in using a range of applications software in a structured way. learners should then be able to apply the skills, knowledge and understanding gained from this practical work to the solution of problems.

Living in the Digital World - This unit is designed to give learners the wider
picture of the use of ICT and to enable the understanding of basic terms and concepts involved in the study of the subject. learners should be able to discuss and comment on issues from a position of knowledge and they can do this only if they have the knowledge and understanding that underpins the subject.

The use of ICT in the Digital World - This unit looks at the fast changing subject of ICT,
including developments in technology and ICT system capabilities, and how this might affect the world that makes use of ICT.

Practical Issues Involved in the Use of ICT in the Digital World - This unit provides learners with the opportunity to complete a substantial project involving the production of an ICT-related system over an extended period of time. In so doing, learners will enhance
their transferable practical skills. The unit is designed to be taught alongside or after
Unit 3 and topics covered in Unit 3 may provide the stimulus for work for this Unit 4, but the centre or student can explore new areas of ICT if they wish.

For further information, please contact Mr W Vaughan, Curriculum Leader for ICT