HT Key Stage 3 Computing Scheme of Work

Key

C - Core Content (You *must* teach this)

E - Expansion Content (You *could* teach this, if you have time)

Notes

- Each half term will have **four** core lessons. These **must** be taught and students will be tested on these topics.
- Each half term may have expansion content. These will be included on the tests but can be taken out if not taught.
- You **must** move on to expansion content if you have lessons remaining for that half term.
- Each half term will have **one** homework task and **one** assessment lesson.
- Assessment Lessons must take place on the **final lesson** in **odd** numbered Half Terms and the **second to last lesson** in **even** numbered Half Terms due to the data drop window sometimes being early. These are all on Microsoft Forms and will be sent to students via their Student Email.
- **Programming will be in Year 8 and 9** and will cover **Python** and **HTML/CSS** as both languages will be taught at GCSE.

Reasoning

The updated Key Stage 3 Curriculum builds on the previous curriculum in following all aspects of the National Curriculum areas and will give students all the skills and knowledge in order to take GCSE Computer Science or BTEC Digitial Information Technology.

New units have been introduced to further modernise the curriculum to face new advancements and developments in Computer Science, namely the rise of Artificial Intelligence and particularly Generative AI in wider society.

Students will be able to learn the foundations of Artificial Intelligence as well as best practice, ethical concerns and risks that have been brought about from this great change in the discipline.

Students will also learn about Data Science, a new unit that leads to a greater understanding of Data Analysis, a rising discipline in Computer Science. With large organisations making use of large datasets more than ever, it is important for our

students to receive the knowledge of how data can be used to make decisions within organisations and how data can be made reliable. This also leads to greater understanding within the context of Component 2 of BTEC DIT as well as Relational Databases in Computer Science and BTEC Nationals IT.

The Introductory Unit in Year 7 has seen some changes to ensure that students get basic knowledge of File Management, Keyboard Usage and Email Applications in order for students to be better prepared for further study. Staff had identified this as a increasing weakness in our students over time, in line with national trends of younger people becoming less proficient with computer usage.

Other units within the previous curriculum have received tweaks in order to make the topics more engaging and exciting for our students as well as receiving updates to bring content to more modern standards. Units now have Core Lessons which must be taught in order for students to get the basic knowledge of the topic as well as optional Expansion Lessons which are designed to broaden knowledge for students within the unit.

Assessments are now set to be every Half Term so that students are regularly assessed on topic content, with additional recall questions for the year's previous covered content. Assessments will continue to be taken online with automatic marking to reduce workload for staff.

Year 7

HT1 - Introduction to Computing I

Core Lessons

C1 - Introduction to Computing

C2 - Functionality of a Keyboard

C3 - Email Etiquette

C4 - File Management and Microsoft OneDrive

Expansion Lessons

E1 - Microsoft Word Basics

E2 - Mail Merge

HT2 – E-Safety and Digital Literacy

Core Lessons

C1 - Social Media and Cyber Bullying

C2 - Digital Footprint

C3 - Passwords and Authentication

C4 - Artificial Intelligence and E-Safety

Expansion Lessons

E1 – Phishing and Online Scams

HT3 – Spreadsheets (also Year 8 HT1 in 2025 only)

Core Lessons

C1 - Entering and Editing Data

C2 - Formatting and Conditional Formatting

C3 - Basic Formulae

C4 - CountIf and VLookup

Expansion Lessons

E1 - Creating Pivot Tables and Charts

E2 – Data Validation

HT4 - Computer Systems

Core Lessons

C1 - Input and Output Devices

C2 - Computer Components

C3 - Hardware and Software

C4 - Boolean Logic - Truth Tables

Expansion Lessons

E1 - Boolean Logic - Logic Circuits

E2 - Operating Systems

HT5 - Binary and Data Representation

Core Lessons

C1 - Base Conversion - Binary to Decimal

C2 - Base Conversion - Decimal to Binary

C3 - ASCII and Unicode

C4 - Image Representation

Expansion Lessons

E1 - Storage Devices and File Size

E2 - Audio Representation

E3 - Hexadecimal (Binary to Hexadecimal)

HT6 – Artificial Intelligence (also Year 8 HT3 in 2025 only)

Core Lessons

C1 – The History of Artificial Intelligence

C2 – Artificial Intelligence in Video Games

C3 – What is Generative Artificial Intelligence?

C4 – Using GenAI Systems.

Expansion Lessons

E1 – Images and GenAI

E2 – Machine Learning

Year 8

HT1 - Computer Networks

Core Lessons

C1 - What is a Computer Network?

C2 - Transmission Media

C3 - Wired and Wireless Networks

C4 - Types of Network

Expansion Lessons

E1 - What is The Internet?

E2 - Cloud Computing

E3 - Network Protocols

HT2 - Cyber Security

Core Lessons

C1 - Malware

C2 - Social Engineering

C3 - Protecting Data

C4 - Computer Hackers

Expansion Lessons

E1 - Impact of Cyber Attacks I

E2 - Impact of Cyber Attacks II

HT3 – Data Science (starting 2026-27)

Core Lessons

C1 – Decision Making

C2 – Data Gathering Methods

C3 – Data Reliability

C4 – Making Recommendations

Expansion Lessons

E1 – Big Data and Social Media

HT4 - Algorithms

Core Lessons

C1 - What is an Algorithm?

C2 - Creating a Flow Chart

C3 - Search Algorithms - Linear Search

Expansion Lessons

E1 - Search Algorithms - Binary Search

E2 - Sorting Algorithms – Bubble Sort

HT5 - Python Programming I

Core Lessons

C1 - What is a Programming Language?

C2 - Our first Python Program

C3 - Syntax and Logic Errors

C4 - Maths in Python

Expansion Lessons

E1 – Testing Programs

HT6 - Python Programming II

Core Lessons

C1 - Selection Statements

C2 – Iteration Statements

C3 – Arrays and Lists

C4 – Random Number Generation

Expansion Lessons

E1 – Testing Programs

E2 - Subroutines

Year 9

HT1 - UX and Website Design

Core Lessons

C1 - What is a User Interface?

C2 - Audience Needs

C3 - Design Principles

C4 – Website Design Principles

Expansion Lessons

E1 – Website Domains and Hosting

E2 – How Search Engines Work

HT2 - HTML and CSS Programming Project I

Core Lessons

C1 – Website Foundations

C2 – Text Formatting

C3 – Adding Images and Links

C4 – Colour, Style and CSS

Expansion Lessons

E1 – The Div Tag

E2 – Website Audio and Video

HT3 - HTML and CSS Programming Project II

C1 – Creating a Cultural Food Website

C2 – Testing and Feedback

C3 – Project Evaluation

HT4 - Ethics, Environmental Impacts and Emerging Technologies

C1 - Autonomous Cars

C2 - Wearable Technology

C3 - Internet of Things (IOT)

C4 - Extended Reality

Expansion Lessons

E1 - Cybernetic Implants

HT5 – App Development Part I

Core Lessons

C1 – Creating a Project Proposal

C2 – Gantt Charts and Timescales

C3 – Creating a Wireframe Design

Expansion Lessons

E1 - Start HT6 content early

HT6 – App Development Part II

C1 - Creating a Prototype

C2 – Testing and Feedback

C3 – Project Evaluation