



## Course Outline

### ICT year 10

*Inspiring excellence, empowering global minds*

#### Overview

This course is designed to expand student's knowledge of both theoretical and practical aspects of ICT. To achieve this, students will be using a variety of different software's to expand on their practical skills and will be learning about theoretical concepts through visual, verbal and practical lessons. By the end of the course, students will have fundamental knowledge on how ICT was conceptualized, its importance now and in our future.

#### Learning Outcomes

The aims of the ICT Syllabus are to encourage and enable students to:

- To gain a better understanding of the uses of technological devices.
- Acquire knowledge on how different devices work.
- Become fluent in the fundamentals of ICT.
- Understand how the use of different devices along with software makes a computer system.
- Become competent in using different software's such as excel, PowerPoint and word.
- Use research to be able to clearly and fluently explain their ideas.
- Carry out discussions to express their thoughts on specific ICT topics.

#### Ongoing Objectives

##### Theory

- To listen and respond appropriately to adults and their peers
- To ask relevant questions to extend their understanding and knowledge
- To articulate and justify answers, arguments and opinions
- To learn advantages and disadvantages of different types of devices/software's
- To maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments
- To be able to explain and contrast between different theoretical concepts.
- To expand current knowledge of how different types of devices/software's work and how they can be aided with other devices/software.
- To consider and evaluate different viewpoints, attending to and building on the contributions of others.
- Continue to grow and expand on the use of key terminology.

**Practical**

- To use relevant strategies to build their practical skills
- Expand knowledge on different software that can be used for different types of projects.
- Select appropriate software's to use for different tasks.
- To learn how different software perform tasks and how they are best used.
- Practice using different software's to consolidate practical skills.
- Understand the benefits of using these software's in the real world.

**Unit Overviews****Term 1****Chapter 17 – Presentations****Approximate length: 3 weeks**

In this chapter, students will learn practical skills on how they can create a professional presentation. The chapter will focus on key skills such as master slides, animations, importing videos and pictures, using slide templates and how to use notes. All these skills will develop students understanding of how the software works and how they can use the skills to present themselves.

Specific National Curriculum Objectives Covered:

- To develop practical skills in creating presentations using professional software
- To understand the different applications of an effective presentation
- To be able to use a variety of different software's
- To know how to create master slides to give a presentation a consistent look.
- To incorporate different features to create an interactive presentation

**Chapter 1 – Digital devices****Approximate length: 8 weeks**

In the first chapter, students will explore the purpose and use of various digital devices, including GPS units and smartphones for real-time location tracking. We'll examine the roles of mainframe computers and microprocessors in large-scale data processing. The differences between laptops and desktops in terms of portability, power, and upgradability will be highlighted. We'll describe the function of the CPU and how its speed is measured in gigahertz (GHz). Additionally, we'll compare mobile phones and tablets, discuss the convergence of device features into multifunctional devices like smartphones, and compare mobile phone network features such as coverage, data speeds, and reliability. This overview will provide a solid foundation for understanding modern digital devices and computing technology.

Students will understand the purpose of systems software and applications software, including the functions and tools of operating systems and system software. They will learn to differentiate between bitmap and vector graphics, and gain skills in creating vector graphics and editing bitmap graphics. The lesson will cover the role and functions of operating systems, the purpose and use of various application software, and an overview of different types of software licenses.

Students will study about **RAM (Random Access Memory)** and **ROM (Read-Only Memory)**, describe their characteristics, and discuss the impact of RAM size on user experience. They will identify types of input peripherals (e.g., keyboards, mice) and output peripherals (e.g., monitors, printers), and match storage peripherals (e.g., external hard drives, USB flash drives, NAS devices) to specific needs. Additionally, students

will differentiate between storage devices (e.g., HDDs, SSDs) and storage media (e.g., optical discs, flash memory) by describing their characteristics. Lastly, they will accurately use terms for storage capacity, including bits, bytes, kilobytes (KB), megabytes (MB), gigabytes (GB), and terabytes (TB), to measure and describe data and storage sizes.

Specific National Curriculum Objectives Covered:

- To learn the basics and fundamentals of computer devices
- To know the different components used in creating a computer system
- To be able to distinguish the different purposes of different types of components
- To understand the impact of combining different types of hardware components
- To learn about the different types of computer software
- To know how hardware and software tie in together to create an effective computer system

**Chapter 15 – Document production**

**Approximate length: 3 weeks**

In this chapter, students will explore the skills needed to produce a quality document. This chapter will give students the opportunity to learn skills such as mail merge, headers, footer, margins and file types etc. When combined students will have the skill and know how to create a good quality document.

Specific National Curriculum Objectives Covered:

- To be able to produce professional documents
- To know how to use different elements in MS Word to create different types of documents
- To create template documents and mail merge them
- To insert special automated fields in a mail merged document
- To know how different tools work in MS Word
- To learn the difference between widows and orphans

**Term 2**

**Chapter 2 – Digital Communications and Connectivity**

**Approximate length: 5 weeks**

Students will explore how and why digital devices communicate directly and via networks, comparing Wi-Fi for high-speed, long-range connections to Bluetooth for short-range, low-power connections. They will learn about network operating systems, device identification through IP and MAC addresses, and the function of wired (e.g., cables, switches) and wireless components (e.g., routers, access points). Additionally, students will describe the roles of web browsers, ISPs, search engines, and filter software in internet use, and differentiate between data (raw facts) and information (processed data with meaning).

Students will explore factors influencing data transfer speed and volume, including bandwidth, latency, and network congestion. They will compare wired communication, which offers higher speed and reliability, to wireless communication, which provides flexibility and ease of installation. The features of broadband, mobile broadband, and cellular networks will be examined. Students will understand the significance of bandwidth (data transfer capacity) and latency (delay in data transfer). They will learn about peer-to-peer and client-server networks, the role of servers in managing resources, and the benefits of local area networks (LANs) and client-server networks, such as improved security, centralized control, and efficient resource sharing.

Specific National Curriculum Objectives Covered:

- To understand and apply the fundamental principles and concepts of connectivity, including abstraction and logic
- To understand some networking hardware that is required
- To understand the difference between IP and MAC addresses and their roles within a network
- To understand hardware and software components that make up computer systems, and how they communicate with one another and with other systems
- To understand the impact of broadband and bandwidth when connecting to the internet
- To understand the benefits to users of using a LAN and client- server network

**Chapter 20 – Database management****Approximate length: 5 weeks**

This chapter is designed to help students to identify various data types (e.g., text, numbers, dates) and understand the structure of a database, including tables, fields, and records. They will create a database structure and explain the importance of validation to ensure data accuracy. Students will input and sort data, use search/query functions to retrieve specific information, and produce reports to present the data clearly and effectively.

Specific National Curriculum Objectives Covered:

- To distinguish between the different types of data and when to use each type
- To understand how databases are structured using tables, fields and records
- To learn how to sort and filter data in a database using queries
- To be able to create reports and validate data

**Term 3****Chapter 3 – Operating Online****Approximate length: 6 weeks**

Students will explore the risks to data and information, such as hacking and phishing, and learn methods for securing data online. They will understand the use and protection of online payment systems, bank cards, and contactless payments. Students will gather information from diverse sources, select and use appropriate sources, and effectively use search engines while evaluating information for accuracy, relevance, and bias. They will discuss copyright and plagiarism issues, describe the key features, functions, and target audiences of various online communities, and understand how these communities facilitate global communication and collaboration. Additionally, students will learn to work safely and responsibly with ICT, understand responsible use and acceptable behavior policies, and know how to stay safe online.

Students will explore the key features and functions of online communities and identify their target audiences. They will learn how these communities are used for global communication and collaboration. The importance of working safely and responsibly when using ICT will be emphasized, including understanding and adhering to responsible use and acceptable behavior policies. Students will also learn strategies to stay safe online, ensuring they can participate in online communities securely and ethically.

Students will learn about data protection, including legal requirements for storing personal data and individuals' legal rights. They will understand how copyright legislation affects the use of digital information and media, and recognize that individuals' movements and communications can be monitored. Additionally,

students will explore sustainability issues related to digital devices and strategies to mitigate environmental impact. They will also learn about health and safety issues arising from ICT use and how to minimize these risks.

Specific National Curriculum Objectives Covered:

- To learn about the different risks to computer systems and your personal data
- To be able to distinguish how data could be protected online
- To know how to responsibly use ICT and understand acceptable use policy
- To be able to create different multimedia elements based on the audiences needs
- To carry out research on audience opinions
- To debate whether the internet should be policed or not

### Assessment

**Formative:** Throughout the chapters, the students will complete graded work, quizzes and differentiated activities, which allows the teacher to assess the student's attainment and inform their planning.

For each chapter the students complete a pre and post quiz. This allows us to see progress across the units.

**Summative:** At the end of each term, students will complete internal and standardised tests. This allows us to measure the students' progress throughout the term and year. At the end of the academic year, the students complete a closed book IGCSE style exam to test both practical and theoretical knowledge.