# Curriculum

Digital Technology is offered as an option subject at Key Stage 4.

In Key Stage 4 students' study for City & Guilds Tech Award in Digital Technology. The course offers an overview of how digital technology is used and how it has impacted peoples' lives.

All topics covered are based on core knowledge (provided in a knowledge organiser) which is then applied within their synoptic assessment and external exam.

## Year 10

The purpose of the Y10 curriculum is to provide an understanding of the issues and concepts surrounding digital technology. Students will complete their synoptic assessment in year 10.

### Term 1 –

#### UNIT 252 1.2 TARGET AUDIENCES

In this topic students will learn about the characteristics of target audiences and the different ways in which they engage with digital communications.

#### UNIT 251 3.1 CYBER SAFETY

In this topic students will learn about the personal risks associated with digital engagement and ways in which they can be mitigated, including cyber bullying, harassment, grooming, sexting and identity theft. They will examine the policies that impact on their own use of digital engagement.

#### UNIT 251 3.2 DIGITAL TECHNOLOGIES LEGISLATION

In this topic students will learn about the legislation that affects the use of digital technologies, including Data Protection Act, Computer Misuse Act, Copyright Design and Patents Act, Communication Act and Health and Safety Regulations.

#### UNIT 253 3.1 WEB DESIGN CONSIDERATIONS

In this topic students will understand the considerations when designing web pages including software, protocols, cross platform compatibility, cyber safety, accessibility and legal considerations.

#### UNIT 253 3.2 CREATING LINKED WEB PAGES

In this topic students will learn how to create a website of linked pages that incorporate a range of suitable assets, including text, image files, video files and audio files.

#### UNIT 254 2.1 RECORDS, FILES AND STORAGE SIZES

In this topic students will investigate the types of data that can be stored electronically and in a database. They will examine how records are made up from pieces of information and how saving multiple records impacts on the storage requirements. They will learn the method used to calculate the size of a record and specify the types of data stored in each record.

#### UNIT 254 2.2 SOFTWARE USED IN DATA AND INFORMATION HANDLING

In this topic students will learn about the software used in data processing and management, they will examine the structures of spreadsheets and databases.

### Term 2 -

#### UNIT 254 3.1 PLANNING DATABASES

In this topic students will learn how to plan and design a relational database to store and analyse information.

#### UNIT 254 3.2 CREATING DATABASES

In this topic students will learn how to implement the planned database, including producing reports to analyse data and export data to create a mail merge.

#### SYNOPTIC ASSESSMENT

The synoptic assignment is externally set, internally marked and externally moderated. The assignment requires candidates to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the content area. Students will be judged against the assessment objectives. Students are required to draw together their learning from across the qualification to solve problems or achieve specific outcomes by explicitly assessing this through the synoptic assignment component. The synoptic assessment will require students to use a range of software, including a database and web authoring software to create products that meet the set criteria.

### Term 3 -

#### UNIT 251 1.1 PURPOSE OF SOFTWARE

In this topic students will learn the purpose of using different types of application software including databases, spreadsheets, presentation software, word processing, web authoring software and specialist software.

#### UNIT 251 1.2 APPLICATIONS AND STORAGE

Students will learn the different file extensions and their associated applications. Students will learn the types of storage media that can be used to store data, including optical, magnetic, solid-state and cloud storage.

#### UNIT 252 1.1 DIGITAL COMMUNICATION CHANNELS

In this topic students will evaluate different digital communication channels in order to select the most suitable method of communicating information to different audiences, including internet, e-mail and mobile technologies.

#### UNIT 252 1.2 TARGET AUDIENCES

In this topic students will examine the characteristics of target audiences and the different ways in which they engage with digital communications.

#### UNIT 252 1.3 LEGISLATIVE AND LOCAL CONSTRAINTS

In this topic students will learn the key points of legislation and local constraints that impact on digital communications. Legislation will include Computer Misuse Act, Copyright

constraints, Data Protection Act and Communication Act. Local constraints will include limitations set by safe usage policies and file naming conventions.

### UNIT 252 1.4 RISKS ASSOCIATED WITH DIGITAL COMMUNICATION

In this topic students will examine the risks associated with using digital communication and understand mitigation strategies, including identify theft, phishing, grooming, cyber bullying and sexting.

## Year 11
### *Term 1 -*
### UNIT 251 2.1 ADVANTAGES AND DISADVANTAGES OF NETWORKS

In this topic students will learn about the main advantages and disadvantages of networks.

### 2.2 NETWORK COMPONENTS

In this topic students will examine the different components that are used to implement networks including network topologies and types of networks used. Students will learn about the functions of the main interconnection devices used to implement networks, including routers, switches, wireless access points and network interface cards. Students will learn the types of media used to implement networks and where they are used, including copper cables, fibre optic cables and wireless networks.

### 2.3 NETWORK PROTOCOLS

In this topic students will examine the purpose of a network protocol. Students will learn how common protocols are used on networks, including IP, POP3, HTTP and HTTPS.

### 2.4 NETWORK SECURITY

In this topic students will learn the methods of securing networks, including system level security, network level security and physical security.

### UNIT 253 1.1 DIFFERENT FILE FORMATS AND THEIR USES

In this topic students will learn different types of file formats and their characteristics including productivity suite, images, audio and video formats. Students will examine how file formats can be used creatively in publications and electronic publications as well as how images are optimised for printing and electronic publication.

### UNIT 253 1.2 IMAGE COMPRESSION AND OUTPUT

In this topic students will learn about the application of file compression and file output formats to meet specific requirements such as high quality or speed of use.

### UNIT 253 1.3 CREATING AND EDITING IMAGES

In this topic students will understand how to create and edit images using vector and raster file types.

### UNIT 252 2.1 COMMUNICATION SOFTWARE

In this topic students will learn about the different types of software available to create digital content for communication, including presentation, word processing, desk top publishing, image editing, website publishing and messaging and email software.

### UNIT 252 2.2 PRODUCING DIGITAL CONTENT

In this topic students will examine how to produce digital content to communicate information to a target audience, including word processing/desktop publishing software, presentation software and image editing.

### *Term 2 -*

### UNIT 253 2.1 CREATIVE USE OF DIGITAL CONTENT

In this topic students will examine factors that should be considered when using image, audio, video, podcast, social media animation and gaming files.

### UNIT 253 2.2 GRAPHS AND CHARTS

In this topic students will learn the characteristics and uses of a range of graphs and charts, including line graphs, bar charts, pie charts, scatter charts and venn diagrams.

### UNIT 253 2.3 USING DIGITAL TECHNOLOGY TO COMMUNICATE

In this topic students will be able to select and use a range of techniques and file formats. These will be selected to engage an audience in order to improve communication of text, image and numerical information within word processed documents, interactive documents, presentation software, spreadsheets and mobile apps.

Students will sit their external examination at the beginning of the second ½ of this term.

### SYNOPTIC ASSESSMENT RESIT (IF REQUIRED)

Students can resit the synoptic assessment in year 11 if they did not achieve their required grade in year 10. The synoptic assignment is externally set, internally marked and externally moderated. The assignment requires candidates to identify and use effectively in an integrated way an appropriate selection of skills, techniques, concepts, theories, and knowledge from across the content area. Students will be judged against the assessment objectives. Students are required to draw together their learning from across the qualification to solve problems or achieve specific outcomes by explicitly assessing this through the synoptic assignment component. The synoptic assessment will require students to use a range of software, including a database and web design software to create products that meet the set criteria.

### *Term 3 -*

### RECAP UNIT 251

In this unit students will revisit application software, networks and cyber safety and compliance. Students may ask questions such as:
- What file formats are associated with application software?
- What are the commonly used types of storage media?
- Why use a network?
- What components make up a network?
- What are the personal risks when using the internet?

- What laws affect my use of digital technologies?

### RECAP UNIT 252

In this unit students will revisit digital communication technologies and software used to communicate digital content. Students may ask questions such as:
- What channels are available for digital communication?
- How do I identify the target audience?
- What software and tools are available for different communication needs?
- What risks are associated with digital communication?

### RECAP UNIT 253

In this unit students will revisit file formats and their uses, communicating information creatively and designing, developing and creating web pages. Students may ask questions such as:
- What are the characteristics of different file formats and types?
- What is file compression and what are coding/decoding (CODECS)?
- How can I communicate information in different ways?
- What must I consider when creating web pages?

### RECAP UNIT 254

In this unit students will revisit data collection methods, data storage and software and planning and implementing databases. Students may ask questions such as:
- How can a researcher gather data?
- How can the researcher make sure data is of good quality?
- How can data be presented clearly?