

GCSE



WJEC GCSE in DIGITAL TECHNOLOGY

APPROVED BY QUALIFICATIONS WALES

SPECIFICATION

For teaching from 2021
For award from 2023



This Qualifications Wales regulated qualification is not available to centres in England.



WJEC GCSE in DIGITAL TECHNOLOGY

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This specification meets the requirements of the following regulatory documents published by Qualifications Wales:

- [Approval Criteria for GCSE Qualifications](#) which set out the requirements for all new or revised GCSE specifications developed to be taught in Wales from September 2017.
- [Approval Criteria for GCSE Digital Technology](#) which set out the requirements for all qualifications in this subject to be taught in Wales from September 2021.

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GCSE DIGITAL TECHNOLOGY (Wales)

SUMMARY OF ASSESSMENT

Unit 1: The digital world On-screen examination: 1 hour 30 minutes 40% of qualification	80 marks
<p>An assessment (taken on-screen), comprising of a range of question types to assess specification content related to <i>digital technology systems, the value of digital technology and perspectives on digital technology</i>.</p> <p>All questions are compulsory.</p>	
Unit 2: Digital practices Non-exam assessment (NEA): 45 hours 40% of qualification	80 marks
<p>A non-examined assessment comprising of two sections. In Section A candidates will interrogate a supplied data set imported into a spreadsheet in order to inform Section B, where they will create a website incorporating either an animation or a game related to a set context.</p>	
Unit 3: Communicating in the digital world Non-exam assessment (NEA): 15 hours 20% of qualification	60 marks
<p>A non-examined assessment focusing on marketing digital assets using social media. Candidates will create digital assets related to a set context and then formulate an online digital communications campaign around them.</p>	

This linear qualification is untiered. It will be available in the summer series each year. Unit 1, Unit 2 and Unit 3 will be assessed for the first time in 2023 and the qualification will be awarded for the first time in summer 2023.

The table below shows the route to a GCSE Digital Technology qualification.

Unit 1 from 2023	Unit 2 from 2023	Unit 3 from 2023
✓	✓	✓

Qualification Approval Number: C00/4040/5

GCSE DIGITAL TECHNOLOGY

1 INTRODUCTION

1.1 Aims and objectives

The WJEC GCSE qualification in Digital Technology is a broad-based qualification that allows learners to build on the digital skills, knowledge and understanding that is used both in their school and everyday lives. The qualification is designed for learners who wish to begin their journey towards a career that utilises digital technologies or to progress onto advanced level programmes of learning involving digital technologies.

The qualification will allow learners to develop their understanding of the range of digital technology systems at use in our connected and globalised society. It will also allow learners to explore the ever-evolving nature of digital technology systems and how these systems can be used productively, creatively and safely.

This WJEC GCSE specification in Digital Technology will enable learners to:

- become independent, confident and knowledgeable users of existing, new and emerging digital technologies
- develop knowledge of different digital technology systems used across a range of occupational sectors
- understand the impact digital technologies can have on individuals and wider society and the ways in which they can bring about change
- develop skills in organising and analysing data to identify trends and audiences
- become creators of digital products, in a variety of formats and for a variety of purposes, that meet specified, authentic needs
- develop transferable skills in using a range of hardware and software
- develop their understanding of the systems development life cycle and of how ideas can become products.

1.2 Prior learning and progression

There are no previous learning requirements for this specification. Any requirements set for entry to a course based on this specification are at the school/college's discretion.

This specification provides a suitable foundation for the study of Digital Technology at either AS or A level.

This specification provides a coherent, satisfying and worthwhile course of study for learners who do not progress to further study in this subject. In addition, this specification will help learners make informed decisions about a wide range of career pathways.

1.3 Equality and fair access

This specification may be followed by any learner, irrespective of gender, ethnic, religious or cultural background. It has been designed to avoid, where possible, features that could, without justification, make it more difficult for a learner to achieve because they have a particular protected characteristic.

The protected characteristics under the Equality Act 2010 are age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation, marriage and civil partnership.

The specification has been discussed with groups who represent the interests of a diverse range of learners, and the specification will be kept under review.

Reasonable adjustments are made for certain learners in order to enable them to access the assessments (e.g. candidates are allowed access to a Sign Language Interpreter, using British Sign Language). Information on reasonable adjustments is found in the following document from the Joint Council for Qualifications (JCQ): *Access Arrangements and Reasonable Adjustments: General and Vocational Qualifications*.

This document is available on the JCQ website (www.jcq.org.uk). As a consequence of provision for reasonable adjustments, very few learners will have a complete barrier to any part of the assessment.

1.4 Welsh Baccalaureate

In following this specification, learners should be given opportunities, where appropriate, to develop the skills that are being assessed through the Skills Challenge Certificate within the Welsh Baccalaureate:

- Literacy
- Numeracy
- Digital Literacy
- Critical Thinking and Problem Solving
- Planning and Organisation
- Creativity and Innovation
- Personal Effectiveness.

1.5 Welsh perspective

In following this specification, learners must consider a Welsh perspective if the opportunity arises naturally from the subject matter and if its inclusion would enrich learners' understanding of the world around them as citizens of Wales as well as the UK, Europe and the world.

2 SUBJECT CONTENT

The subject content and assessment requirements are designed to ensure learners develop an appropriate breadth and depth of knowledge, understanding and skills in digital technology.

The subject content is presented in three units, each sub-divided into clear and distinct topic areas. Within each topic area the knowledge, understanding and skills are set out with an initial overview and then in two columns. The left hand column identifies the content to be studied. The right hand column provides amplification of the knowledge, understanding and skills that learners should develop in this area. Together, these two columns give the full content of the specification. There is no hierarchy implied by the order in which the content is presented, and the order does not imply a prescribed teaching order.

The amplification provided in the right hand column includes all of the assessable content for the relevant section, unless it states, 'e.g.', 'including' or 'such as'. In these cases the amplification lists relevant content which should be expanded upon in an appropriate way, taking account of learners' needs and interests.

2.1 Unit 1

The digital world

On-screen examination: 1 hour 30 minutes
40% of qualification
80 marks

The examination must be conducted in accordance with *Instructions for Conducting Examinations*, available at www.jcq.org.uk.

Overview of unit

In this unit learners will develop knowledge, skills and understanding in:

- digital technology systems
- the value of digital technology
- perspectives on digital technology.

Areas of content

Learners should be given the opportunity to develop their knowledge and understanding of the six areas of content set out on pages 7 to 16.

2.1.1	Data
2.1.2	Digital technology systems
2.1.3	Digital communications
2.1.4	Impact of digital systems on organisations and individuals
2.1.5	Securing data and systems
2.1.6	Changing digital technologies

2.1.1 Data

In this section learners will gain knowledge and understanding of the following:

- analogue and digital data
- measuring and storing data.

Content		Amplification
(a)	Analogue and digital data	<p>Learners should understand:</p> <ul style="list-style-type: none"> • what is meant by analogue data • what is meant by digital data • analogue and digital devices • the relationship between analogue and digital data. <p>Learners should:</p> <ul style="list-style-type: none"> • be able to explain the main principles of analogue to digital conversion in relation to recording, sampling and storing sound and light. • understand the advantages and disadvantages of storing data digitally, in relation to the following: <ul style="list-style-type: none"> • data retrieval • efficiency • security • accessibility • scalability • loss of quality due to sampling • expense • management • demonstrate knowledge and understanding of how images are stored digitally in terms of: <ul style="list-style-type: none"> • pixels • resolution • vector and bitmap graphics • moving image files • compression techniques.
(b)	Measuring and storing data	<p>Learners should:</p> <ul style="list-style-type: none"> • understand that computer systems can only store and process binary digits • be able to describe the relationship between binary data storage units • understand and identify the following storage mediums and their application: <ul style="list-style-type: none"> • magnetic • optical • cloud • solid state.

2.1.2 Digital technology systems

In this section learners will gain knowledge and understanding of the following:

- digital devices and means of interaction and connection
- the features of operating systems
- software types and functions
- data backup
- cloud services
- the systems development life cycle.

Content	Amplification
<p>(a) Digital devices and means of:</p> <ul style="list-style-type: none"> • interaction • connection 	<p>Learners should understand the following ways in which users may interact with digital devices:</p> <ul style="list-style-type: none"> • speech • traditional keyboard/mouse • gesture • touch • Virtual Reality (VR) • Augmented Reality (AR) • biometrics. <p>Learners should understand:</p> <ul style="list-style-type: none"> • that the Internet is a global communications network which uses interconnected computers • the infrastructure of the Internet includes clients, servers and routers • what an Internet Service Provider (ISP) is and the role it plays • how a search engine works • that the World Wide Web (WWW) is a collection of information held on the Internet • how a web server works • the role and structure of Uniform Resource Locators (URL) • how internet browsers request and display websites. <p>Learners should be aware of the following connection methods for internet enabled devices, and the advantages and disadvantages associated with each:</p> <ul style="list-style-type: none"> • broadband • satellite • fibre • mobile communication – 4G/5G • Wi-Fi – 802.11 • Bluetooth • Geographical Information Systems (GIS).

Content		Amplification
(b)	The features of operating systems	<p>Learners should:</p> <ul style="list-style-type: none"> • understand the purpose and function of an operating system • be able to describe the following features of an operating system: <ul style="list-style-type: none"> • managing resources • managing peripherals including input and output devices • spooling • managing memory • managing processes • managing security • providing a user interface. • understand the uses, advantages and disadvantages of using the following Human Computer Interfaces (HCIs) <ul style="list-style-type: none"> • Command Line Interface (CLI) • Graphical User Interface (GUI) • Touch Sensitive Interface (TSI) • menu driven interface • biometrics • voice driven interface.
(c)	Software types and functions	<p>Learners should:</p> <ul style="list-style-type: none"> • be aware of the following different types of software and their purposes: <ul style="list-style-type: none"> • applications software • bespoke software written for specific purposes • process control • understand the use and purpose of the following utility applications: <ul style="list-style-type: none"> • task scheduling • antivirus software and functions.

Content		Amplification
(d)	Data backup	<p>Learners should:</p> <ul style="list-style-type: none"> understand the importance of backing data up and be able to describe the following processes: <ul style="list-style-type: none"> full backup incremental backup differential backup Grandfather - Father - Son (GFS) methodology be able to describe the following media used for backing up data and their suitability in different circumstances: <ul style="list-style-type: none"> Universal Serial Bus (USB) flash drive external hard drive solid state media cloud storage understand the need for a disaster recovery plan and be able to explain suitable options for recovery.
(e)	Cloud services	<p>Learners should be able to describe cloud services and understand:</p> <ul style="list-style-type: none"> the difference between cloud computing and cloud storage the advantages and disadvantages of using cloud services.
(f)	The systems development life cycle	<p>Learners should understand the six parts of the systems development life cycle:</p> <ul style="list-style-type: none"> System Investigation System Analysis System Design System Implementation System Maintenance System Evaluation.

2.1.3 Digital communications

In this section learners will gain knowledge and understanding of the following:

- range of digital communication methods for personal, social and business uses
- reliability of online sources
- social networking practices and ownership.

	Content	Amplification
(a)	Range of digital communication methods for personal, social and business uses	Learners should be aware of: <ul style="list-style-type: none"> • a range of digital communication methods, their advantages and disadvantages and any associated barriers to communication • the following types of personal and social communication methods, including the social norms and expected behaviour when using them: <ul style="list-style-type: none"> • emailing • instant messaging • blogs • video conferencing • social networking websites and apps • the following internal and external business communication methods: <ul style="list-style-type: none"> • video conferencing • teleworking • emailing • promotion methods – advertising, marketing, websites • apps.
(b)	Reliability of online sources	Learners should understand: <ul style="list-style-type: none"> • the issues around the reliability of online sources and facts in relation to: <ul style="list-style-type: none"> • accuracy of information • biased information • out of date information • the following methods that verify information found online: <ul style="list-style-type: none"> • checking multiple sources • using trustworthy websites.
(c)	Social networking practices and ownership	Learners should understand: <ul style="list-style-type: none"> • how contemporary social networking platforms work • the benefits and drawbacks of social media • how social networking affects the concept of ownership of media.

2.1.4 Impact of digital systems on organisations and individuals

In this section learners will gain knowledge and understanding of the following:

- efficiencies and benefits provided by digital systems
- implementation of digital systems
- changing working practices
- changing relationships between producers, manufacturers, distributors and consumers
- rise of services and monetising content.

Content		Amplification
(a)	Efficiencies and benefits provided by digital systems	Learners should be aware of the efficiencies and benefits of digital systems and be able to identify benefits and drawbacks of: <ul style="list-style-type: none"> • office based digital systems for an organisation • consumer digital systems for an individual.
(b)	Implementation of digital systems	Learners should understand the following methodologies for implementing digital systems: <ul style="list-style-type: none"> • pilot method • parallel method • 'big bang' method.
(c)	Changing working practices	Learners should be aware of the impact that changing working practices have had on culture and society.
(d)	Changing relationships between producers, manufacturers, distributors and consumers	Learners should be aware of the advantages and disadvantages to both customers and businesses of: <ul style="list-style-type: none"> • Business to Business (B2B) Electronic Data Interchange (EDI) • online shopping • online marketplaces which process 3rd party Business to Consumer (B2C) or Consumer to Consumer (C2C) sales. • B2B buying and selling.
(e)	Rise of services and monetising content	Learners should be aware of: <ul style="list-style-type: none"> • marketing to prospective and existing customer by e-mail, social media or other means • advertising through websites • data mining and analytics.

2.1.5 Securing data and systems

In this section learners will gain knowledge and understanding of the following:

- the range of threats to data
- the range of cyber security resilience controls
- digital footprints
- legal and ethical responsibilities, including privacy and trust.

Content		Amplification
(a)	The range of threats to data	<p>Learners should understand:</p> <ul style="list-style-type: none"> • the following threats to data stored on computer systems and online: <ul style="list-style-type: none"> • accidental damage – identifying how data can be at risk from accidental destruction • malicious and deliberate damage • how networks, systems, transmitted and stored data can be protected using the following security measures: <ul style="list-style-type: none"> • encryption • firewalls • antivirus software • hierarchical access levels.
(b)	The range of cyber security resilience controls	<p>Learners should understand:</p> <ul style="list-style-type: none"> • cyber resilience as being a company's ability to prepare, survive, respond to and recover from a cyber attack • the potential consequences to a company of a cyber attack: <ul style="list-style-type: none"> • temporary or permanent loss of data and information • damaged or corrupted software • websites taken down • loss of reputation • loss of competitive advantage • financial loss. • the following resilience controls a company may use to prevent a cyber attack: <ul style="list-style-type: none"> • using a boundary firewall and internet gateway • having secure system configuration including admin accounts, audit trails, account management and backup • implementing access control including restricted access to valuable data • implementing malware protection • having patch management to ensure the latest updates of software are applied to all machines • ensuring known vulnerabilities are dealt with and the latest version of an application is being used • implementing staff training to ensure staff are not putting data at risk.

Content		Amplification
(b)	The range of cyber security resilience controls (continued)	<ul style="list-style-type: none"> the following resilience controls a company could use to recover from a cyber attack: <ul style="list-style-type: none"> having arrangements for the use of alternative premises, communication methods and facilities exploring various what-if scenarios ensuring regular backups of data.
(c)	Digital footprints	<p>Learners should understand the term digital footprint and that the following are different types of digital footprint:</p> <ul style="list-style-type: none"> a passive digital footprint – data collected without a user’s knowledge an active digital footprint – data intentionally submitted online via blogs, apps, websites and social media actions. <p>Learners should be aware of the potential impact of a digital footprint being used by:</p> <ul style="list-style-type: none"> employers to monitor employees or potential employees security services to gather information applications to target potential customers.
(d)	Legal and ethical responsibilities, including: <ul style="list-style-type: none"> privacy trust 	<p>Learners should be aware of the basic principles and what constitutes a breach of the following legislation relating to the use of computers, data and electronic communications and their impact on privacy and trust:</p> <ul style="list-style-type: none"> The Data Protection Act 2018 including the General Data Protection Regulation (GDPR) The Computer Misuse Act 1990 The Investigatory Powers Act 2016. <p>Learners should be aware of the ethical impact of the widescale use of data and systems on:</p> <ul style="list-style-type: none"> individual privacy wider society.

2.1.6 Changing digital technologies

In this section learners will gain knowledge and understanding of the following:

- key milestones, including the contributions of individuals, in the development of communications, computing systems and digital devices
- the evolution of industrial and autonomous robotics, autonomous vehicles, virtual and augmented reality, artificial intelligence and machine learning, and internet-enabled hardware
- noteworthy research on new and emerging trends, future developments and drivers.

Content	Amplification
<p>(a) Key milestones, including the contributions of individuals, in the development of communications, computing systems and digital devices</p>	<p>Learners should be aware of the following individuals and their key contribution to IT:</p> <ul style="list-style-type: none"> • Lady Ada Lovelace <ul style="list-style-type: none"> • the first computer programmer, the first person to realise computers could do more than just calculate numbers • James Gosling <ul style="list-style-type: none"> • developed the Java programming language • Admiral Grace Hopper <ul style="list-style-type: none"> • devised the first commercial electronic computer • Alan Turing <ul style="list-style-type: none"> • developed computational theory upon which modern computing is based • Steve Jobs <ul style="list-style-type: none"> • commoditised computing, and developed smartphones and hand-held devices • Sir Tim Berners-Lee. <ul style="list-style-type: none"> • inventor of the World Wide Web.
<p>(b) The evolution of:</p> <ul style="list-style-type: none"> • industrial and autonomous robotics • autonomous vehicles • virtual and augmented reality • artificial intelligence and machine learning • internet-enabled hardware 	<p>Learners should be aware of the main impacts on society, the economy and culture of the following developments in digital technology that have evolved over time:</p> <ul style="list-style-type: none"> • industrial robots • autonomous robots • autonomous vehicles • virtual reality • augmented reality • Artificial Intelligence (AI) • machine learning • internet-enabled hardware including the Internet of Things (IOT).
<p>(c) Noteworthy research on new and emerging trends, future developments and drivers</p>	<p>Learners should be aware of the main impacts on society, the economy and culture that new and emerging technology, trends and future developments and drivers in the digital technology world may have.</p>

2.2 Unit 2

Digital practices

Non-exam assessment: 45 hours
40% of qualification
80 marks

Overview of unit

In this unit learners will develop knowledge, skills and understanding in:

- interrogating spreadsheet data
- data-informed digital products.

This non-exam assessment (NEA) is based on a context set annually by WJEC, with a sample shown in Appendix B. The context will be available from the WJEC secure website from 01 September 2021 (for assessment in 2023).

The NEA must be presented in the following ways:

- word-processed A4 or A3 sized documents in PDF
- web pages in HTML 5 format and supportive evidence presented in a format compatible with the Adobe suite of applications

either

- animation media in HTML 5 format and supportive evidence presented in a format compatible with the Adobe suite of applications

or

- executable games with supporting evidence presented in a format compatible with GameMaker.

Section A: Interrogating Spreadsheet Data

To allow candidates the opportunity to develop a digital product of their choice (several web pages that include **either** a small video game **or** short animation), they will apply analytical techniques to their developed spreadsheet. The data will allow the candidate to identify target audience, trends and needs. To assess data organisation and data analytics, candidates will be required to carry out focused analysis on the data set to enable them to develop a data-informed digital product.

Section B: Data-informed digital products

Using the analysis undertaken in Section A, candidates will produce their proposal. (Candidates may be supported by their teacher at this stage to ensure their proposal offers the opportunity to address the relevant assessment criteria.) As this is a data-informed digital product and not a data-led digital product, candidates will be required to obtain feedback from suitable test users during the planning and development stages of the system development life cycle.

Planning digital products

Candidates will be required to plan their digital products and keep a development log. The log will allow the assessment of evaluating and selecting designs, and planning technical aspects of the design.

Developing digital products

Candidates will be required to use appropriate technical skills to develop digital products. The logging of issues, problems, hurdles and solutions will allow the assessment of candidates' ability to develop a digital product that meets the identified needs, trends or audience.

Evaluating completed digital products

Candidates will test their completed digital products to remove errors and bugs.

Candidates will produce a document evaluating the extent to which the data-informed digital product has satisfied the identified needs, trends and audience.

Areas of Content

Learners should be given the opportunity to develop their knowledge, skills and understanding of the five areas of content set out on pages 18 to 23.

2.2.1	Data organisation
2.2.2	Data analytics
2.2.3	Planning digital products
2.2.4	Developing digital products
2.2.5	Evaluating completed digital products

2.2.1 Data organisation		
<p>In this section learners will gain knowledge and understanding of the following:</p> <ul style="list-style-type: none"> types of data and their characteristics sources of data cleansing and organising data. 		
Content	Amplification	
(a) Types of data and their characteristics	<p>Learners should be able to:</p> <ul style="list-style-type: none"> identify and use a range of data types in a spreadsheet select the most appropriate data types to use from the raw data presented to them. 	
(b) Sources of data	<p>Learners should be aware that data can be obtained from many different sources and presented in different formats.</p> <p>Learners should be able to:</p> <ul style="list-style-type: none"> import text files into a new or existing spreadsheet format data to appropriate data types. 	

Content		Amplification
(c)	Cleansing and organising data	<p>Learners should be aware that it is sometimes necessary to cleanse data and organise data.</p> <p>Learners should be able to:</p> <ul style="list-style-type: none"> • use manual methods and computer programs to cleanse data in order to: <ul style="list-style-type: none"> • remove duplicates • remove inaccurate data • save storage space • use features within spreadsheet software to cleanse and organise data by: <ul style="list-style-type: none"> • sorting data • removing duplicates • removing superfluous characters • using a variety of string functions • rounding numbers up or down to a particular number of decimal places.

2.2.2 Data analytics

In this section learners will gain knowledge and understanding of the following:

- searching, sorting and filtering data
- descriptive data analytics: statistics and visualisation
- identifying trends, audiences and needs.

Content		Amplification
(a)	Searching, sorting and filtering data	Learners should be able to appropriately use searching, sorting and filtering within spreadsheet software.
(b)	Descriptive data analytics: statistics and visualisation	<p>Learners should understand that:</p> <ul style="list-style-type: none"> • descriptive data analytics can provide useful information • this is achieved by carrying out descriptive analysis and data visualisation. <p>Learners should be able to use a variety of descriptive analysis functions and features within spreadsheet software to summarise data.</p> <p>Learners should be able to use data visualisation features within spreadsheet software to present data in the most appropriate format.</p>
(c)	Identifying trends, audiences and needs	<p>Learners should be able to:</p> <ul style="list-style-type: none"> • use different forms of data analysis to identify trends and patterns to establish audience needs. • carry out what-if analyses.

2.2.3 Planning digital products

In this section learners will gain knowledge and understanding of the following:

- proposing digital products to satisfy trends, needs or audiences
- evaluating and selecting designs
- planning technical aspects of designs (including resource aspects, visual aspects, sound aspects, etc.)
- creating development logs.

Content		Amplification
(a)	Proposing digital products to satisfy trends, needs or audiences	Learners should be able to use data analysis to identify: <ul style="list-style-type: none"> • a target audience • audience requirements.
(b)	Evaluating and selecting designs	Learners should be able to: <ul style="list-style-type: none"> • use tools such as sketching or wireframes to establish design solutions • evaluate design solutions to select a design based on target audience feedback and needs • collect evidence in a development log.
(c)	Planning technical aspects of designs (including resource aspects, visual aspects, sound aspects, etc.)	Learners should understand the importance of using a storyboard/template when designing websites, games and animations to ensure consistency in terms of structure and appearance. Learners should understand the importance of incorporating accessibility features into relevant aspects of their digital products.
(d)	Creating development logs	Learners should understand the importance of creating and maintaining up to date development logs to document the elements of planning, development and evaluation.

2.2.4 Developing digital products

In this section learners will gain knowledge and understanding of the following:

- developing and using appropriate technical skills to develop digital products
- developing digital products that meets identified needs, trends or audiences
- logging issues, problems and hurdles, and solutions.

Content		Amplification
(a)	Develop and use appropriate technical skills to develop digital products	<p>Learners should understand the importance of producing a documented prototype that can be reviewed and tested.</p> <p>In order to support the development of digital products learners should, using a variety of appropriate techniques be able to:</p> <ul style="list-style-type: none"> • use image software to create and manipulate images, considering copyright • use web authoring software to create structured web pages • either use game development software to create games with several layers • or use animation software to create animations that contain a number of scenes.
(b)	Develop digital products that meets identified needs, trends or audiences	Learners should understand the importance of reviewing work and making changes based on feedback.
(c)	Logging: <ul style="list-style-type: none"> • issues, problems and hurdles • solutions 	<p>Learners should be able to document issues, problems and hurdles as well as describing their solutions by maintaining an up to date:</p> <ul style="list-style-type: none"> • development log • assets log.

2.2.5 Evaluating completed digital products

In this section learners will gain knowledge and understanding of the following:

- testing completed digital products to remove errors/bugs
- evaluating the extent to which data-informed digital products satisfy the identified needs, trends or audiences.

Content		Amplification
(a)	Testing completed digital products to remove errors/bugs	Learners should be able to design, implement and document tests to remove errors and bugs.
(b)	Evaluating the extent to which data-informed digital products satisfy the identified needs, trends or audiences	Learners should be able to use data gathering techniques such as: surveys, interviews and observation to obtain target audience feedback and evaluate the extent to which the final product meets the identified needs.

2.3 Unit 3

Communicating in the digital world

Non-exam assessment: 15 hours
20% of qualification
60 marks

Overview of unit

In this unit learners will develop knowledge, skills and understanding in:

- social media and online marketing communications
- creating digital assets and planning digital communications.

This non-exam assessment (NEA) is based on a context set annually by WJEC, with a sample shown in Appendix B. The context will be available from the WJEC secure website from 01 September 2021 (for assessment in 2023).

The NEA must be presented in the following ways:

- word-processed A4 or A3 sized documents in PDF
- media in MP3 format and supporting evidence be presented in a format compatible with the Adobe suite of applications.

Note – candidates must not publish their campaigns online.

Section A: Social media and online marketing communications

To allow candidates the opportunity to develop an asset of their choice, e.g. a video advertisement for social media, candidates will firstly research social media platform demographics, characteristics and features. They will also look at forms of digital marketing, placement, coherence and targeting and use this information to develop a proposal.

Section B: Creating digital assets and planning digital communications

Candidates will create a digital media asset to support an effective digital communication strategy that they have decided upon based on their research. The digital media asset will be a multi-media advertisement using text and images. The candidates will prototype how the asset will be communicated, identifying opportunities, objectives and formulating a final marketing campaign.

Learners should be given the opportunity to develop their knowledge, skills and understanding of the four areas of content set out on pages 25 to 29.

Areas of content

2.3.1	Forms of online marketing communications
2.3.2	Impact of online marketing communications
2.3.3	Creating digital assets
2.3.4	Planning digital communications

2.3.1 Forms of online marketing communications

In this section learners will gain knowledge and understanding of the following:

- social media platforms; demographics, characteristics and features
- online digital marketing; forms, placement, coherence, and targeting.

Content	Amplification
<p>(a) Social media platforms:</p> <ul style="list-style-type: none"> • demographics • characteristics • features 	<p>Learners should be aware of the importance of considering the typical demographics of social media platforms, in terms of the protected characteristics under the Equality Act 2010 (age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation, marriage and civil partnership) when deciding on which media to use in communications campaigns.</p> <p>Learners should be aware of the characteristics of different social media platforms and what they allow users to do in terms of:</p> <ul style="list-style-type: none"> • profiles • connections • uploading content in real time • enabling comments/conversations • time stamped posts. <p>Learners should be aware of the features of social media platforms including:</p> <ul style="list-style-type: none"> • individualising profiles • expanding user following • privacy and security • notifications • newsfeed • integration with other social media platforms • comments/reviews • bookmarking/saving • posts • media • sharing.

Content		Amplification
(b)	<p>Online digital marketing:</p> <ul style="list-style-type: none"> forms placement coherence targeting 	<p>Learners should be aware of the following forms of digital marketing including generic elements such as:</p> <ul style="list-style-type: none"> logos taglines edited sequences colour effects. <p>Learners should understand that digital marketing placement may involve the use of:</p> <ul style="list-style-type: none"> social networking sites microblogging photo sharing video sharing. <p>Learners should understand the importance of digital marketing coherence including:</p> <ul style="list-style-type: none"> planning the content writing the content reviewing the content. <p>Learners should understand that digital marketing targeting may be achieved using:</p> <ul style="list-style-type: none"> automated promotions demographics.

2.3.2 Impact of online marketing communications

In this section learners will gain knowledge and understanding of the following impacts of online marketing communications:

- benefits and opportunities
- risks.

Content		Amplification
(a)	Benefits and opportunities	<p>Learners should understand the following benefits and opportunities of online marketing communications:</p> <ul style="list-style-type: none"> market penetration – sell more into existing markets market development – new geographical markets brand building – brand awareness, familiarity, favourability interaction – trigger based, event driven.
(b)	Risks	<p>Learners should understand the following risks associated with online marketing communications:</p> <ul style="list-style-type: none"> credibility cyber security risks dependent on technology higher transparency of prices maintenance costs due to technological advances security/privacy trending and viral uptake worldwide competition.

2.3.3 Creating digital assets

In this section learners will gain knowledge and understanding of the following:

- using appropriate software or apps to create digital media assets to support digital communications strategies, in these forms:
 - copy (text)
 - photographs, images, graphics and manipulated images
 - edited live-action moving images.

Content	Amplification
<p>(a) Using appropriate software or apps to create digital media assets to support digital communications strategies, in these forms:</p> <ul style="list-style-type: none"> • copy (text) • photographs, images, graphics and manipulated images • edited live-action moving images 	<p>Learners should be able to use appropriate software or apps to create digital media assets. This should include the following:</p> <ul style="list-style-type: none"> • copy (text) <ul style="list-style-type: none"> • inputting text • manipulating text • graphics/images/photographs <ul style="list-style-type: none"> • creation of an asset • insertion into another asset • manipulation of assets • moving images <ul style="list-style-type: none"> • creation of an asset • insertion into another asset • manipulation of assets • export of digital media assets to another specified format. <p>Learners should be able to evaluate the extent to which a digital media asset supports a digital communications strategy.</p>

2.3.4 Planning digital communications

In this section learners will gain knowledge and understanding of the following:

- identifying opportunities and objectives
- determining online digital marketing communications strategy
- developing coherence between digital media assets and copy
- formulating marketing campaigns.

Content		Amplification
(a)	Identifying opportunities and objectives	Learners should understand the importance of: <ul style="list-style-type: none"> • identifying customer needs and wants • evaluating demand • identifying quantifiable objectives.
(b)	Determining online digital marketing communications strategy	Learners should be able to determine a social media marketing communications strategy using the following: <ul style="list-style-type: none"> • user-led content • user-led stories • pre-video ads • social media tags.
(c)	Developing coherence between digital media assets and copy	Learners should understand that digital media assets and copy need to be assessed for: <ul style="list-style-type: none"> • suitability of purpose • suitability for target audience/demographic • consistency of house style.
(d)	Formulating marketing campaigns	Learners should understand success criteria for marketing campaigns in terms of the following: <ul style="list-style-type: none"> • goals of the company • goals for the marketing campaign • target demographic • branding • goals for the standard of the digital asset.

3 ASSESSMENT

3.1 Assessment objectives and weightings

Below are the assessment objectives for this specification. Learners must:

AO1

Demonstrate knowledge and understanding of digital technology systems.

AO2

Apply knowledge and understanding of digital technology systems in a range of contexts.

AO3

Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs.

AO4

Develop, test and evaluate digital products that meet the needs of specified audiences.

The table below shows the weighting of each assessment objective for each unit and for the qualification as a whole.

	AO1	AO2	AO3	AO4	Total
Unit 1	20%	20%	-	-	40%
Unit 2	-	-	15%	25%	40%
Unit 3	-	5%	5%	10%	20%
Overall weighting	20%	25%	20%	35%	100%

3.2 Arrangements for non-examination assessment

Unit 2 and Unit 3 are non-exam assessments (NEA) which are internally assessed by the centre and externally moderated by WJEC. The NEA must be conducted in accordance with the JCQ *Instructions for Conducting Non-examination Assessments*, available at www.jcq.org.uk.

Tasks

Sample contexts for assessment within Unit 2 and Unit 3 are presented in Appendix B of this specification. These are not for use with live assessments.

Contexts will be set annually by WJEC and published on the WJEC secure website. The context will be released each September, from September 2021, and will be accepted for award in the year specified only, as shown in the table below.

Context release date	Year of award			
	2023	2024	2025	2026
September 2021	✓	-	-	-
September 2022	-	✓	-	-
September 2023	-	-	✓	-
September 2024	-	-	-	✓

Preparation for NEA

NEA tasks may be completed and assessed at any suitable time during the course. However, centres need to ensure they have delivered the content needed for candidates to be able to access marks allocated to all aspects of the relevant NEA.

Before the course starts, the teacher is responsible for informing candidates of WJEC's regulations concerning malpractice. Candidates must not take part in any unfair practice in the preparation of work for GCSE Digital Technology.

Candidates must understand that information from published sources must be referenced. They should be given guidance on setting out references and be aware that they must not plagiarise other material. They should know that to present material copied directly from books or other sources without acknowledgement will be regarded as deliberate deception. Centres must report suspected malpractice to WJEC.

It is important that NEA activity is monitored by centres to ensure that candidates' work is their own. All candidates are required to sign that the work submitted is their own and teachers are required to confirm that the work is solely that of the candidate concerned and was conducted under the required conditions.

Candidates must not work together during the tasks for Unit 2 or Unit 3.

Time available for NEA

Candidates should spend approximately 45 hours on their NEA task for Unit 2 and 15 hours on their NEA task for Unit 3. These times refer to work completed under direct supervision in the classroom.

Investigative work may be undertaken outside the supervised time, and should not be logged as counting towards the times noted above. However, all work, other than investigation, must be completed under direct supervision and counts towards the times noted above.

The NEA tasks do not have a required or recommended length in words or pages.

Supervision and monitoring of NEA

- Once the NEA is underway, candidates' work should remain within the centre at all times, and be stored securely between timetabled sessions to mitigate the risks of malpractice taking place.
- Candidates **do not** need to be directly supervised at all times.
- During their NEA, the use of resources, including the Internet, is not tightly prescribed and candidates may have access to such resources. However, the centre **must** ensure that:
 - there is sufficient supervision of every candidate to enable work to be authenticated
 - the work that an individual candidate submits for assessment is their own.
- Investigative work may be completed outside of the centre without direct supervision, provided that the centre is confident that the work produced is the candidate's own. Outside of the centre, candidates may:
 - have unlimited access to electronic and printed resources
 - use the Internet without restriction.
- Teachers may provide guidance and support to candidates to ensure that they have a clear understanding of the requirements of the NEA tasks, the assessment and the associated marking criteria.
- Teachers may advise candidates on the suitability of the context chosen for their NEA work, with regard to the opportunity for the resulting work to address all relevant assessment requirements. Once work is underway, feedback must be limited to general advice on what needs to be improved. Teachers must not provide specific guidance on how to make these improvements.
- 'General advice' in the context of GCSE Digital Technology NEA includes:
 - ensuring that candidates understand the requirements of the relevant task, including the required outcome and the time available
 - ensuring that candidates' routes through the NEA have the potential to meet the requirements of the marking criteria and is of sufficient demand to achieve marks from the highest bands
 - providing guidance on the safe use of the ICT hardware and software available to candidates undertaking NEA activities.
- Within the context of 'general advice' teachers are **not allowed** to:
 - give a candidate detailed advice and take the lead through the NEA process
 - correct or modify a candidate's work
 - give specific direction to a candidate in order to achieve higher marks
 - produce any form of writing frame for use within NEA activities.
- Candidates are allowed access to resources which may include information gathered outside of school/college, e.g. as part of their investigation or research activities.
- During the time candidates are working on their NEA, teachers must monitor progress sufficiently to be able to authenticate the work as the candidate's own (see also the information on authentication below).
- Once the task is finished and the final assessment made, no further amendments may be made.

The time spent working on each NEA task should be recorded by the teacher as a log and this may be requested by WJEC in addition to the work submitted for moderation. The log should be monitored by the centre to ensure that candidates spend 45 hours and 15 hours on their relevant NEA tasks for Unit 2 and Unit 3.

Authentication

It is important that NEA work is rigorously monitored by centres to ensure that candidates' work is their own. Centres should monitor candidates' work by:

- keeping a careful record of progress during the timetabled sessions
- carefully considering whether the written evidence submitted is characteristic of the candidates' ability/attainment
- keeping work secure in the centre once the evidence is handed in
- ensuring work is not returned to the candidate to make changes.

References

References to sources of information used in NEA tasks must be acknowledged. This can be through an appended bibliography using a conventional in-text referencing system, or through footnotes.

Evidence to be submitted

Centres must assure WJEC that the evidence submitted is the work of the candidates concerned. Other than investigation activities, all work must be undertaken under direct supervision.

The teacher responsible for the supervision of the candidate's work must complete a declaration that they are satisfied that the evidence submitted is that of the candidate concerned.

Unit 2 evidence to be submitted

A practical project completed by the candidate, a mark sheet completed by the assessor, signed declarations of authentication (by the teacher and the candidate) submitted electronically using WJEC's online platform.

Unit 3 evidence to be submitted

An online digital communications campaign completed by the candidate, a mark sheet completed by the assessor, signed declarations of authentication (by the teacher and the candidate) submitted electronically using WJEC's online platform.

NEA coversheets must be completed for all candidates (not just those selected for moderation). The forms can be downloaded from WJEC's secure website.

Security of candidates' work

Candidates' work **must** be kept securely between timetabled NEA sessions, and until the deadline for a review of moderation has passed or until a review of moderation or appeal or malpractice investigation has been completed, whichever is the later.

Assessment criteria for Unit 2 and Unit 3

The assessment criteria for Unit 2 and Unit 3 are summarised in the tables below and shown in detail in Appendix A.

Unit 2

Assessment Criteria		Assessment objective	Marks
(a)	Data organisation and analytics	AO3	12
(b)	Planning – website	AO3	11
(c)	Planning – animation or game	AO3	7
(d)	Developing digital products – assets	AO4	10
(e)	Developing digital products – website	AO4	15
(f)	Developing digital products – animation or game	AO4	15
(g)	Testing completed products	AO4	5
(h)	Evaluating completed products	AO4	5
			Total 80

Unit 3

Assessment Criteria		Assessment objective	Marks
(a)	Forms of online marketing communications	AO2	9
(b)	Impact of online marketing communications	AO2	6
(c)	Planning digital communications – analysis of audience needs	AO3	6
(d)	Planning digital communications – plan digital asset	AO3	9
(e)	Creating digital assets	AO4	25
(f)	Evaluating digital assets	AO4	5
			Total 60

4 TECHNICAL INFORMATION

4.1 Making entries

This is a linear qualification in which all assessments must be taken at the end of the course. Assessment opportunities will be available in the summer series each year, until the end of the life of this specification. Summer 2023 will be the first assessment opportunity.

A qualification may be taken more than once. Candidates must resit all examination units in the same series.

Marks for NEA may be carried forward for the life of the specification. If a candidate resits an NEA unit (rather than carrying forward the previous NEA mark), it is the new mark that will count towards the overall grade, even if it is lower than a previous attempt.

Where a candidate has certificated on two or more previous occasions, the most recent NEA mark is carried forward, regardless of whether that mark is higher or lower (unless that mark is absent). The entry codes appear below.

Title	Entry codes	
	English-medium	Welsh-medium
GCSE Digital Technology	3540QS	3540CS

The current edition of our *Entry Procedures and Coding Information* gives up-to-date entry procedures.

4.2 Grading, awarding and reporting

GCSE qualifications are reported on an eight point scale from A*-G, where A* is the highest grade. Results not attaining the minimum standard for the award will be reported as U (unclassified).

Appendix A

Marking Grids for Unit 2

Section A

(a) Data organisation and analytics (2.2.1 & 2.2.2)		[12 marks]
Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>	
4	<p style="text-align: center;">10-12 marks</p> <p>The candidate has demonstrated excellent application of knowledge, skills and understanding to identify audience needs and plan digital products that meet these needs by:</p> <ul style="list-style-type: none"> ● thoroughly and effectively processing data using relevant cleansing and sorting techniques ● accurately calculating outcomes using the appropriate functions ● clearly illustrating relevant data trends based on the correct filtered data using highly appropriate data visualisation methods ● having carried out a range of relevant investigations using advanced techniques as evidenced in the analysis log. 	
3	<p style="text-align: center;">7-9 marks</p> <p>The candidate has demonstrated good application of knowledge, skills and understanding to identify audience needs and plan digital products that meet these needs by:</p> <ul style="list-style-type: none"> ● thoroughly processing data using mostly relevant cleansing and sorting techniques ● accurately calculating outcomes ● clearly illustrating relevant data trends using generally appropriate data visualisation methods ● having carried out a range of relevant investigations as evidenced in the analysis log. 	
2	<p style="text-align: center;">4-6 marks</p> <p>The candidate has demonstrated basic application of knowledge, skills and understanding to identify audience needs and plan digital products that meet these needs by:</p> <ul style="list-style-type: none"> ● processing data using some cleansing and sorting techniques ● calculating most outcomes accurately ● illustrating some data trends using simple data visualisation methods ● having carried out at least one relevant investigation as evidenced in the analysis log. 	

Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>
1	<p style="text-align: center;">1-3 marks</p> <p>The candidate has demonstrated limited application of knowledge, skills and understanding to identify audience needs and plan digital products that meet these needs by:</p> <ul style="list-style-type: none">● processing data using some techniques● calculating an outcome accurately● having illustrated a data trend as evidenced in the analysis log.
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>

Section B

(b) Planning – website (2.2.3)		[11 marks]
Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>	
4	<p style="text-align: center;">10-11 marks</p> <p>The candidate has demonstrated excellent application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing excellent designs that would enable a competent third party to create a professional website that meets all key requirements of the scenario • thoroughly and effectively organising their workspace with folders, files and documents correctly saved with an appropriate naming convention • maintaining a clear and detailed development log that documents: <ul style="list-style-type: none"> • obtaining and effectively responding to feedback from test users to further develop all of the designs • the complete design process. 	
3	<p style="text-align: center;">7-9 marks</p> <p>The candidate has demonstrated good application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing good designs that would enable a competent third party to create a professional website that meets most of the key requirements of the scenario • thoroughly organising their workspace with folders, files and documents correctly saved with an appropriate naming convention • maintaining a clear development log that documents: <ul style="list-style-type: none"> • obtaining and responding to feedback from test users to further develop most of the designs • most of the design process. 	
2	<p style="text-align: center;">4-6 marks</p> <p>The candidate has demonstrated basic application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing designs that may lack some detail, but would allow a competent third party to create a website that would meet some of the requirements of the scenario • organising their workspace with folders, files and documents correctly saved • maintaining a development log that documents: <ul style="list-style-type: none"> • obtaining and responding to feedback from test users • some of the design process. 	

Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>
	Award 1-3 marks
1	<p>The candidate has demonstrated limited application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing some designs that give an incomplete picture of each page of the website • simply organising their workspace • maintaining a simple development log that documents: <ul style="list-style-type: none"> • obtaining some feedback • little of the design process.
	0 marks
	Not credit worthy or not attempted.

(c) Planning – animation or game (2.2.3)		[7 marks]
Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>	
	6-7 marks	
3	<p>The candidate has demonstrated very good application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing very good designs that would enable a competent third party to create an animation or game that meets all key requirements of the scenario • maintaining a clear development log that documents: <ul style="list-style-type: none"> • obtaining and responding to feedback from test users to further develop the designs • the complete design process. 	
	3-5 marks	
2	<p>The candidate has demonstrated good application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing good designs that may lack some detail but would allow a competent third party to create an animation or game that would meet some of the requirements of the scenario • maintaining a generally clear development log that documents: <ul style="list-style-type: none"> • obtaining and responding to feedback from test users • some of the design process. 	
	1-2 marks	
1	<p>The candidate has demonstrated basic application of knowledge, skills and understanding to plan digital products by:</p> <ul style="list-style-type: none"> • producing basic designs that give an incomplete picture of each scene/layer of the animation/game • maintaining a basic development log that documents: <ul style="list-style-type: none"> • obtaining some feedback • little of the design process. 	
	0 marks	
	Not credit worthy or not attempted.	

(d) Developing digital products - assets (2.2.3)		[10 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
4	<p style="text-align: center;">9-10 marks</p> <p>The candidate has demonstrated excellent development of digital products by:</p> <ul style="list-style-type: none"> gathering and preparing a variety of content, all of which is excellent quality and well-matched to the intended purpose maintaining an assets log that provides clear and detailed evidence of all assets created, the tools used, problems encountered and solutions. 	
3	<p style="text-align: center;">6-8 marks</p> <p>The candidate has demonstrated good development of digital products by:</p> <ul style="list-style-type: none"> gathering and preparing a variety of content, all of which is good quality and mostly well-matched to the intended purpose maintaining an assets log that provides detailed evidence of all assets used within their digital products, the tools used, problems encountered and solutions. 	
2	<p style="text-align: center;">3-5 marks</p> <p>The candidate has demonstrated basic development of digital products by:</p> <ul style="list-style-type: none"> gathering and preparing a variety of content, most of which is partly-matched to the intended purpose maintaining an assets log that provides evidence of most assets used within their digital products, the tools used, problems encountered and solutions. 	
1	<p style="text-align: center;">1-2 marks</p> <p>The candidate has demonstrated limited development of digital products by:</p> <ul style="list-style-type: none"> gathering and preparing some content which is suitable to the intended purpose maintaining an assets log that provides limited evidence of assets used within their digital products, the tools used, problems encountered and solutions. 	
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>	

(e) Developing digital products - website (2.2.4)		[15 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
	13-15 marks	
4	<p>The candidate has demonstrated excellent development of digital products by:</p> <ul style="list-style-type: none"> • using web development software to create a professional website that fully meets the scenario requirements • critically evaluating feedback gained throughout the development process to establish views and feelings in the context of the target audience, and making changes where appropriate • maintaining a clear and detailed development log that thoroughly documents how the designs were used, most of the issues, problems, hurdles and solutions. 	
	9-12 marks	
3	<p>The candidate has demonstrated good development of digital products by:</p> <ul style="list-style-type: none"> • using web development software to create a website that meets most of the scenario requirements • evaluating feedback gained during the development process to establish views and feelings in the context of the target audience, and making changes where appropriate • maintaining a clear development log that documents how the designs were used, most of the issues, problems, hurdles and solutions. 	
	5-8 marks	
2	<p>The candidate has demonstrated basic development of digital products by:</p> <ul style="list-style-type: none"> • using web development software to create a basic website that meets some of the scenario requirements • evaluating feedback gained during some of the development process to establish views and/or feelings in the context of the target audience, and making some changes • maintaining a generally clear development log that documents how the designs were used, some of the issues, problems, hurdles and solutions. 	
	1-4 marks	
1	<p>The candidate has demonstrated limited development of digital products by:</p> <ul style="list-style-type: none"> • using web development software to create a limited website that allows access to some of the content • obtaining some feedback • providing limited information about how the designs were used and describing some of the development process. 	
	0 marks	
	Not credit worthy or not attempted.	

(f) Developing digital products – animation or game (2.2.4)		[15 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
4	13-15 marks	
	<p>The candidate has demonstrated excellent development of digital products by:</p> <ul style="list-style-type: none"> ● creating an excellent animation or game that fully meets the scenario requirements ● critically evaluating feedback gained throughout the development process to establish views and feelings in the context of the target audience ● making appropriate changes based on this feedback, resulting in an animation or game that is informative and very effective in holding the target audience's interest ● maintaining a clear and detailed development log that documents how the designs were used, most of the issues, problems, hurdles and solutions. 	
3	9-12 marks	
	<p>The candidate has demonstrated good development of digital products by:</p> <ul style="list-style-type: none"> ● creating an animation or game that meets most of the scenario requirements ● evaluating feedback gained during the development process to establish views and feelings in the context of the target audience ● making appropriate changes based on this feedback, resulting in an animation or game that is informative and/or effective in holding the target audience's interest ● maintaining a clear development log that documents how the designs were used, most of the issues, problems, hurdles and solutions. 	
2	5-8 marks	
	<p>The candidate has demonstrated basic development of digital products by:</p> <ul style="list-style-type: none"> ● creating an animation or game that meets some of the scenario requirements ● evaluating feedback gained during some of the development process to establish views and/or feelings in the context of the target audience ● making changes based on this feedback resulting in an animation or game that is interesting to the target audience ● maintaining a generally clear development log that documents how the designs were used, some of the issues, problems, hurdles and solutions. 	
1	1-4 marks	
	<p>The candidate has demonstrated limited development of digital products by:</p> <ul style="list-style-type: none"> ● creating a keyframe animation or a single layer game ● obtaining some feedback ● providing limited information about how the designs were used and describing some of the development process. 	
	0 marks	
	Not credit worthy or not attempted.	

(g) Testing completed products (2.2.5)		[5 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
	5 marks	
3	<p>The candidate has demonstrated very good testing of digital products by:</p> <ul style="list-style-type: none"> ● producing a comprehensive plan to test the functionality of the products ● following the test plan in a logical and systematic manner to carry out testing of the products ● presenting all testing outcomes with detailed and informed commentaries ● removing all errors and bugs so that the final products are error and bug free. 	
	3-4 marks	
2	<p>The candidate has demonstrated good testing of digital products by:</p> <ul style="list-style-type: none"> ● producing a plan to test the functionality of the products ● following the test plan to carry out testing of the products ● presenting most testing outcomes with suitable commentaries ● removing most errors and bugs so that the final products are mainly error and bug free. 	
	1-2 marks	
1	<p>The candidate has demonstrated basic testing of digital products by:</p> <ul style="list-style-type: none"> ● carrying out tests with some commentary ● creating products that may contain errors and bugs. 	
	0 marks	
	Not credit worthy or not attempted.	

(h) Evaluating completed products (2.2.5)		[5 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
3	<p style="text-align: center;">5 marks</p> <p>The candidate has demonstrated very good evaluation of digital products by:</p> <ul style="list-style-type: none"> • thoroughly considering feedback in the context of the target audience to critically and objectively evaluate the extent to which the final digital products meet the scenario's aims and objectives • clear identification of the potential for a range of further improvements, with suggestions for how these may be made. 	
2	<p style="text-align: center;">3-4 marks</p> <p>The candidate has demonstrated good evaluation of digital products by:</p> <ul style="list-style-type: none"> • considering feedback in the context of the target audience to evaluate the extent to which the final digital products meet the scenario's aims and objectives • identification of some further improvements, with suggestions for how these may be made. 	
1	<p style="text-align: center;">1-2 marks</p> <p>The candidate has demonstrated basic evaluation of digital products by:</p> <ul style="list-style-type: none"> • presenting comments about how the final product meets some of the requirements of the scenario • including feedback. 	
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>	

Mapping of NEA Unit 2 to specification content and assessment objectives

Assessment criteria	Specification content (main focus)					Mark allocation				
	Section					Total Marks	AO1 Marks	AO2 Marks	AO3 Marks	AO4 Marks
	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5					
(a)	✓	✓				12	0	0	12	0
(b)			✓			11	0	0	11	0
(c)			✓			7	0	0	7	0
(d)			✓			10	0	0	0	10
(e)				✓		15	0	0	0	15
(f)				✓		15	0	0	0	15
(g)					✓	5	0	0	0	5
(h)					✓	5	0	0	0	5
	Total marks					80	0	0	30	50

Marking Grids for Unit 3

Section A

(a) Forms of online marketing communications (2.3.1)		[9 marks]
Band	AO2: <i>Apply knowledge and understanding of digital technology systems in a range of contexts</i>	
4	8-9 marks	
	<p>The candidate has demonstrated excellent application of knowledge and understanding of digital technology systems to clearly explain:</p> <ul style="list-style-type: none"> • the importance of fully considering the demographics of social media platforms • a range of forms of digital marketing, appropriate to each demographic, with full respect to coherence and targeting • the characteristics and features of a range of social media platforms, demonstrating excellent technical understanding of each. <p>The candidate has presented all of their work in the specified manner.</p>	
3	6-7 marks	
	<p>The candidate has demonstrated good application of knowledge and understanding of digital technology systems to explain:</p> <ul style="list-style-type: none"> • the importance of considering the demographics of social media platforms • a range of forms of digital marketing, appropriate to most demographics, with some consideration of coherence and/or targeting • the characteristics and features of a range of social media platforms, demonstrating good technical understanding of each. <p>The candidate has presented most of their work in the specified manner.</p>	
2	3-5 marks	
	<p>The candidate has demonstrated basic application of knowledge and understanding of digital technology systems to explain:</p> <ul style="list-style-type: none"> • that social media platforms have different demographics • some forms of digital marketing, appropriate to some demographics, with basic consideration of coherence or targeting • the characteristics and features of some social media platforms, demonstrating basic technical understanding. <p>The candidate has presented most of their work in an appropriate manner.</p>	
1	1-2 marks	
	<p>The candidate has demonstrated limited application of knowledge and understanding of digital technology systems in an attempt to explain:</p> <ul style="list-style-type: none"> • that social media platforms have a demographic • one or two forms of digital marketing • the characteristics or features of one or two social media platforms. <p>The candidate has presented some of their work in a generally appropriate manner.</p>	
	0 marks	
	Not credit worthy or not attempted.	

(b) Impact of online marketing communications (2.3.2)		[6 marks]
Band	AO2: <i>Apply knowledge and understanding of digital technology systems in a range of contexts</i>	
3	<p style="text-align: center;">5-6 marks</p> <p>The candidate has demonstrated very good application of knowledge and understanding of digital technology systems to clearly explain:</p> <ul style="list-style-type: none"> ● a range of benefits and opportunities of online marketing communications ● the key risks of online marketing communications with a confident grasp of how these may apply to the given scenario. 	
2	<p style="text-align: center;">3-4 marks</p> <p>The candidate has demonstrated good application of knowledge and understanding of digital technology systems to explain:</p> <ul style="list-style-type: none"> ● some benefits and opportunities of online marketing communications ● some risks of online marketing communications with a generally secure grasp of how these may apply to the given scenario. 	
1	<p style="text-align: center;">1-2 marks</p> <p>The candidate has demonstrated basic application of knowledge and understanding of digital technology systems to explain:</p> <ul style="list-style-type: none"> ● some benefits or opportunities of online marketing communications ● some general risks of online marketing communications with some grasp of how these may apply to the given scenario. 	
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>	

Section B

(c) Planning digital communications - analysis of audience needs (2.3.4) [6 marks]	
Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>
3	<p style="text-align: center;">5-6 marks</p> <p>The candidate has demonstrated very good application of knowledge, skills and understanding to:</p> <ul style="list-style-type: none"> ● produce a critical and objective analysis of the given scenario, identifying opportunities and objectives ● determine a clearly defined online digital marketing communications strategy.
2	<p style="text-align: center;">3-4 marks</p> <p>The candidate has demonstrated good application of knowledge, skills and understanding to:</p> <ul style="list-style-type: none"> ● produce a generally objective analysis of the given scenario, identifying opportunities and/or objectives ● determine a generally well defined online digital marketing communications strategy.
1	<p style="text-align: center;">1-2 marks</p> <p>The candidate has demonstrated basic application of knowledge, skills and understanding to:</p> <ul style="list-style-type: none"> ● produce an outline analysis of the given scenario, identifying opportunities or objectives ● determine a basic online digital marketing communications strategy.
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>

(d) Planning digital communications – plan digital asset (2.3.4)		[9 marks]
Band	AO3: <i>Apply knowledge, skills and understanding to identify audience needs and plan digital products and communications that meet these needs</i>	
4	<p style="text-align: center;">8-9 marks</p> <p>The candidate has demonstrated excellent application of knowledge, skills and understanding to produce a detailed, relevant set of measurable success criteria for:</p> <ul style="list-style-type: none"> ● the digital media asset in terms of purpose, target audience/demographic and house style ● formulating an excellent marketing campaign. 	
3	<p style="text-align: center;">6-7 marks</p> <p>The candidate has demonstrated good application of knowledge, skills and understanding to produce a relevant set of measurable success criteria for:</p> <ul style="list-style-type: none"> ● the digital media asset in terms of purpose, target audience/demographic and/or house style ● formulating a good marketing campaign. 	
2	<p style="text-align: center;">3-5 marks</p> <p>The candidate has demonstrated basic application of knowledge, skills and understanding to produce a generally relevant set of success criteria for:</p> <ul style="list-style-type: none"> ● the digital media asset in terms of purpose, target audience/demographic or house style ● formulating a basic marketing campaign. 	
1	<p style="text-align: center;">1-2 marks</p> <p>The candidate has demonstrated limited application of knowledge, skills and understanding to produce a limited set of success criteria for:</p> <ul style="list-style-type: none"> ● the digital media asset with respect to either its purpose, target audience/demographic or house style ● formulating a limited marketing campaign. 	
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>	

Section C

(e) Creating digital assets (2.3.3)		[25 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
5	21-25 marks	
	<p>The candidate has made excellent, highly appropriate use of:</p> <ul style="list-style-type: none"> ● the given media ● multiple timelines ● layering ● effects ● text ● export options <p>to create an excellent quality digital asset that is clearly suitable for the target demographic and intended purpose, and has a near professional finish.</p>	
4	16-20 marks	
	<p>The candidate has made good, appropriate use of:</p> <ul style="list-style-type: none"> ● the given media ● multiple timelines ● layering ● effects ● text ● export options <p>to create a good quality digital asset that is suitable for the target demographic and intended purpose.</p>	
3	11-15 marks	
	<p>The candidate has made satisfactory, generally appropriate use of:</p> <ul style="list-style-type: none"> ● the given media ● multiple timelines ● layering ● effects ● text ● export options <p>to create a digital asset that is generally suitable for the target demographic and intended purpose.</p>	
2	6-10 marks:	
	<p>The candidate has made basic use of most of the following:</p> <ul style="list-style-type: none"> ● the given media ● multiple timelines ● layering ● effects ● text ● export options <p>to create a basic digital asset that is partly suitable for the target demographic and/or intended purpose.</p>	

Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>
1	<p style="text-align: center;">1-5 marks</p> <p>The candidate has made limited use of some of the following:</p> <ul style="list-style-type: none">● the given media● multiple timelines● layering● effects● text● export options <p>to create a simple digital asset.</p>
	<p style="text-align: center;">0 marks</p> <p style="text-align: center;">Not credit worthy or not attempted.</p>

Section D

(f) Evaluating digital assets (2.3.3)		[5 marks]
Band	AO4: <i>Develop, test and evaluate digital products that meet the needs of specified audiences</i>	
3	<p style="text-align: center;">5 marks:</p> <p>The candidate has demonstrated very good evaluation of their digital asset by:</p> <ul style="list-style-type: none"> ● objectively evaluating the extent to which the final digital asset supports the intended digital communications strategy ● clearly identifying the potential for a range of further improvements ● creating a refinement log that demonstrates tasks were carried out in a logical and appropriate order. 	
2	<p style="text-align: center;">3-4 marks</p> <p>The candidate has demonstrated good evaluation of their digital asset by:</p> <ul style="list-style-type: none"> ● evaluating the extent to which the final digital asset supports the intended digital communications strategy ● identifying the potential for further improvements ● creating a refinement log that demonstrates tasks were generally carried out in an appropriate order. 	
1	<p style="text-align: center;">1-2 marks</p> <p>The candidate has demonstrated basic evaluation of their digital asset by:</p> <ul style="list-style-type: none"> ● showing some consideration of how the final digital asset supports the intended digital communications strategy ● suggesting one or two basic improvements ● creating a refinement log that demonstrates some tasks were generally carried out in an appropriate order. 	
	<p>0 marks</p> <p>Not credit worthy or not attempted.</p>	

Mapping of NEA Unit 3 to specification content and assessment objectives

Assessment criteria	Specification content (main focus)				Total Marks	Mark allocation			
	Section					AO1 Marks	AO2 Marks	AO3 Marks	AO4 Marks
	2.3.1	2.3.2	2.3.3	2.3.4					
(a)	✓				9	0	9	0	0
(b)		✓			6	0	6	0	0
(c)				✓	6	0	0	6	0
(d)				✓	9	0	0	9	0
(e)			✓		25	0	0	0	25
(f)			✓		5	0	0	0	5
	Total marks				60	0	15	15	30

Appendix B

Sample NEA Tasks



GCSE DIGITAL TECHNOLOGY

UNIT 2

DIGITAL PRACTICES

Practical Project

Approximately 45 hours

INSTRUCTIONS FOR CANDIDATES

Read the information overleaf carefully to make sure that you understand what is needed.

It is important that you work independently from other candidates and make sure that what you hand in is your own unaided work.

Make sure that you check your work carefully to ensure that it is accurate and correct.

INFORMATION FOR CANDIDATES

Teachers and candidates will be required to sign a declaration that all work presented is the work of the candidate alone.

Information regarding the assessment of this unit is shown in Appendix A of the GCSE Digital Technology specification.

Contexts will be presented as webpages downloaded from the WJEC secure website.

(For the purpose of this paper-based submission each main heading, in green text on the following pages, represents the start of a new webpage).

Scenario – encouraging a healthy lifestyle

BeFit Cymru is a national campaign aimed at encouraging young people to lead a healthy lifestyle. They have decided that they would like a three-page website containing a small video game or animation.

You have the choice of creating a small video game or animation.

BeFit Cymru would like you to develop data-informed digital products and they have carried out a survey to support this. The data from the survey needs to be organised and analysed. The analysis of the data from the survey will enable you to establish the target audience, and some of their likes, for the website and the small video game or animation.

It is important that you organise and document your work throughout this project. You will be provided with several files and you will be instructed on the names of the files and folders where your work should be saved. It is essential that you keep all the logs up to date as this will be part of your assessment.

Organisation and preparation

Your work must be clearly organised to allow accurate assessment.

Throughout the project you will be instructed to save your files in certain folders, with specific names and formats.

Your teacher will provide you with the following resources:

- analysis log framework
- Data1 file
- development log framework
- assets log framework.

You must create:

- a root folder:
 - Root
- subfolders:
 - Evidence
 - Website
- subfolders within the Website folder:
 - Assets
 - Animation **or** Game.

The **Website** folder should contain:

- HTML pages
- an Assets folder
- an Animation **or** Game folder containing an executable file (only).

The **Evidence** folder should contain:

- completed analysis log
- completed survey spreadsheet
- development log
- assets log
- a folder containing the files used to create the executable animation **or** game. This must be in a suitable format.

Unit 2 NEA Requirements

Section A: - Interrogating spreadsheet data

Data organisation and analytics

[12 marks]

Data organisation

The data needs to be organised and cleansed using functions.
Use the analysis log to show your progress, describing which functions you have used.

The data file Data1 has been delivered by the survey company. You need to import the file into a worksheet and cleanse the data, ensuring:

- that there are no duplicate records, unnecessary spaces or blank cells.
- that correct data types have been used
- preferences are clearly identified in upper case.

Data analytics

The data must now be analysed to identify trends, audience and needs.
Copy the cleansed data from the first worksheet into another worksheet.

Continue to use the **analysis log** to show your progress.

BeFit Cymru have some minimum requirements. They require you to:

- sort the data by age in ascending order
- use a minimum of five different functions to create a table analysing respondents' age
- show an analysis by gender
- use a different numerical representation to analyse new activity preferences
- use a different (non-numeric in cell) representation to analyse game player movement
- produce two suitable charts from your analysis justifying the choices you have made in your analysis log.

Create a new worksheet:

- carry out two further relevant investigations using the advanced techniques of what-if analysis and pivot tables
- make a note in your analysis log explaining:
 - what you are investigating
 - what feature of the software you will use
 - what you have found.

Save the Analysis Log as *Completed Analysis Log* in the Evidence folder. Save the completed spreadsheet as *Completed Survey* in the Evidence folder.

Section B: - Data-informed digital products

You must complete Section A – interrogating spreadsheet data before you start developing the website. You will need to decide, based on the data, whether you choose to develop an animation **or** a game.

Planning – website

[11 marks]

- Your website must consist of **at least three** pages
- Any images that you include in the site must be documented in the Assets Log
- The website should contain no horizontal scrolling and must include accessibility features
- The website must be organised hierarchically i.e. you must not be able to directly access every page from every other page
- One page must contain **either** the game **or** the animation
- One page must contain links to all the documents in the Evidence folder.

Website Outline Designs

Note the target audience and your choice of **either** game **or** an animation in your **development log**.

Produce outline designs of the website that consider the analysis of the data and feedback you have gathered from test users.

Remember to save your work regularly and keep your **development logs** up to date.

Website Design

Produce comprehensive designs based on the chosen sketches/wireframes.

Throughout the design process you should obtain feedback from test users.

Remember to save your work regularly and keep your **development logs** up to date.

You must also create designs
for **either** the animation **or** the game.

Planning – Animation

[7 marks]

- The animation should be between 20 and 30 seconds long
- The animation must include an original cartoon character
- You should include sound in your animation, you can choose music, voiceover, incidental noise or any combination of these. At least one sound must be original
- The animation must include different scenes, you should be able to navigate around these different scenes e.g. pause, rewind, forward.

Include detailed storyboards with timings to outline your ideas for the animation design.

Remember to save your work regularly and keep your **development logs** up to date.

Planning – Game

[7 marks]

- The game should be set in a maze of your choosing that has different playable layers
- The game must include an original character
- The game must have an objective and a scoring system
- You should include sound effects in your game appropriate to the action.

Include detailed storyboards for each layer to outline your ideas for the game design.

Remember to save your work regularly and keep your **development logs** up to date.

Using your designs, you can now create the website
with **either** the game **or** the animation.

Remember to save your work regularly in the correct folders. Keep your **assets log** and **development log** up to date.

Developing digital products – assets

[10 marks]

Develop the content for your game **or** animation according to the designs you created earlier. Ensure that you have a variety of content that is matched to your purpose.

Developing digital products – website

[15 marks]

Create a professional website according to your earlier design. Ensure that you obtain feedback that you critically evaluate and act upon where necessary.

Detail how the website meets your design criteria and any issues that you encountered and how they were overcome in your **development log**.

Developing digital products – animation or game

[15 marks]

Create your animation **or** game according to your earlier design. Ensure that you obtain feedback that you critically evaluate and act upon where necessary.

Detail how your animation **or** game meets your design criteria and any issues that you encountered and how they were overcome in your **development log**.

Before you can deliver your digital products
you must carry out some final checks.

Testing completed products

[5 marks]

Create and implement a comprehensive test plan that assesses the functionality of all the digital products you have created. Document all the testing outcomes detailing where tests have succeeded or failed. Document any changes you make to your product as a result of the testing.

Evaluating completed products

[5 marks]

Obtain feedback in the context of the target audience for your digital products.

Write a report detailing how your products meet your aims and objectives and how the target audience feedback supports your findings, clearly identifying the potential for further improvements.



GCSE DIGITAL TECHNOLOGY

UNIT 3

COMMUNICATING IN THE DIGITAL WORLD

Communication Campaign

Approximately 15 hours

INSTRUCTIONS FOR CANDIDATES

Read the information overleaf carefully to make sure that you understand what is needed.

It is important that you work independently from other candidates and make sure that what you hand in is your own unaided work.

Make sure that you check your work carefully to ensure that it is accurate and correct.

INFORMATION FOR CANDIDATES

Teachers and candidates will be required to sign a declaration that all work presented is the work of the candidate alone.

Information about the assessment of this unit is shown in Appendix A of the GCSE Digital Technology specification.

Contexts will be presented as webpages downloaded from the WJEC secure website.

(For the purpose of this paper-based submission each main heading, in green text on the following pages, represents the start of a new webpage).

Scenario – recruiting singers for a band

Glynbwl is an advertising company that specialises in digital marketing on social media. The company have seen the rise in the use of videos on the following social media platforms: Snapchat, Facebook, Instagram and Twitter and would like you to make the most of the digital assets they have provided to make a video that will promote their new client.

Glynbwl's new client is a record company who would like to create a recruitment advertisement to attract new singers to one of their auditions. The record company would like to emphasise the need to be an all-round performer in the advertisement. The record company wants to reach as wide an audience as possible.

Task organisation

Your work must be organised effectively. Throughout the task you will be instructed to save your files in certain folders with specified names and in specific formats. You must keep a refinement log of your work detailing every hour you complete.

Section A – Online marketing communications

Proposal

Create a planning document that explains:

- **Forms of online marketing communications** **[9 marks]**
 - the importance of demographics (groups of people) in social media
 - a range of different forms of digital marketing and how they relate to different types of social media
 - a description of the characteristics and features of a range of different forms of social media.

- **Impact of online marketing communications** **[6 marks]**
 - the benefits, opportunities and risks of online marketing in general, and how these apply in relation to the campaign scenario.

Your work may be presented using any method you choose such as, but not limited to, text, annotated images or graphics.

This work **must** be saved in PDF in a file named **Online_Marketing.pdf** in a folder named **Planning**.

Section B – Planning digital assets

Using your work saved in your Online Marketing file, **Online_Marketing.pdf**, as a reference, you **must** now write your proposal for the 'Recruiting Members of a Band' campaign.

Planning digital communications (analysis of audience needs) **[6 marks]**

- analysing the given scenario, identifying where your digital asset would be useful and creating a list of measurable objectives for your specific campaign in terms of the audience you will be targeting.

Planning digital communications (plan digital asset) **[9 marks]**

- designing a video advertisement that meets the needs of the chosen audience and marketing strategy
- defining a marketing campaign that has a clear purpose, target audience and house style

Your work may be presented using any method you choose such as, but not limited to, text, annotated images or graphics.

This work **must** be saved in PDF in a file named **Design.pdf** in a folder named **Planning**.

Section C – Creating digital assets

Creating digital assets

[25 marks]

Using appropriate software or apps, make a video advertisement that meets the needs of the demographic, the marketing strategy and your measurable objectives.

The video advertisement must be unique and contain some original material. However, it can include existing assets e.g. music, still images, video etc. as appropriate.

You **must** maintain a refinement log detailing any issues that you came across and how these were overcome.

You **must** save your final file as ***Digital_Asset_Final.mp4*** in a folder named ***Digital_Asset***.

You **must** include your project files in an Adobe based format in the same folder.

Section D – Evaluation

Evaluating digital assets

[5 marks]

The evaluation **must** include:

- how well the digital asset meets your objectives and strategy referring to your refinement log
- what the successful features of the digital asset are
- suggestions for future improvements to the digital asset.

You **must** save your final evaluation as ***Evaluation.pdf*** and the refinement log as ***Refinement_Log.pdf*** in the folder named ***Digital_Asset***.