

MODERN APPRENTICESHIP IN DIGITAL TECHNOLOGY

Overview

This apprenticeship is designed to support the development of apprentices working in digital technology, who will develop skills, knowledge and techniques relative to their chosen specialist pathway. The five pathways are;

Software Development, Cyber Security, Data Analytics, IT Support and Infrastructure

The goal of the apprenticeship is to develop competence in the use of existing, evolving and emerging digital technologies and to enable apprentices to develop and apply practice and principles within their specialist pathway of choice.

Duration

We expect this apprenticeship to take 12-24 months to complete depending on the specialist pathway chosen

Level

SCQF Level 6. More information on SCQF can be found [here](#).

Qualification achieved

Apprentices will achieve **one** of the following qualifications:

Diploma in Digital Technology: Software Development at SCQF Level 6 (GV2D 46)

Diploma in Digital Technology: Cyber Security at SCQF Level 6 (GV2F 46)

Diploma in Digital Technology: Data Analytics at SCQF Level 6 (GV2G 46)

Diploma in Digital Technology: IT Support at SCQF Level 6 (GV2C 46)

Diploma in Digital Technology: IT Infrastructure at SCQF Level 6 (GV2E 46)

Version 1.0

Approval date:

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Apprenticeships aim to provide mixture of on-the-job (in the workplace) and off-the-job (through day or block release) learning to enable people to develop the knowledge, skills and expertise required by businesses today.

Designed by employers to attract new talent, tackle critical skills shortages and develop existing workforces, apprenticeships can both help people to enter the world of work and develop the skills of those already in work

About Scottish Apprenticeships

Scottish Apprenticeships are for everyone and reflect the Government's commitment to promoting a world-class, inclusive, work-based learning system. They are administered by **Skills Development Scotland**, the National Skills Agency. Skills Development Scotland has a remit to contribute to the nation's economic growth and it does this by supporting individuals and businesses alike to develop and apply their skills in the workplace.

The Scottish Apprenticeship system focuses on three specific key elements:

- the **learning outcomes** aligned to the specific work situations of an apprentice's job;
- the **knowledge, skills and behaviours** that will be developed by apprentices, enabling them to work competently and confidently; and
- the **meta-skills** that will be developed by apprentices to help them to manage themselves, collaborate with others and interact with change.

Throughout their apprenticeship, apprentices will be supported and guided by their employer, mentor and learning provider, and will have their growing competence measured by an assessor to ensure they can perform their job to the standard required. On successful completion, apprentices will be awarded nationally recognised competence-based and/or professional qualifications in their chosen field.

About this standard and framework document

Working in partnership with businesses and stakeholders, this standard and framework document has been written to provide apprentices and employers with an overview of the key features of this apprenticeship. Please read this alongside the associated occupation profiles for [Software Development](#), [Cyber Security](#), [Data Analytics](#), [IT Support](#) and [Infrastructure](#).

Find further information on apprenticeships [here!](#)

Digital Technology Pathways

This apprenticeship is designed to support entry level Digital Technology roles adopted across different sectors and contains 5 incorporated specialist pathways for software development, cyber security, data analytics, IT support and infrastructure.

Each pathway will provide apprentices with the skills and knowledge required to become competent in their chosen job role and includes a balance of technical, business and interpersonal skills areas, designed to ensure apprentices have an appropriate set of skills to operate in today's digital job roles.

Digital Technology Modern Apprenticeship *SCQF Level 6*



Software
Development



Cyber Security



Data Analytics



IT Support



Infrastructure



Click on the specialist pathway you would like to learn more about!

Role of the apprentice

This Scottish apprenticeship has been designed for use to support digital technology roles in software development both within digital organisations and also across different sectors such as construction, engineering, utilities, infrastructure, finance and a variety of public bodies.

Each pathway will provide apprentices with the skills and knowledge required to become competent in their chosen job role and includes a balance of technical, business and interpersonal skills areas, designed to ensure apprentices have an appropriate set of skills to operate in today's digital job roles.

There are a number of roles available at this level, such as junior software developer, junior software engineer and software support technician. These roles require employees to deal with stakeholders (both internal and external), apply technical knowledge and skills across a range of work situations, and demonstrate a clear understanding of the requirements of their own role and the goals of the organisation.

Apprentices will be expected to achieve the following **learning outcomes** by the end of their apprenticeship.

- To contribute to software design solutions in line with software specifications
- To deliver software development products and services by implementing software development methods
- To plan, create and document well defined software components

- To provide guidance and support on software applications to users and stakeholders
- To follow the software deployment steps, processes and activities required to make a software system available

The following **learning outcomes** are mandatory and common to software development, cyber security, data analytics, IT support and infrastructure pathways:

- Develop meta-skills and personal professionalism through reflective practice, goal setting and active learning to improve own performance
- To select and apply tools and techniques to solve workplace problems
- To contribute to the production of technical documentation for colleagues, customers and users
- To identify, understand and define requirements to support project engagement

Knowledge, skills and behaviours

This apprenticeship is designed to develop apprentices' careers by developing their knowledge and understanding of their role, by increasing their skills and by enhancing their behaviours.

Employers from a variety of sectors have helped to identify the key knowledge, skills and behaviours that apprentices working in Digital Technology need to develop. Throughout their apprenticeship, apprentices should be regularly assessed to ensure they can demonstrate both know-how and ability in their chosen pathway; a high-level summary is provided below under each pathway. Note that there may be mandatory and optional study requirements within the associated qualification, depending on the pathway chosen

A full list of the **knowledge, skills and behaviours** can be found in the Occupation Profile for [Software Development](#)



Knowledge

- Principles of software design methods
- Industry standard software development methodologies
- How to write and apply test cases
- Organisational software defect management processes
- Industry standard configuration management, version control and build and release management software tools



Skills

- Presenting design options to stakeholders for approval
- Delivering software solutions by applying approved tools and techniques
- Debugging and trouble shooting software to resolve defects
- Triaging software issues to prioritise issues
- Contributing to scripting activities



Behaviours

- Acting with honesty and integrity
- Developing and maintaining collaborative relationships
- Taking responsibility for own actions
- Complying with legal and regulatory requirements
- Adapting to change
- Operating effectively within teams
- Seeking learning and development opportunities

Role of the apprentice

This Scottish apprenticeship has been designed for use to support digital technology roles in cyber security both within digital organisations and also across different sectors such as construction, engineering, utilities, infrastructure, finance and a variety of public bodies.

Each pathway will provide apprentices with the skills and knowledge required to become competent in their chosen job role and includes a balance of technical, business and interpersonal skills areas, designed to ensure apprentices have an appropriate set of skills to operate in today's digital job roles.

There are a number of roles available at this level, such as cyber security administrator, junior information security analyst and junior penetration tester. These roles require employees to deal with stakeholders (both internal and external), apply technical knowledge and skills across a range of work situations, and demonstrate a clear understanding of the requirements of their own role and the goals of the organisation.

Apprentices will be expected to achieve the following **learning outcomes** by the end of their apprenticeship.

- To contribute to the delivery of the governance and compliance processes used to manage cyber security
- To implement and test operational cyber security controls in organisations

- To assist with the identification, assessment and management of risks to the information assets of organisations
- To contribute to researching and developing cyber security awareness raising and guidance

In addition, apprentices are expected to achieve **one** of the following **optional learning outcomes**.

- To assist in conducting network vulnerability assessments
- To assist with responding to and managing cyber security incidents

The following **learning outcomes** are mandatory and common to software development, cyber security, data analytics, IT support and infrastructure pathways:

- Develop meta-skills and personal professionalism through reflective practice, goal setting and active learning to improve own performance
- To select and apply tools and techniques to solve workplace problems
- To contribute to the production of technical documentation for colleagues, customers and users
- To identify, understand and define requirements to support project engagement

Knowledge, skills and behaviours

This apprenticeship is designed to develop apprentices' careers by developing their knowledge and understanding of their role, by increasing their skills and by enhancing their behaviours.

Employers from a variety of sectors have helped to identify the key knowledge, skills and behaviours that apprentices working in Digital Technology need to develop. Throughout their apprenticeship, apprentices should be regularly assessed to ensure they can demonstrate both know-how and ability in their chosen pathway; a high-level summary is provided below under each pathway. Note that there may be mandatory and optional study requirements within the associated qualification, depending on the pathway chosen.

A full list of the **knowledge, skills and behaviours** can be found in the Occupation Profile for [Cyber Security](#)

Knowledge

- The objectives of cyber security governance
- Basic network security principles and protocols
- How to identify and record organisational assets
- Common network vulnerabilities and how to mitigate them
- How to maintain awareness of breaches, malware and phishing attacks
- How to respond to cyber security breaches and incidents

Skills

- Contributing to security audits and compliance activities
- Administering user access controls
- Assisting with maintaining risk registers
- Producing dashboards and reports on cyber security advisory activities
- Supporting system patching and mitigation activities
- Documenting incident information and resolution activities

Behaviours

- Acting with honesty and integrity
- Developing and maintaining collaborative relationships
- Taking responsibility for own actions
- Complying with legal and regulatory requirements
- Adapting to change
- Operating effectively within teams
- Seeking learning and development opportunities

Role of the apprentice

This Scottish apprenticeship has been designed for use to support digital technology roles in data analytics both within digital organisations and also across different sectors such as construction, engineering, utilities, infrastructure, finance and a variety of public bodies.

Each pathway will provide apprentices with the skills and knowledge required to become competent in their chosen job role and includes a balance of technical, business and interpersonal skills areas, designed to ensure apprentices have an appropriate set of skills to operate in today's digital job roles.

There are a number of roles available at this level, such as junior data analyst, junior information analyst and data support analyst. These roles require employees to deal with stakeholders (both internal and external), apply technical knowledge and skills across a range of work situations, and demonstrate a clear understanding of the requirements of their own role and the goals of the organisation.

Apprentices will be expected to achieve the following **learning outcomes** by the end of their apprenticeship.

- To apply organisational data management practices to data and information assets
- To assist with producing datasets from different data sources that are manipulated into the correct structures and subsets

- To develop high quality visualisations and data reports to deliver data insights
- To contribute to conducting data analysis using basic statistical and analytical methods

The following **learning outcomes** are mandatory and common to software development, cyber security, data analytics, IT support and infrastructure pathways:

- Develop meta-skills and personal professionalism through reflective practice, goal setting and active learning to improve own performance
- To select and apply tools and techniques to solve workplace problems
- To contribute to the production of technical documentation for colleagues, customers and users
- To identify, understand and define requirements to support project engagement

Knowledge, skills and behaviours

This apprenticeship is designed to develop apprentices' careers by developing their knowledge and understanding of their role, by increasing their skills and by enhancing their behaviours.

Employers from a variety of sectors have helped to identify the key knowledge, skills and behaviours that apprentices working in Digital Technology need to develop. Throughout their apprenticeship, apprentices should be regularly assessed to ensure they can demonstrate both know-how and ability in their chosen pathway; a high-level summary is provided below under each pathway. Note that there may be mandatory and optional study requirements within the associated qualification, depending on the pathway chosen

A full list of the **knowledge, skills and behaviours** can be found in the Occupation Profile for [Data Analytics](#).

Knowledge

- How to access and extract data securely
- The importance of data manipulation
- Different approaches to data reporting, report distribution and security protocols
- Basic principles of statistical techniques and their application

Skills

- Identifying data types and storage used within an organisation to support dataset implementation
- Selecting, filtering and reordering data
- Producing data reports and dashboards
- Performing exploratory data analysis (EDA)

Behaviours

- Acting with honesty and integrity
- Developing and maintaining collaborative relationships
- Taking responsibility for own actions
- Complying with legal and regulatory requirements
- Adapting to change
- Operating effectively within teams
- Seeking learning and development opportunities

Role of the apprentice

This Scottish apprenticeship has been designed for use to support digital technology roles in IT support both within digital organisations and also across different sectors such as construction, engineering, utilities, infrastructure, finance and a variety of public bodies.

Each pathway will provide apprentices with the skills and knowledge required to become competent in their chosen job role and includes a balance of technical, business and interpersonal skills areas, designed to ensure apprentices have an appropriate set of skills to operate in today's digital job roles.

There are a number of roles available at this level, such as IT helpdesk advisor, IT support specialist and technical support professional. These roles require employees to deal with stakeholders (both internal and external), apply technical knowledge and skills across a range of work situations, and demonstrate a clear understanding of the requirements of their own role and the goals of the organisation.

Apprentices will be expected to achieve the following **learning outcomes** by the end of their apprenticeship.

- To respond to service requests, identify, classify and diagnose digital problems and provide end-user support
- To assist in developing end-user support guides and maintaining the knowledge base and support documentation for IT support staff

- To support asset management to maintain records of software and hardware and licensing estates

The following **learning outcomes** are mandatory and common to software development, cyber security, data analytics, IT support and infrastructure pathways:

- Develop meta-skills and personal professionalism through reflective practice, goal setting and active learning to improve own performance
- To select and apply tools and techniques to solve workplace problems
- To contribute to the production of technical documentation for colleagues, customers and users
- To identify, understand and define requirements to support project engagement

Knowledge, skills and behaviours

This apprenticeship is designed to develop apprentices' careers by developing their knowledge and understanding of their role, by increasing their skills and by enhancing their behaviours.

Employers from a variety of sectors have helped to identify the key knowledge, skills and behaviours that apprentices working in Digital Technology need to develop. Throughout their apprenticeship, apprentices should be regularly assessed to ensure they can demonstrate both know-how and ability in their chosen pathway; a high-level summary is provided below under each pathway. Note that there may be mandatory and optional study requirements within the associated qualification, depending on the pathway chosen.

A full list of the **knowledge, skills and behaviours** can be found in the Occupation Profile for [IT Support](#)

Knowledge

- Minimum Data Set (MDS) extracted from users to help validate problems
- How to produce user and technical guidance documentation
- Asset lifecycles, including security and environmental aspects

Skills

- Providing initial assessment and triage of service requests
- Creating FAQs, how-to guides and self-help resources for users
- Monitoring organisational software licensing

Behaviours

- Acting with honesty and integrity
- Developing and maintaining collaborative relationships
- Taking responsibility for own actions
- Complying with legal and regulatory requirements
- Adapting to change
- Operating effectively within teams
- Seeking learning and development opportunities

Role of the apprentice

This Scottish apprenticeship has been designed for use to support digital technology roles in infrastructure both within digital organisations and also across different sectors such as construction, engineering, utilities, infrastructure, finance and a variety of public bodies.

Each pathway will provide apprentices with the skills and knowledge required to become competent in their chosen job role and includes a balance of technical, business and interpersonal skills areas, designed to ensure apprentices have an appropriate set of skills to operate in today's digital job roles.

There are a number of roles available at this level, such as junior infrastructure engineer, IT infrastructure technician and network support adviser. These roles require employees to deal with stakeholders (both internal and external), apply technical knowledge and skills across a range of work situations, and demonstrate a clear understanding of the requirements of their own role and the goals of the organisation.

Apprentices will be expected to achieve the following **learning outcomes** by the end of their apprenticeship.

- To apply key networking concepts, principles and techniques to support on-premises network operations
- To implement, operate and maintain cloud network services

In addition, apprentices are expected to achieve **one** of the following **optional learning outcomes**.

- To assist with implementing wireless networking operations
- To support scheduling and performing cloud migrations from on-premises and existing cloud deployments

The following **learning outcomes** are mandatory and common to software development, cyber security, data analytics, IT support and infrastructure pathways:

- Develop meta-skills and personal professionalism through reflective practice, goal setting and active learning to improve own performance
- To select and apply tools and techniques to solve workplace problems
- To contribute to the production of technical documentation for colleagues, customers and users
- To identify, understand and define requirements to support project engagement

Knowledge, skills and behaviours

This apprenticeship is designed to develop apprentices' careers by developing their knowledge and understanding of their role, by increasing their skills and by enhancing their behaviours.

Employers from a variety of sectors have helped to identify the key knowledge, skills and behaviours that apprentices working in Digital Technology need to develop. Throughout their apprenticeship, apprentices should be regularly assessed to ensure they can demonstrate both know-how and ability in their chosen pathway; a high-level summary is provided below under each pathway. Note that there may be mandatory and optional study requirements within the associated qualification, depending on the pathway chosen.

A full list of the **knowledge, skills and behaviours** can be found in the Occupation Profile for [Infrastructure](#)

Knowledge

- Common industry standard network topologies
- Different cloud deployment models, including public, private and hybrid
- Network protocols and their application for wireless networks
- How to automate cloud migration processes

Skills

- Installing and configuring basic networks
- Troubleshooting and resolving cloud infrastructure issues
- Installing and connecting a wireless access point securely
- Supporting cloud software updates and releases

Behaviours

- Acting with honesty and integrity
- Developing and maintaining collaborative relationships
- Taking responsibility for own actions
- Complying with legal and regulatory requirements
- Adapting to change
- Operating effectively within teams
- Seeking learning and development opportunities

Meta-skills sit alongside and complement technical knowledge, skills and behaviours. As technology, society and the way we work change at an ever-increasing pace, so meta-skills are the over-arching and future-focused attributes that enable other skills to be developed through consideration, reflection and implementation.

Meta-skills support improved performance and productivity, greater adaptability and resilience to change. For apprentices, meta-skills are a critical asset, supporting their ability to cope and excel in the face of change, to solve problems, to collaborate with others and to create successful futures. There are three categories, each with four meta-skills.

Managing yourself - focus, integrity, adaptability and initiative

Connecting with others - communication, feeling, collaboration and leadership

Interacting with change - curiosity, creativity, sense-making and critical thinking



Supported by their employer, mentor and learning provider, apprentices should consider, practise and reflect on their use of meta-skills during their apprenticeship, building those skills to enhance their personal effectiveness in their present role and their future careers.

Managing yourself

A clear **focus** is required when fixing bugs; **integrity** is essential when supporting individual customers; **adaptability** is key to working with new processes and procedures; and using **initiative** is critical when finding new ways to solve problems.

Connecting with others

Clear and effective **communication** with both technical and non-technical stakeholders is one of the most significant aspects of this type of role; **feeling** is needed to show empathy with customers; skills in **collaboration** are vital when providing updates to team members and strong **leadership** qualities are required when taking ownership and responsibility.

Interacting with change

A keen sense of **curiosity** is a critical asset when identifying the root cause of a problem; **creativity** is fundamental to designing new policy and controls; **sense-making** comes into play when explaining issues to non-technical users and **critical thinking** is key when following issues back to source.

A number of different parties will be involved in the delivery, management and assessment of a successful apprenticeship. As well as the apprentice, key roles include employer, mentor, learning provider and assessor. Each has a specific set of responsibilities during the apprenticeship.

Apprentice Responsibilities

In their day-to-day roles, apprentices have the same responsibilities to their employer as any other employee but they have additional and specific responsibilities for their own learning and development too.

- Agreeing a learning/ development plan with all parties involved and following it through
- Committing to learning throughout the duration of apprenticeship
- Participating in progress meetings with employer and learning provider representatives
- Participating in off-the-job learning where required
- Reflecting on performance and on development of skills, knowledge and behaviours required of the role
- Agreeing new goals to progress learning with all parties involved

Employer Responsibilities

- Providing apprentices with a contract of employment, a job description and an induction Programme
- Paying apprentices in line with company policy, current legislation, fair work principles, and equality and diversity expectations
- Ensuring a working environment that is free from discrimination, bullying and harassment

- Agreeing learning needs and a learning and development plan with the learning provider and apprentices including
 - agreeing when off-the-job learning will be required and releasing apprentices for this as required
 - making on-the-job learning arrangements
 - identifying additional support requirements and agreeing actions to implement these
- Providing a quality work-based learning environment for apprentices, including the facilities and training necessary to demonstrate competence and succeed in the apprenticeship
- Providing the support of a mentor, who has relevant industry experience and is familiar with the employer's business, to support apprentices' development
- Contributing to the ongoing assessment of occupational competence, including observing performance, verifying evidence and profiling meta-skills
- Meeting with apprentices and learning providers to review apprentices' progress and set future goals
- Providing an environment that supports apprentices to take responsibility for their own learning and development
- Supporting and encouraging apprentices during their apprenticeship
- Recognising the achievements of apprentices in career management and progression
- Providing constructive feedback to the learning provider on the quality of their service delivery to inform continuous improvement of both the Scottish Apprenticeships system and apprentices themselves

Mentor Responsibilities

- Helping new apprentices orientate into the workplace
- Providing information, advice and guidance relating to the learning and assessment aspects of the apprenticeship
- Supporting apprentices to define meta-skills in their shared work context
- Working with apprentices, employers and learning providers to ensure problems are resolved quickly
- Acting as an expert witness for apprentices
- Providing support to apprentices as they adjust to the workplace and progress in their career

Learning Provider Responsibilities

- Providing an appropriate apprenticeship programme for apprentices and employers
- Agreeing the learning needs of the apprentices with both the apprentice and the employer
- Agreeing when off-the-job learning will be required and defining roles and responsibilities for this with relevant parties
- Ensuring apprentices have access to the best quality learning opportunities available
- Ensuring apprentices and employers fully understand the principles and processes of competence-based assessment
- Registering apprentices through MA Online and with relevant awarding bodies, sector skills organisations and Skills Development Scotland as appropriate

- Compiling and agreeing learning and development plans and assessment plans with apprentices and employers
- Completing assessment records and submitting records and evidence for verification/moderation
- Reviewing apprentices' progress at regular intervals with the employer
- Supporting apprentices to develop their reflective practice
- Advising apprentices who to approach for support, advice and encouragement both within and outwith the workplace
- Seeking and providing feedback from and to employers and apprentices to inform continuous improvement of the Scottish Apprenticeships system and apprentices themselves

Assessor Responsibilities

- Meeting with apprentices, mentors and employers to plan learning and review progress
- Monitoring apprentices' progress against learning and development plans
- Observing and assessing apprentices in the workplace and judging whether their work meets the competence requirements set by the qualification awarding body
- Assessing different types of evidence from apprentices
- Providing constructive feedback on performance and offering suggestions for improvement
- Maintaining current knowledge of industry standards and seeking innovative new methods of work-based learning delivery

The recruitment of apprentices is primarily the responsibility of the employer and, before an apprenticeship starts, consideration should be given to entry requirements and also to ensuring that the workplace adheres to fair work, inclusion and diversity principles.

Although there are no formal entry requirements for this apprenticeship, candidates will need to demonstrate that they have the numeracy skills required to meet the learning outcomes.

Employers can also consider existing workplace skills and experiences, where apprentices are either changing careers or upskilling. Being open to alternative assessment methods and relevant experience, instead of qualifications, can help to broaden the pool of potential applicants.

Recognition of Prior Learning

Individuals applying for an apprenticeship will undergo selection based on the employer's existing HR processes. Learning providers should take account of this and liaise with employers to provide advice and guidance on any RPL and experience that will be accepted for entry onto the programme.

It is recommended that a flexible approach to RPL is adopted, on a case-by-case basis, with all relevant experience as well as any previous qualifications considered. Learning providers should always consider how they can best recognise apprentices' prior learning to minimise repetition of content.

You can find more information on RPL [here](#).

Apprenticeship agreement and employment status

All post-school apprentices must hold a contract of employment for the period of the apprenticeship.

In addition, an apprenticeship agreement, confirming the commitment of the employer, the apprentice and the learning provider to the agreed standard and framework (this document) must be signed by all parties. This agreement forms part of the individual employment arrangements between the apprentice and the employer; and of the learning arrangements between the learning provider, the employer and the apprentice.

Registration and certification

Registration and certification of apprenticeships is undertaken through [Modern Apprenticeship Online](#).

It is the responsibility of the learning provider to ensure that the registration of apprentices is completed within four weeks of the start of their apprenticeship.

Fair work, inclusion and diversity

The Scottish Apprenticeships system aims to embed fair work principles. Fair Work First is the Scottish Government's flagship policy for driving high quality and fair work across the labour market in Scotland by applying fair work criteria to grants, other funding and contracts being awarded by and across the public sector, where it is relevant to do so. Through this approach the Scottish Government is asking employers to adopt fair working practices, specifically:

- appropriate channels for effective voice, such as trade union recognition;
- investment in workforce development;
- no inappropriate use of zero hours contracts;
- action to tackle the gender pay gap and create a more diverse and inclusive workplace; and
- payment of the real Living Wage.

Further guidance on Fair Work First is available from <https://www.gov.scot/publications/fair-work-first-guidance-support-implementation/>

The design and development of Scottish Apprenticeships aims to embed these principles in practical ways by including opportunities for feedback from apprentices as well as the availability of clear pathways into future opportunities beyond the apprenticeship itself.

Protected characteristics

The Equality Act 2010 includes nine protected characteristics, which are age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, and sex and sexual orientation. It is against the law to discriminate based on these protected characteristics. Skills Development Scotland is a Corporate Parent and, to that end, includes 'care experienced' in a similar way to protected characteristics in all its funded programmes and services.

Attracting the best people into apprenticeships involves ensuring that barriers are removed. Receiving the right support at the right time unlocks the potential of people who could otherwise be denied the opportunity to go on and become valued employees. Supporting people to feel confident about disclosing their protected characteristics in a safe and respectful way allows employers and learning providers to put the right conditions in place to unlock that potential; the right time for this is often at the start of an apprenticeship or even at the recruitment stage. In practice, it might involve ensuring that reasonable adjustments are made to accommodate apprentices, where that is possible and to help them make the most of their apprenticeship journey. Examples might include (but are not limited to) supporting people with sensory impairments, supporting people for whom English is not their first language and supporting people who are care experienced (for example, through fostering, adoption or residential care).

Diversity in Digital Technology

Evidence shows that women tend to be under-represented within the technology sector, although this can vary by job role. Guidance on good practice in attracting and retaining women within technology roles can be found in the [Tackling the Technology Gender Gap Together report](#). We also know that some groups are more likely to face barriers to employment, for example, disabled people, care experienced people, people from ethnic minority groups, and/or people with caring responsibilities. In particular, there has been research into the [benefits of recruiting a neurodivergent workforce](#) within Digital Technology. Recruitment and delivery of this framework should take into account the need to be flexible and adapt to support the different needs of learners. These guides contain practical steps to [make your recruitment more inclusive](#).

Once the apprenticeship starts, there are a number of key considerations, tasks and milestones that apprentices, employers, learning providers, mentors and assessors should undertake to optimise a successful outcome for all parties.

Work-based Learning

Work-based learning – aligned to and assessed against both the **learning outcomes** and the **knowledge, skills and behaviours** of the apprenticeship – is the central and most significant component of an apprenticeship and is based on apprentices’ real-life experiences in the workplace. Work-based learning is a partnership between apprentice, employer and learning provider and all apprentices must have the support of a mentor in the workplace.

Get more information on work-based learning [here](#).

Meta-skills Development

This apprenticeship includes a learning outcome that provides opportunities to develop meta-skills. To effectively develop the meta-skills outlined earlier, apprentices must first understand what they are and how they might apply them in their role. To help with this, a simple exercise to define what meta-skills mean in their role (in language that both apprentice and employer are comfortable with) should be used. This will allow apprentices to consider their own meta-skills profile and which meta-skills they might need to develop or apply in order to perform effectively at work.

Setting development goals, action planning and regularly reflecting on progress will help apprentices to develop their meta-skills and it is vital to provide the time and space for reflections to take place. Naturally

occurring opportunities to discuss and reflect on meta-skills might include inductions or performance management, career development and performance review sessions.

Delivery of Training

The majority of training undertaken in any apprenticeship is focused on skills developed in the workplace. However, in some apprenticeships there is a requirement for elements of structured formal taught learning/training to be delivered outside the normal workplace, for example, in a college or training centre which might include classroom and or development of skills in a workshop/realistic work environment. We often describe this as “off-the-job” training. The way this is delivered is an individual negotiation between the learning provider and the employer.

There is no mandatory requirement for off-the-job formal taught learning in this apprenticeship, however, some employers may choose to deliver elements of training in a college or training centre to enhance the quality of the learning experience for their apprentices.

An initial assessment and learning plan should be developed at the outset with input from the apprentice, employer and the learning provider, to identify any additional needs and provide apprentices with the appropriate support or adaptations required to successfully complete their apprenticeship.

Approaches to Assessment

Apprentices are expected to provide evidence of meeting the learning outcomes and the knowledge, skills and behaviours required of this apprenticeship; also, evidence to demonstrate that they are competent in the workplace. It is important for apprentices to recognise how they have developed skills and understanding along the way, and where these still need to be developed.

Assessment methods	Software Development	Cyber Security	Data Analytics	IT Support	Infrastructure
Projects	✓	✓	✓	✓	
Professional discussion	✓	✓	✓	✓	✓
Portfolio of evidence	✓	✓	✓	✓	✓
Problem based learning	✓	✓	✓	✓	✓
Presentations	✓	✓	✓	✓	✓
Coding tennis/coding in pairs	✓				
Realistic simulation via scenarios/questionnaires		✓		✓	✓
Gamification	✓	✓			
Catch the flag exercises		✓			

Holistic Assessment

The holistic approach allows larger pieces of work to evidence a number of learning outcomes, rather than a piecemeal process of finding separate evidence for each outcome and/or its associated knowledge, skills and behaviours. Work-based projects or problem-based activities often provide the richest opportunities for holistic assessment. Assessment of the common learning outcomes will be done in parallel with assessment of technical skills. Assessment should be undertaken both in a controlled environment and through work related activity depending on what is being assessed, however most assessment should take place in the workplace.

Quality assurance

Skills Development Scotland is responsible for making sure all funded learning is of high quality and benefits the apprentice. A [quality assurance framework](#) is in place to cover the delivery of work-based learning in an apprenticeship and is designed to demonstrate how effectively learning providers and employers support this by ensuring apprentices:

- Receive appropriate support and guidance to enable them to become successful apprentices and confident individuals;
- Receive quality learning and develop their skills to achieve their learning goals;
- Are treated with dignity and respect in a way that promotes equality and inclusion; and
- Work towards successful outcomes, leading to future employment or further appropriate career progression.

The relevant awarding and accreditation bodies will undertake the quality assurance of the assessment of competence-based and professional qualifications. qualifications

Qualification Requirements

During their apprenticeship, apprentices must complete **one** of the five specialist pathways incorporated in the single competence-based qualification, Digital Technology at SCQF Level 6. This brings together the development and assessment of all learning outcomes and knowledge, skills and behaviours including meta-skills required of the apprenticeship

Diploma in Digital Technology at SCQF level 6

Diploma in Digital Technology: Software Development at SCQF Level 6 (GV2D 46)

Diploma in Digital Technology: Cyber Security at SCQF Level 6 (GV2F 46)

Diploma in Digital Technology: Data Analytics at SCQF Level 6 (GV2G 46)

Diploma in Digital Technology: IT Support at SCQF Level 6 (GV2C 46)

Diploma in Digital Technology: IT Infrastructure at SCQF Level 6 (GV2E 46)

Core Skills

Core Skills are broad transferable skills, which can be used in addition to Meta-skills, to help apprentices learn how to manage and adapt how they respond to a changing society.

The five Core Skills are: Communication, Numeracy, Information and Communication Technology, Problem Solving and Working with Others.

Communication, Numeracy, Problem Solving and Working with Others are embedded within this framework at SCQF Level 5, and Information and Communication Technology is embedded at SCQF Level 6, therefore, no separate certification is necessary

Pathways and Progression

A successfully completed apprenticeship, including the achievement of a competence-based qualification, opens the door to a number of opportunities for progression in both work and further learning.

Career advancement

Successful apprentices may progress to roles such as software developer, information security analyst, cyber security engineer, data analyst or data scientist, network engineer, IT helpdesk manager, cloud engineer

Further study

There are several options for those wishing to pursue further professional learning and development in an appropriate specialist pathway, these include:

Technical apprenticeships

- Technical Apprenticeship in Digital Technology at SCQF Level 8: Software Development pathway
- Technical Apprenticeship in Digital Technology at SCQF Level 8: Cyber Security pathway
- Technical Apprenticeship in Digital Technology at SCQF Level 8: Data Analytics pathway
- Technical Apprenticeship in Digital Technology at SCQF Level 8: IT Support pathway
- Technical Apprenticeship in Digital Technology at SCQF Level 8: Network Infrastructure pathway
- Technical Apprenticeship in Digital Technology at SCQF Level 8: Cloud Infrastructure pathway

Graduate apprenticeships

- Graduate Apprenticeship in Cyber Security
- Graduate Apprenticeship in Data Science
- Graduate Apprenticeship in IT: Software Development
- Graduate Apprenticeship in IT: Management for Business

Undergraduate programmes

Successful apprentices may progress to undergraduate study in Software Development, Cyber Security, Data Science or Cloud Computing

Professional Registration

This apprenticeship may support professional recognition as it includes learning and skills outcomes common to a number of the introductory professional qualifications relevant to the Digital Technology sector. The apprentice, employer and learning provider will determine the most appropriate professional route in light of the apprentice's specific work role and the learning provider will guide each successful apprentice on the professional registration process they should follow.

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V.1	August 2023	Approved by AAG for full delivery