POWERING POTENTIAL

Apprenticeship Programme Guide

JUNIOR DEVELOPER SCQF 6

DIGITAL AND TECH APPRENTICESHIPS

Building tech careers in the workplace

We offer digital and tech apprenticeships that focus on the most in-demand skills including; cyber, IT, software development, data and digital marketing, along with others in project management and senior leadership.

We help learners to progress and grow within your company, helping you retain talent and build capabilities.

Our award-winning approach to blended learning enables apprentices to develop further and faster, adding immediate value to their roles, whilst our interactive portal with real-time dashboards and trigger alerts enable managers to effectively and efficiently track progress.

Experience: 20,000 apprenticeships placed

An unrivalled talent pool: In Scotland,. 20,000 apply to join our programmes every year

Proven: We have high learner achievement rates*

*Over 800 Learners achieved their Apprenticeship with QA in 2022

CONTENTS

ROLE PROFILE

JUNIOR DEVELOPER SCQF 6

This programme has been designed to provide learners with the knowledge and key performance skills required to support the development and deployment of software solutions.

Learners do not need any prior knowledge in this area.

**Throughout the programme they will gain:**

- A theoretical and practical understanding of programming and software design
- Knowledge of supporting tools and methodologies required to build and debug software solutions

TYPICAL JOB ROLES

Upon completion of this course learners will be equipped to work in roles such as:

- Junior Developer
- Support Programmer/Developer
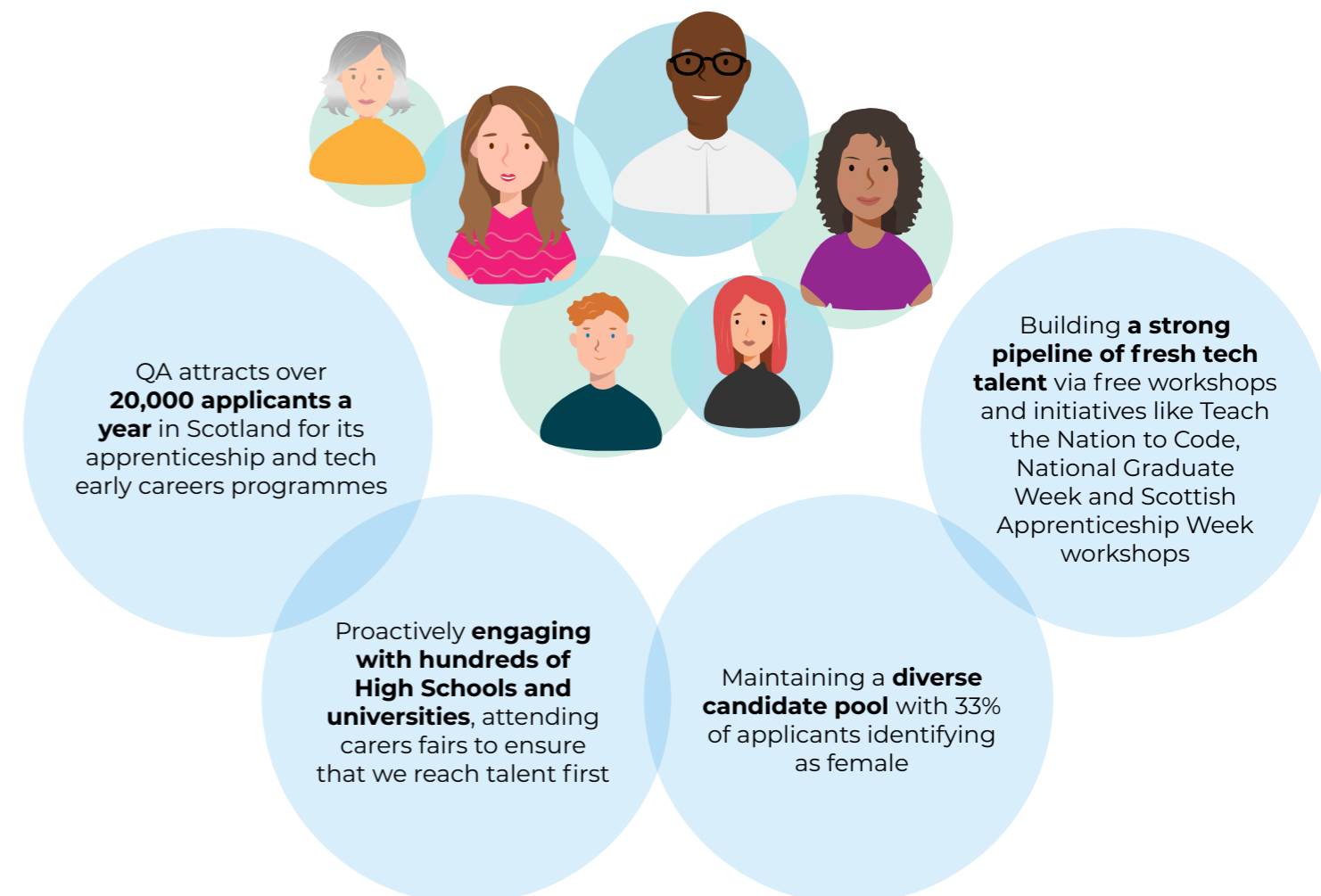- Application Support (Analyst)
- Junior Engineer
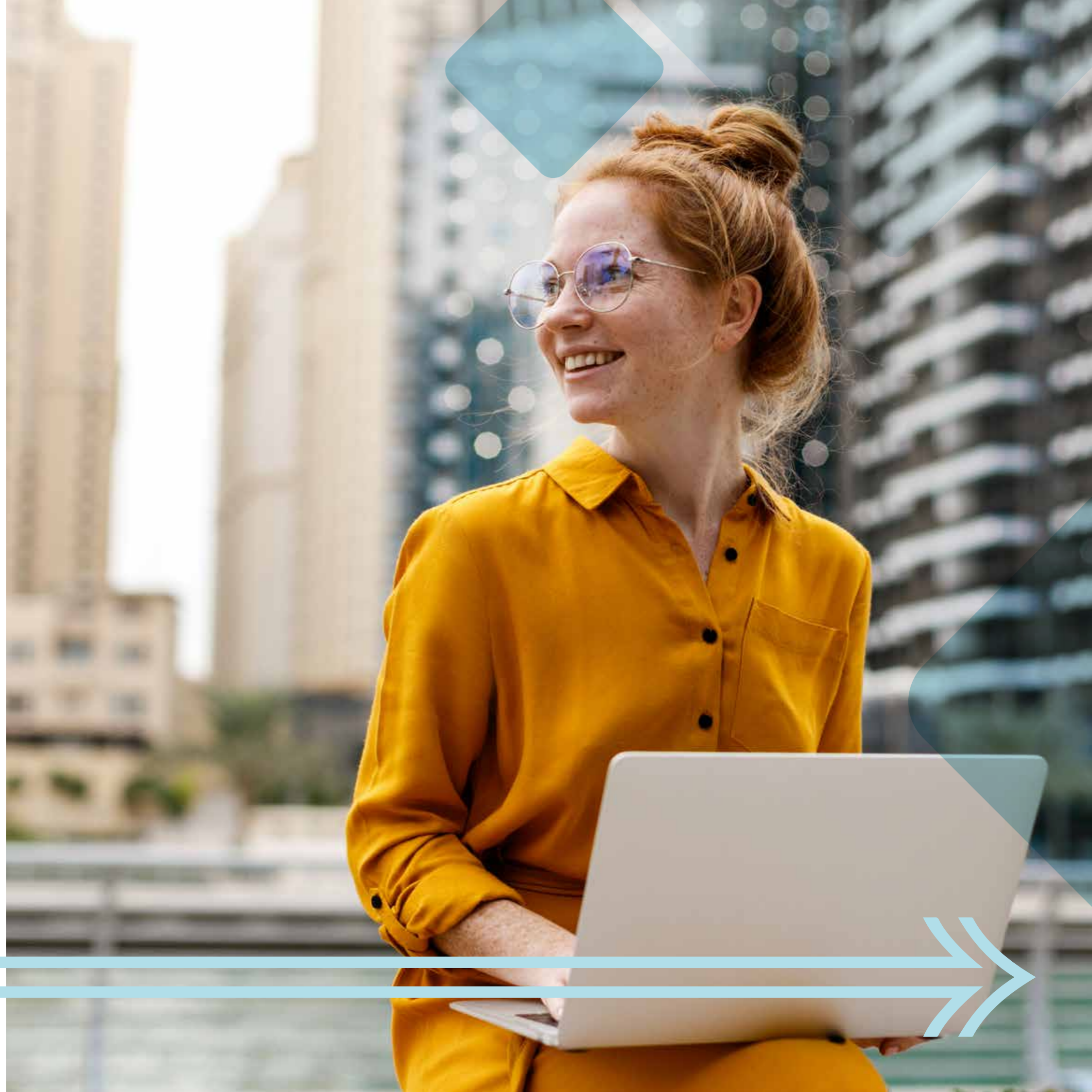
FINDING NEW TALENT

We offer an extensive attraction and recruitment service for employers who are looking to use apprenticeships to bring new talent into their organisation. We use multiple channels and tactics to attract people who are interested in and are passionate about building a career in tech. Our recruitment model includes 1-2-1 interviews to ensure we select apprentices of the highest calibre.

We are committed to increasing diversity and tech and to help achieve this, we work closely with special interest groups and charities including; Code First Girls, Developing The Young Workforce, and LTSB (Leadership Through Sports and Business) who are a social mobility charity. This ensures apprentices from all backgrounds are given the same opportunities, and supports us to close the gender and diversity gap in tech.

QA attracts over **20,000 applicants a year** in Scotland for its apprenticeship and tech early careers programmes

Building **a strong pipeline of fresh tech talent** via free workshops and initiatives like Teach the Nation to Code, National Graduate Week and Scottish Apprenticeship Week workshops

Proactively **engaging with hundreds of High Schools and universities**, attending carers fairs to ensure that we reach talent first

Maintaining a **diverse candidate pool** with 33% of applicants identifying as female

DIVERSITY AND INCLUSION

A BLENDED APPROACH TO LEARNING

We're passionate about diversity in tech

It's our mission to help eradicate the gender gap, and make sure equal opportunities are given to applicants from all backgrounds. We do this through our long-standing partnerships, QA-driven initiatives and use of trending tools and software.

Diversity-first candidate attraction

We've invested in using augmented copy checking tools to ensure language is inclusive, open to all and free from bias.

We use inclusive imagery throughout our campaigns – producing visual content that promotes diversity and inclusion.

Diversity partnerships

We forge partnerships with like-minded organisations who share our vision on STEM gender equality including; DYW, Code First: Girls, Stemettes and Young Professionals.

Promoting inclusivity

We nurture relationships with influencers, schools, colleges and universities via events and interactive sessions to ensure learners from all backgrounds are given the same opportunities.

Initial Assessment

Every candidate goes through an initial assessment where their current knowledge and skills are measured and mapped against the apprenticeship framework.

This process is an assessment of the apprentice's suitability for an apprenticeship programme, and ensures they are placed on the right programme at the right time. This contributes towards a successful completion and a good learner experience.

How we deliver

QA's apprenticeships are designed to immerse the apprentice in their job role while providing time for them to complete the training to become occupationally competent.

QA Apprenticeships also provide more flexibility for the employer, allowing apprentices to learn through a combination of project and lab work, live events, self-research, self-paced learning and peer-to-peer learning.

Employer coaching, shadowing and mentoring remain essential, however, there will be more defined requirements to guarantee this is directly related to the apprenticeship and will be part of the training plan.

LEARNER SUPPORT

Safeguarding at QA

Safeguarding means ensuring the safety and wellbeing of our learners.

At QA, this means ensuring our polices and processes promote and protect learner wellbeing and that while you are on programme, and that while on programme, we teach learners about the types of risk facing modern day British citizens.

This includes cyber risks, mental and physical health information, risks of radicalisation or grooming and much more.

Prevent at QA

Prevent is part of the Government's counter-terrorism strategy.

At QA, this means we teach our staff and learners about the four British values: democracy, rule of law, individual liberty and respect and tolerance.

We also work with Prevent partners to identify people at risk of being or causing terror related harm.
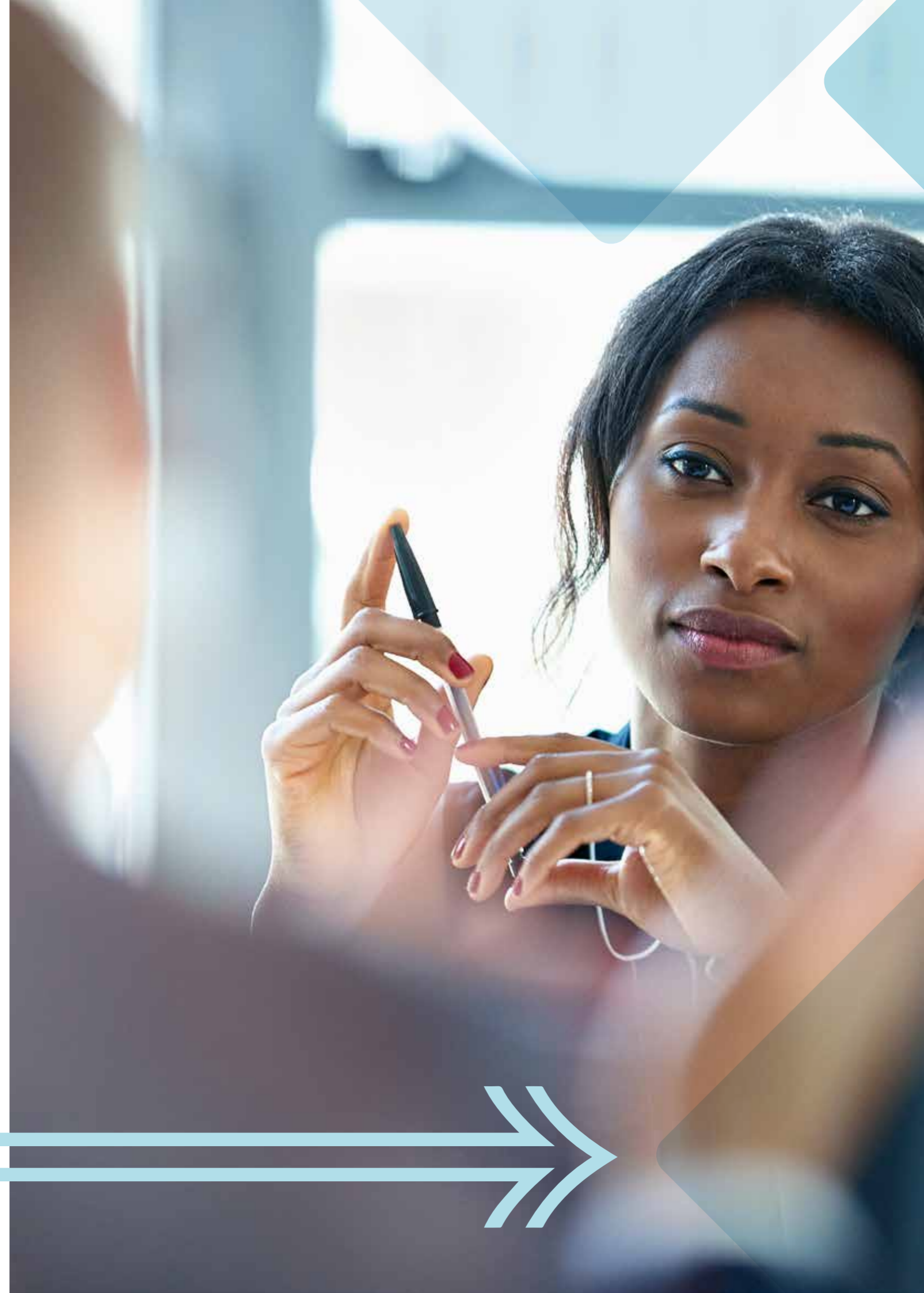
Mental Health at QA

Emotional and mental wellbeing is an important component of successful learning.

Understanding how to protect mental health and promote emotional wellbeing is part of maintaining positive mental welfare.

We will always actively encourage conversations and make sure information is readily available to both learners and staff with regards to mental wellbeing.

Ways to access support if you are worried for yourself or someone else:

- Call us – anytime 07808 050273
- Email: safeguarding@qa.com
- Contact your Skills Coach, tutor or account manager
- Speak to any member of QA staff onsite

DIGITAL BY DESIGN APPRENTICESHIP PROGRAMMES

Digital by Design programmes

QA Digital by Design apprenticeships provide a greater focus on online learning together with using live interaction where it adds the most value for learners.

It means that there is a single learner journey which brings teaching, coaching, learning and assessment into a single, repeatable flow for every module.

In Digital by Design, these three elements will work together:

- The content
- The service and support
- The technology

Discover, practise and apply

All QA apprenticeships use a guided discovery approach to learning, as opposed to traditional methods of delivery such as live events. This shifts the emphasis from content delivery to our learners and their context, resulting in the apprentice feeling empowered to take ownership of their learning experience through the "Discover, Practise, Apply" model.

DISCOVER

Learners will learn the theory, by exploring subjects online and in the live events.
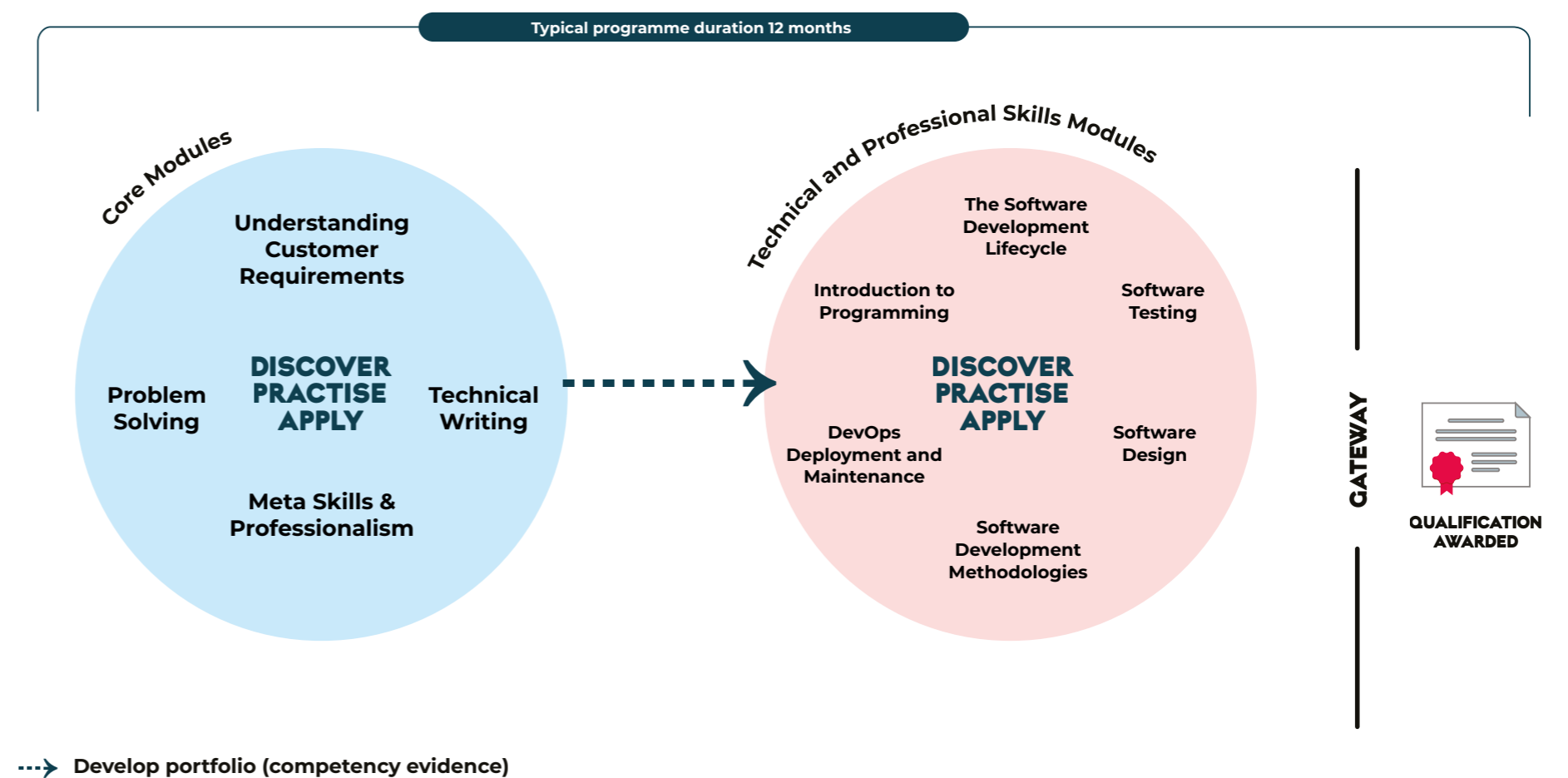
PRACTISE

Learners will practise their new-found knowledge by completing activities - online, in the live events and (most importantly) directly at work in their day-to-day role.

APPLY

Learners will apply what they've discovered and practised at work. They will actively contribute to your organisation whilst building their portfolio of evidence (showing how they've applied their new skills) to gain their qualification.

Junior Developer SCQF 6

Typical programme duration 12 months

Core Modules

Understanding Customer Requirements

Problem Solving

DISCOVER PRACTISE APPLY

Technical Writing

Meta Skills & Professionalism

Technical and Professional Skills Modules

The Software Development Lifecycle

Introduction to Programming

Software Testing

DISCOVER PRACTISE APPLY

DevOps Deployment and Maintenance

Software Design

Software Development Methodologies

GATEWAY

QUALIFICATION AWARDED

---> **Develop portfolio (competency evidence)**

THE LEARNER'S JOURNEY

Programme timeline | Duration: Typical programme duration 12 months

GETTING READY TO START

PROGRAMME LAUNCH

● Technical and Professional Skills Modules
● Core Modules

Module 1 :
Introduction to Programming

Module 2:
Problem Solving

Module 3;
The Software Development Lifecycle

Module 4:
Software Testing

Module 5:
Software Design

Module 6:
Software Development Methodologies

Module 7:
DevOps Deployment & Maintenance

Module 8:
Understanding Customer Requirements

Module 9:
Technical Writing

Module 10:
Meta Skills & Professionalism

Portfolio Certification

Qualification Awarded

PROGRAMME STRUCTURE

Programme Launch

The Programme Launch will introduce learners to the apprenticeship, this module is kicked off with a digital session covering:

- The Programme Outline, Workflow and Structure
- Assessment/Certification/ Qualifications
- Time commitment, planning calendar for apprenticeship
- Setting expectations
- Introduce bud, CA & other technology requirements
- Day-1 learning activity introducing learners to the role of a Software Developer
- During the session, learners will complete the day one learning activity during which they experience the Developer role by working through a scenario.
- As part of this activity the apprentice will be required to write basic Python code, which will involve basic problem solving and mathematics skills.

Assessment

There are no tests or exams involved in completing this apprenticeship. All learners will complete a portfolio of evidence, based on the modules completed on programme. Learners will be guided by their skills coach to achieve this.

There are a number of assessment methods that learners can use to generate and record evidence. Some of these are completed by themselves, such as personal reflective statements and product evidence (annotated screenshots).

Additionally, learners can collaborate with their skills coach to carry out presentations, observations, questioning and professional recorded discussions. Your employer may also provide witness testimonies on your behalf. These assessment methods are used to capture a learner's knowledge and skills across the range of competencies.

THE CORE, TECHNICAL & PROFESSIONAL SKILLS MODULES

The technical and core modules focus on the knowledge and skills required in detail. After each module learners will 'apply' what they've learned at work on current projects.

Module 1: ●
Introduction to Programming

This module gives learners an understanding of how to support the development of software solutions via programming and testing. Learners will gain an appreciation of the core concepts of programming, as well as how software solutions are developed in the IT industry.

- Module duration: 8 weeks
- Classroom attendance: 7 days

Module 2: ●
Problem Solving

In this module learners will develop core problem solving knowledge, enabling them to support and solve problems in line with organisational procedures.

By completing the digital learning, Learners gain an understanding of the end to end problem solving process, including; problem solving tools and techniques, trouble shooting, problem diagnosis, problem analysis, resolution planning, solution implementation and documenting of outcomes.

- Module duration: 8 weeks
- Classroom attendance: 7 days

Module 3: ●
The Software Development Lifecycle

This module gives learners an understanding of the wider considerations of software development outside of the core programming of an application, using the software development lifecycle as a backdrop to contextualise the planning, requirements gathering and designs needed before developing a software solution for a customer requirement.

- Module duration: 2 weeks
- Classroom attendance: N/A

Module 4: ●
Software Testing

This module gives learners an appreciation of the importance of testing on both a theoretical and practical level.

Learners will learn about the basics of testing, and how that applies to the importance of software development. Learners will be introduced to several testing types, and learn how to module test applications based on developed test cases.

- Module duration: 4 weeks
- Classroom attendance: 1 day

Module 5: ●
Software Design

This module takes a deeper dive into the design principles and considerations software developers have to take when going through a software project.

Learners will gain a stronger appreciation for design documentation, both technical (such as ERDs and process flow) and non-technical (such as user stories), and their value within a project.

- Module duration: 4 weeks
- Classroom attendance: N/A

Module 6: ●
Software Development Methodologies

This module gives learners a stronger understanding of the working patterns undertaken within software development, with a particular emphasis on Scrum and DevOps practices.

This module will also discuss many of the best practices undertaken within development with the context of these methodologies in mind.

- Module duration: 4 weeks
- Classroom attendance: 2 days

● Technical and Professional Skills Modules
● Core Modules

Module 7: ●
DevOps Deployment & Maintenance

This module pivots the learner focus onto the deployment process of software; how to deploy software, what tools are most commonly used within software deployment, and the continued maintenance of software once deployed.

Learners will gain an understanding of the common processes encountered when working with live software, and how to operate within a release management schedule.

- Module duration: 6 weeks
- Classroom attendance: 2 days

Module 8 ●
Understanding Customer Requirements

In this module learners develop their fundamental knowledge of project delivery, enabling them to effectively support project delivery in their place of work.

Learners will work through the digital learning gaining a theoretical appreciation of: project delivery, stakeholder management, requirement definition, task and project planning, risk management and effective communication.

- Module duration: 4 weeks
- Classroom attendance: 1 day

Module 9: ●
Technical Writing

In this online module Learners will enhance their knowledge and understanding of workplace documentation, enabling the apprentice to produce and update documents for customers, colleagues and users in line with organisational process.

Learners will work through digital content covering document planning, creation and formatting, developing their understanding of audience needs, graphical and visualisation considerations, version control, quality assurance and storage.

- Module duration: 3 weeks
- Classroom attendance: N/A

Module 10: ●
Meta Skills and Professionalism

n this online module learners develop their core knowledge of Meta Skills and Personal Practice. Enabling learners to understand the purpose and importance of meta-skills, how they relate to one's work and how to use reflective practice to identify gaps in knowledge and skills.

Recognise the importance and purpose of meta-skills and how they relate to their work.

Learn how to set SMART goals, prepare development plans, and identify sources of up-to-date information to support continuous professional development.

Describe the benefits and impact of Personal and Professional Development, including how to measure and record progress against key performance indicators.

Develop strategies for managing well-being in the workplace and seeking and acting on feedback to improve skills and knowledge using various learning models and styles.

- Module duration: 3 weeks
- Classroom attendance: N/A

Qualifications earned

When they achieve this apprenticeship, learners will earn the following qualification:

- Junior Developer Level 6

● Technical and Professional Skills Modules

● Core Modules

LEARNING OUTCOMES

Apprentices will be assessed on all areas which emphasise the importance of both technical and core skills in the workplace.

CORE MODULES:

Digital Tech Primer (Optional)
- Enterprise IT
- Basic PC skills

Problem Solving
- Introduction to Problem Solving
- Identifying, Diagnosing and Analysing Problem
- Planning Resolutions
- Implementing and Assessing Solutions
- Documenting Problems and Learning From Experience

Understanding Customer Requirements
- Introduction to Projects
- Stakeholders and Communications
- Project and Task Planning
- Risk
- Racking and reporting progress

Technical Writing
- Introduction to Documentation
- Industry Standards, Regulation and Policy
- Planning and Formatting
- Document Creation
- Graphics and Visualisation
- Version Control and Sign Off

Meta Skills & Professionalism
- What are Meta Skills
- Personal Development
- Learning Styles
- Performance Reviews
- SMART Objectives
- Wellbeing

TECHNICAL AND PROFESSIONAL MODULES:

Introduction to Programming
- An Introduction to programming and software development
- Most popular languages for front-and back-end development
- Developing software for different platforms
- Industry standard tooling and IDEs, including the basics of Version Control
- Basics of Python
- HTML and CSS basics

The Software Development Lifecycle
- The Software Development Lifecycle (Planning, Requirements, etc.)
- UI/UX basics, accessibility
- Diagramming in Software Development (ERDs, Process Diagrams)
- Software Documentation and User Guides

Software Testing
- The Basics of Testing
- What is Testing – general and in software
- The importance of testing
- Different types of testing
- Unit, automated, performance, load
- User acceptance, white/black box
- Test cases, test scenarios, test data, etc.
- Introduction to Test-Driven Development
- Debugging, maintaining, refactoring programs
- The Basics of PyUnit

Software Design
- Digital content (videos, articles, exercises and quizzes) on the following topics:
- Transforming requirements into designs – the SDLC
- User stories and Use Cases
- User interface design (building from earlier module)
- Design Patterns in Software
- Assessing quality in software design – prototypes, feedback loops
- Creating prototype designs of the expected user interface
- How to present detailed designs
- The Basics of PyUnit

Software Development Methodologies
- What is Waterfall?
- What is Agile?
- What is DevOps?
- Deep diving into Scrum
- Scrum roles
- Scrum practices
- Scrum events
- Estimation and risks – burndown charts, risk assessment
- Other development methodologies – XP, DSDM, etc.
- Understanding Code quality

DevOps Deployment and Maintenance
- What does it mean to deploy software?
- Common deployment processes and tools
- VCS, CI/CD, Containers, Configuration Management, Environments
- Scripting automation within releases
- Documentation, release notes, versioning releases
- Bugs, enhancements, errors
- Defect management and reporting
- Change management, SLAs, and legal requirements
- Process documentation and reporting
- The sources of knowledge to inform software issue resolutions
- The service level agreements (SLAs) for responding to and resolving defects

EXPANDING YOUR TECHNICAL SKILLS WITH cloud academy
A QA COMPANY

Our apprentices are given full access to our proprietary Cloud Academy platform for the duration of their programme.

Cloud Academy brings the very latest and up-to-date content to our apprentices through single units, courses and comprehensive learning paths to really build on the core learning outcomes defined within the programme. Furthermore, apprentices are able to prepare for the full suite of vendor qualifications across AWS, GCP and Azure and much more.

Cloud Academy users also benefit from Hands-On Labs, Lab Challenges and Lab Playgrounds providing a safe, sandbox environment in which our learners are able to practise in real time through guided walkthroughs or through their own exploration.

Check out the Training Library - Cloud Academy.

FOR MORE INFORMATION, PLEASE CONTACT

qa.com/contact

Skills Development Scotland

MODERN APPRENTICESHIPS