



Apprenticeship Programme Guide

DATA ANALYST INCLUDING POWER BI

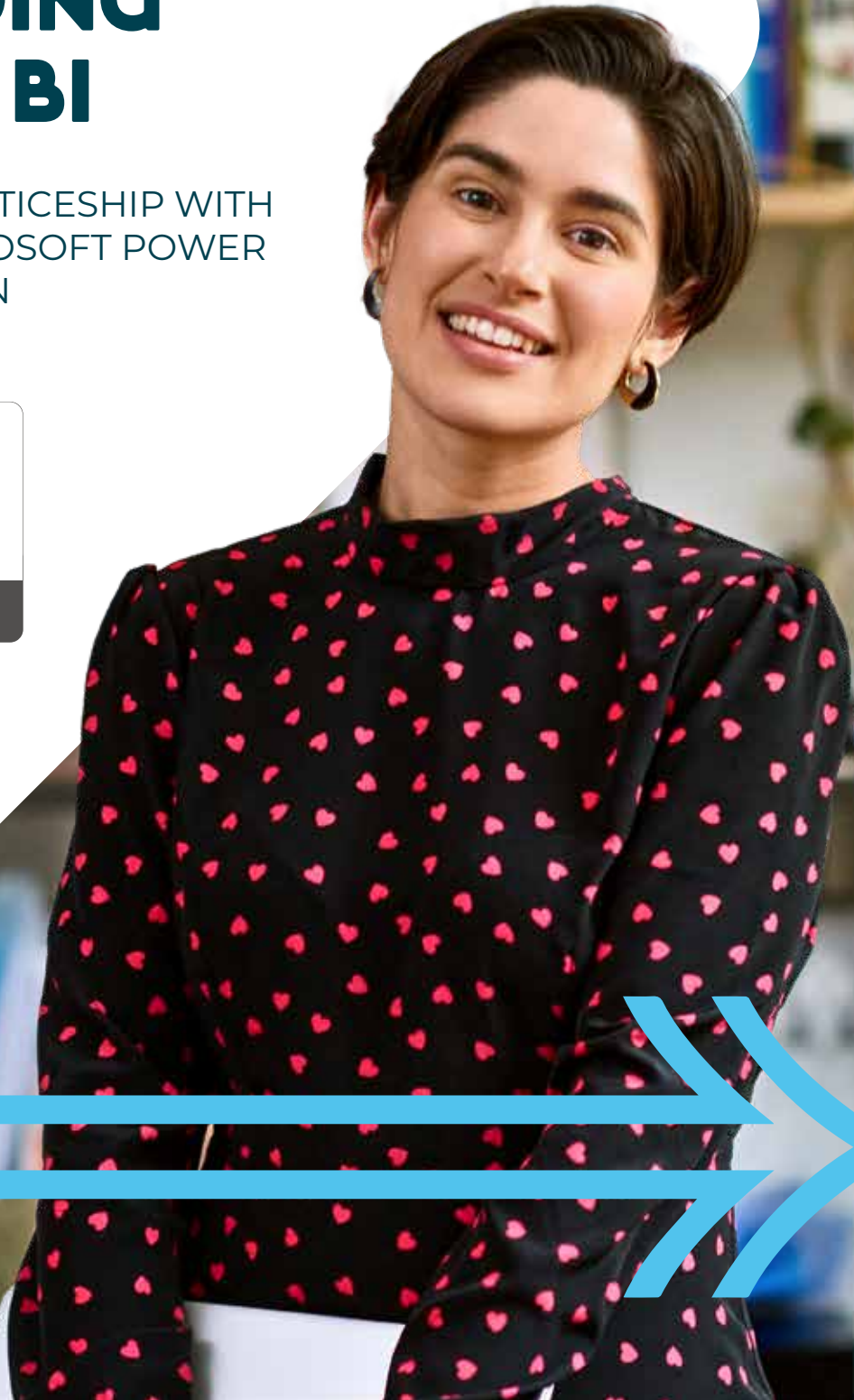
LEVEL 4 APPRENTICESHIP WITH
INCLUSIVE MICROSOFT POWER
BI CERTIFICATION

 **Microsoft**
Solutions Partner

Microsoft Cloud

Training Services

QA.com



DIGITAL AND DEGREE APPRENTICESHIPS

Building tech careers in the workplace

We offer digital and degree apprenticeships that focus on the most in-demand tech skills including; cyber, IT, software development, data and digital marketing, along with others in project management and artificial intelligence (AI).

With programme pathways from Level 3 – Level 7, 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: 30,000 apprenticeships placed



An unrivalled talent pool: 100,000 apply to join our programmes every year



Award-winning: Recipient of the Gold Award at the Learning Tech Awards 2020 for our apprenticeship delivery model

98%

Higher than average provider performance with a pass rate of 98.61%

Based on end point assessments by the BCS 2022

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QA'S PARTNERSHIP WITH MICROSOFT

QA is a Microsoft Solutions Partner for Microsoft Cloud.

Our comprehensive range of courses are kept up to date with the latest Microsoft content and our large team of subject matter experts is here to help you at every stage of your Microsoft training and certification journey.

Our learning professionals are among the best in the world, each with extensive experience and a proven track record of delivering the skills that transform performance and ensure lasting benefits.



QA SUPPORT MICROSOFT'S CAMPAIGN TO NARROW THE DIGITAL SKILLS GAP

Microsoft anticipates that by 2025 the UK will need more than 3 million new skilled people in technology – including 1.5 million new developers and nearly 1 million new people across machine learning, artificial intelligence (AI), data and cloud roles.

As part of the industry's response to this digital skills shortage, Microsoft has announced a five-year campaign called Get On.

We're proud to be supporting Microsoft's Get On five-year initiative, to help 1.5 million people build careers in technology and help 300,000 connect to tech job opportunities.

QA apprenticeship programmes have already delivered over 10,000 Microsoft tech apprentices into UK businesses and to support the initiative, in partnership with Microsoft, QA has designed the apprenticeship programme to align to an exciting Microsoft career path.



There has never been a better time for people thinking about their future to consider a role in tech, that's why we are delighted that QA is joining Microsoft's Get On campaign.

As one of our UK Cloud Solutions Partners, QA brings to bear their long-standing pedigree in training, re-skilling and certifying thousands of Microsoft IT Professionals, developers and apprentices.

Simon Lambert
Chief Learning Officer
Microsoft UK



ROLE PROFILE

DATA ANALYST INCLUDING POWER BI

Data Analysts collect, organise and study data to provide business insight.

Data Analysts are typically involved with managing, cleansing, abstracting and aggregating data, and conducting a range of analytical studies on that data.

They work across a variety of projects, providing technical data solutions to a range of stakeholders/customers issues. They document and report the results of data analysis activities, making recommendations to improve business performance.

Data Analysts need:

- Strong maths and analytical skills
- A methodical, step-by-step approach to analysing and gaining insight
- Attention to detail
- Business skills like effective communication, teamwork and task/time management
- To be able to present data in various forms for a technical and non-technical audience

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JOB ROLE SUITABILITY

As an employer is it important to assess whether a candidate (a new hire or existing employee) is working in a suitable job role to successfully complete their programme.

The checklist has been created to help you assess whether your apprentice will be in a position to demonstrate all of the following Data Analyst duties, during their programme.

Job roles this programme is a great match for:

- Data Analyst
- Customer Data Analyst
- Digital Marketing Analyst
- Finance Analyst
- HR Analyst
- Junior Analyst
- Operations Analyst
- Pricing Analyst
- Procurement Analyst
- Sales Analyst

Checklist

- | | |
|----|---|
| 1 | Will the apprentice be required to identify data sources to meet the organisation's requirement, using evidence-based decision making to establish a rationale for inclusion and exclusion of various data sets and models? |
| 2 | Will they be liaising with the client and/or colleagues from other areas of the organisation to establish reporting needs and deliver accurate information? |
| 3 | Will they be collecting, compiling and, if needed, cleansing data, such as sales figures, Digital Twins etc. solving any problems that arise, to/from a range of internal and external systems? |
| 4 | Will they have to create performance dashboards and reports in the Visualisation and Model Building phase? |
| 5 | Will they be given responsibility to support the business by maintaining and developing reports for analysis to aid with decisions, and adhering to organisational policy/legislation? |
| 6 | Will they be producing a range of standard and non-standard statistical and data analysis reports in the Model Building phase? |
| 7 | Will they have the responsibility to identify, analyse, and interpret trends or patterns in data sets? |
| 8 | Will they be responsible for drawing conclusions/recommend appropriate responses/offer guidance/interpretation? |
| 9 | Have the opportunity to summarise and present the results of data analysis to a range of stakeholders, making recommendations? |
| 10 | Will they be in a position to provide regular reports & analysis to different management/leadership teams, ensuring data is used and represented ethically in line with relevant legislation (e.g. GDPR, which incorporates Privacy by Design). |
| 11 | Will they have the responsibility to ensure data is appropriately stored and archived, in line with relevant legislation e.g. GDPR? |
| 12 | Will they have the opportunity to practise continuous self-learning to keep up to date with technological developments to enhance relevant skills and take responsibility for their own professional development? |



ENTRY REQUIREMENTS

The entry requirements for this programme are as follows:

Standard entry:

- Level 3 Qualification (Apprenticeship/A Levels/BTEC etc)
- OR equivalent work experience (typically 2 years in a relevant role)

PLUS

- 5 x GCSE's including English & Maths at Grade 4 (C) or above
- Experience with using Excel and Microsoft products (or similar)
- Learners should not be entered for a qualification of the same type, content and level as that of a qualification they already hold.

*Work experience relates to any valid work experience

**Existing staff work experience should be in a Data Analyst role. The minimum of 2 years must include working in an environment that requires some kind of analysis. This would include creation of reports and usage of spreadsheets. Career changers would be coming in from diverse experience backgrounds. The candidate should typically be keen on working with numbers, processing and articulating data and information.

FINDING NEW TALENT

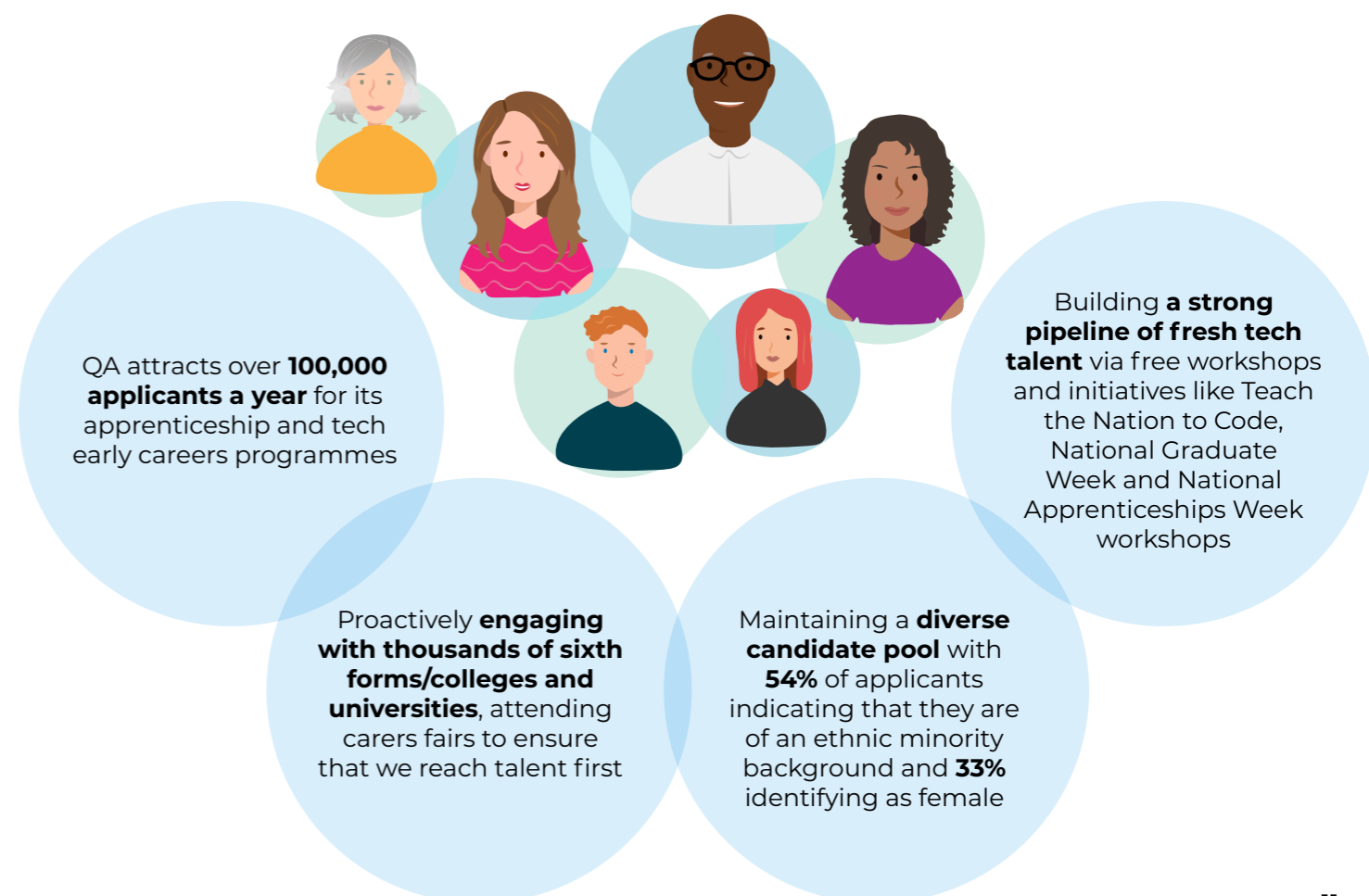
Each year, QA attracts over 100,000 applicants for our early careers opportunities, building a robust pipeline of fresh tech talent.

Our success lies in leveraging a wide array of channels and partnerships that ensure we have a constant flow of applications and access to a diverse range of candidates.

We have strong partnerships in place with educational and career institutions, including local job centres, career networks, youth groups, and universities.

We have a prominent presence on all major job boards in the market, ensuring maximum visibility for our job postings.

Our QA team employs social media campaigns to reach specific profiles in certain regions or demographics.



DIVERSITY AND INCLUSION

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.

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.

Diversity partnerships

We forge partnerships with like-minded organisations who share our vision on STEM gender equality including STEM women, Stemettes, Young Professionals and Coding Black Females.

Initial Assessment

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

This process is an assessment of the apprentice's eligibility 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.

We make tech skills accessible to all

We run free tech workshops including 'Teach the Nation to Code' and 'Teach the Nation to Cloud' so anyone can explore technology career opportunities.

A BLENDED APPROACH TO LEARNING

How we deliver

QA apprenticeships are designed to immerse the apprentice in their job role while providing time for them to complete the required off-the-job training to become occupationally competent and ready to undertake End-Point Assessment to complete their apprenticeship standard.

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.

Full-time apprentices (those that work 30 hours per week or more) will be required to spend at least 20% of the apprentice's normal working hours over the planned duration of the apprenticeship practical period on off-the-job training. This means the minimum requirement for apprentices working 30 hours or more per week is an average of 6 hours of off-the-job training per week (i.e. 20% of 30 hours) over the planned duration.

Employer coaching, shadowing and mentoring remain off-the-job training, 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 policies 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.

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

- Call us – anytime 07808 050273
- Email: safeguarding@qa.com
- Contact your Digital Learning Consultant (DLC), tutor or account manager
- Speak to any member of QA staff onsite



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.

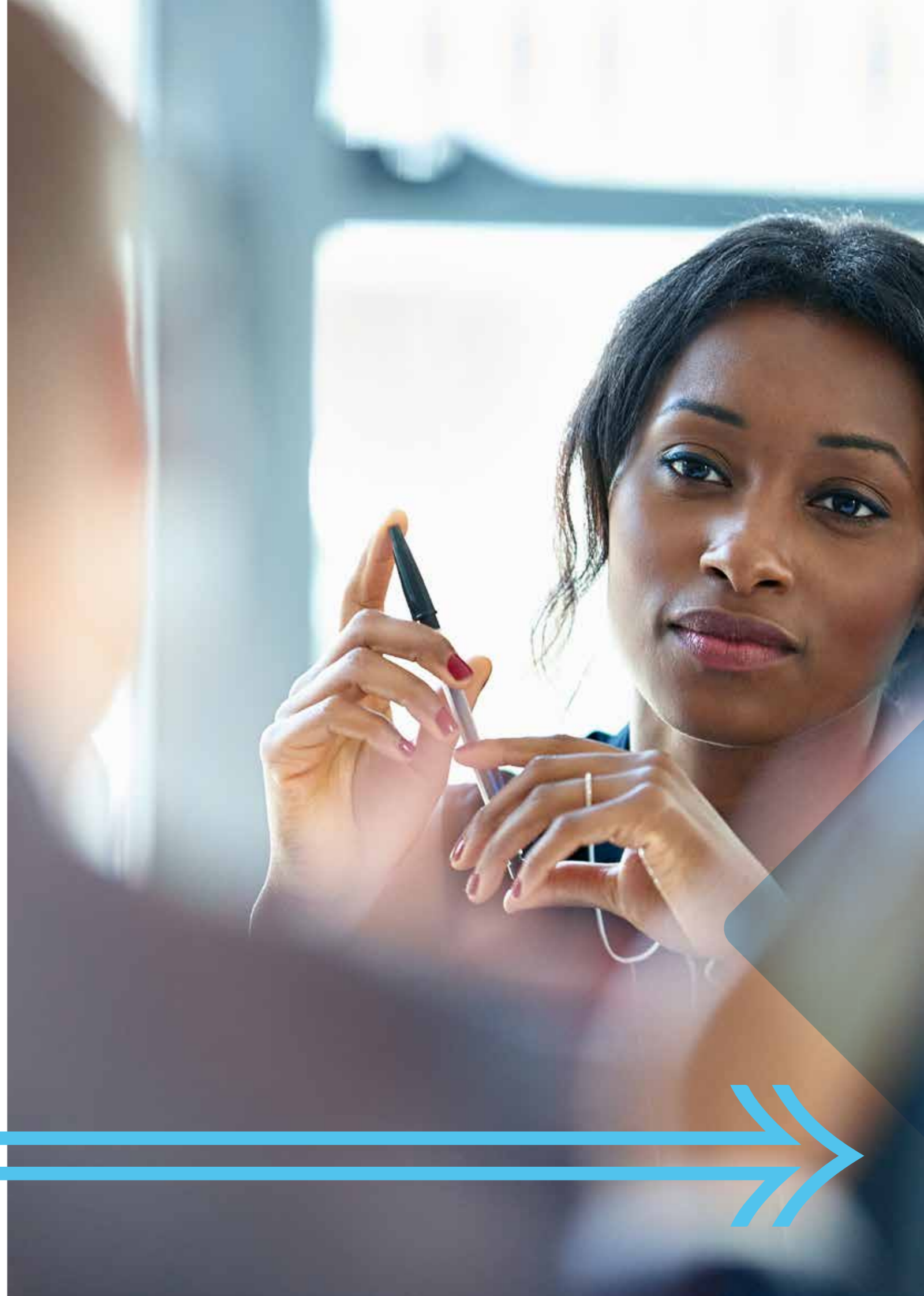


Mental Health at QA

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.



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. This ensures that from the beginning of the programme there is a clear focus on successful completion of the end-point assessment (EPA).

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.



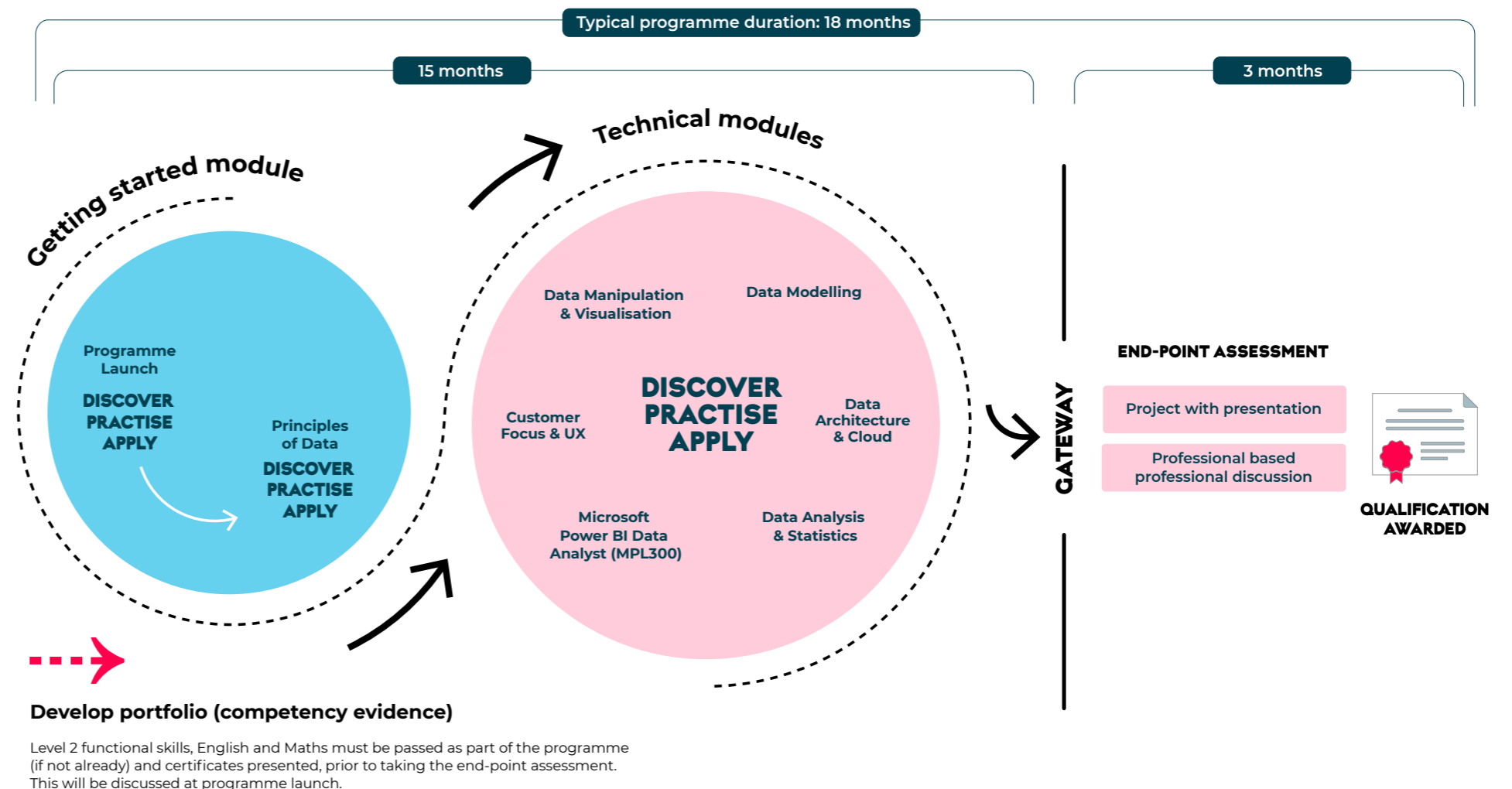
PRACTISE

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.



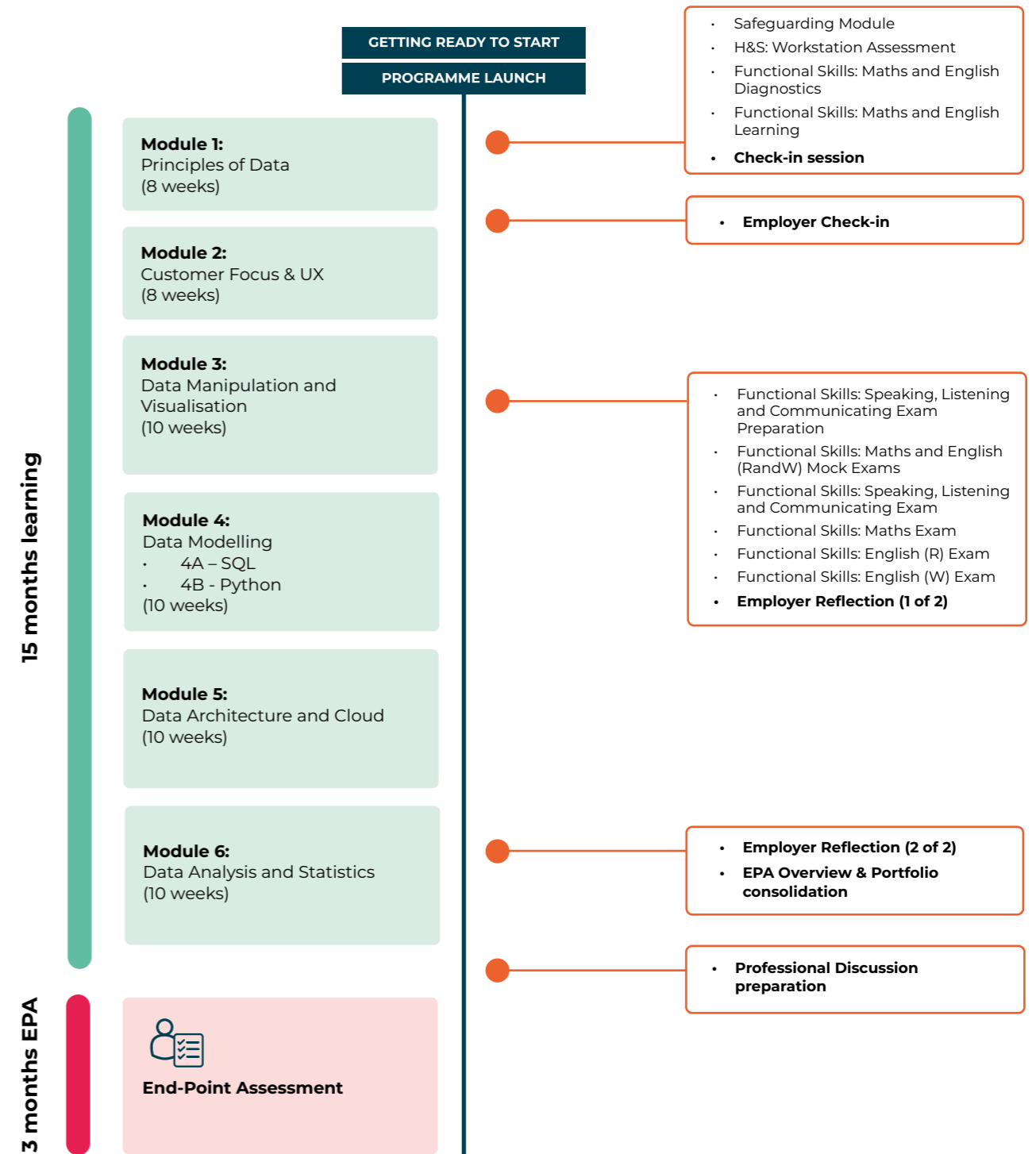
APPLY

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.



THE LEARNER'S JOURNEY

Typical programme duration: 15 months (+3 months End-Point Assessment)



Qualification Awarded

GETTING STARTED MODULE

The modules in our Data Analyst including Power BI apprenticeship equip learners with the advanced technical skills they need for their role. Each module develops the core set of skills they must be able to do well to be competent in their role.

In each module, learners will 'discover', 'practise' and 'apply' what they've learned.

This helps them put their newly-found knowledge into action back at work.

There are six modules to complete with the following learning outcomes.

Module 1: Principles of Data

Programme Launch

- Live virtual session to commence learning
- Discover and practice, linking the apprenticeship to the workplace
- Apply, demonstrating the learners knowledge of their workplace and personal development planning for the programme and generating portfolio evidence

Discover. Practise. Apply.

This digital module provides learners with fundamental knowledge on legislation, security and ethics alongside understanding core data theory including the principles of data, types of data and data lifecycle. This module also introduces the learners to SQL and Python, providing foundations for the following modules.

Topics covered:

- Data legislation, security and standards
- Data Lifecycle
- Principles of open and public data
- Structured and unstructured data
- Data Ethics
- Introduction to SQL
- Introduction to Python
- Introduction to Miro boards

Live session: 0 days

TECHNICAL MODULES

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

Module 2: Customer Focus & UX

The module explores how to improve the user experience by focussing on the customer, through design thinking, understanding the customer through personas and pain points, and effectively capturing and defining requirements.

Topics covered:

- Usability and UX
- Design thinking and UX
- Identifying and understanding users – user personas
- Identifying a problem (pain point) and its root cause
- Project components and criteria, types of projects
- Types of requirements
- Requirement capture techniques
- Prioritising requirements
- Project breakdown - product, work and organization break down structures
- Data risks in a project and their mitigation
- Responses to risk and opportunity
- Risk registers

Live session: 2 days

Module duration: 8 weeks

Module 3: Data Manipulation & Visualisation

This module explores accessing and manipulating data from different sources, and how to combine and transform them to prepare for analysis and perform visualisation.

Topics covered:

- Lookup functions and pivot tables in Excel
- Descriptive statistics with Excel
- Data Analysis ToolPak in Excel
- Population and sampling
- Data quality dimensions
- Data Analytics Life Cycle (DALC)
- Importing data into Power BI
- Power BI - report, data and data model mode
- Power BI – Append Queries and Merge Queries
- Visuals in Power BI
- DirectQuery mode in Power BI
- Relationships in Power BI

Live session: 3 days

Module duration: 10 weeks

Module 4: Data Modelling

This module is in two parts. The live session for the first part introduces learners to data modelling, databases and working with SQL. The second part introduces them to Python, its main libraries numpy and pandas and their application to calculating descriptive statistics and correlation analysis. The learners are also introduced to machine learning principles and methods.

The module also introduces R through online courses on Cloud Academy.

- Topics covered:
- Types of database architectures
- Data models and business requirements
- Probability of events
- Basic statistical concepts
- Hypotheses and errors
- Distributions
- R programming

Live session: 2x3 days

Module duration: 10 weeks

Module 4A – SQL

- Conceptual, Logical and Physical data models
- Normalisation
- Retrieving data
- Filtering and sorting rows
- Common functions – text, date, and data conversion functions
- Aggregation
- Advanced Grouping - Rollup, Cube, Grouping Sets
- Working with multiple tables - Joins
- Working with multiple queries - Set Operators
- Window functions
- Views

Module 4B – Python

- Introduction to Anaconda Navigator and Jupyter Notebooks
- Python programming basics
- Control flow – selection and iteration
- Lists and strings
- File input and output
- Collections: Tuples, Dictionaries, Sets
- Python functions
- Python libraries: numpy. ND-arrays.
- Python libraries: pandas. Series and Data Frame.
- Descriptive statistics with numpy and pandas
- Correlation analysis with Python
- Introduction to machine learning



Module 5: Data Architecture & Cloud

This module introduces data architecture and cloud technologies. It deals extensively with designing and building data warehouses and their use in Business Intelligence analysis and reporting.

Topics covered:

- Introduction to data architecture
- Introduction to cloud computing
- Designing data flows in Azure
- Azure Databricks and Data Lake storage
- Amazon Redshift Service
- Data storage mechanisms (OLTP/OLAP)
- Designing and building data warehouses in SQL Server
- Aggregates, summary tables and cubes and their visualisation in Power BI
- Introduction to SSIS
- Building data warehouses in SSIS

Live session: 5 days

Module duration: 10 weeks

Module 6: Data Analysis & Statistics

The module explores statistical analysis methodologies, predictive analytics, machine learning and data mining, with implementations in R and Python.

Topics covered:

- Introduction to Big Data
- MapReduce, Hadoop and the Hadoop ecosystem
- Introduction to Data Mining
- Linear and non-linear models
- R basics
- R data structures
- Descriptive statistics with R
- Exploratory Data Analysis (EDA) with R
- Statistical concepts and selecting statistical methods.
- T-tests and ANOVA
- Correlation analysis
- Simple and Multiple Linear regression. Ordinary Least Squares (OLS).
- Logistic regression and its use for classification
- Time series – ARIMA models
- Association rules mining
- Cluster analysis
- Classification with decision trees

Live session: 5 days

Module duration: 10 weeks

Additional Module: Microsoft Power BI Data Analyst (MPL300)

This course will discuss the various methods and best practices for modelling, visualizing, and analysing data with Power BI.

The course will show how to access and process data from a range of data sources including relational and non-relational data.

You will also explore how to implement proper security standards and policies across the Power BI spectrum including datasets and groups. The course will also discuss how to manage and deploy reports and dashboards for sharing and content distribution.

Finally, this will show you how to build paginated reports within the Power BI service and publish them to a workspace for inclusion within Power BI.

This is delivered through a blended approach including digital content, live learning and workplace application.

Gateway and End-Point Assessment Consolidation, Preparation and Assessment (Online)

This final component will get learners ready to go through the 'gateway'.

The apprenticeship gateway is an internal QA process. It will ensure that your learner's work is ready to be assessed by the EPAO. This exists to increase their chances of success.

At this pre-gateway stage learners will:

- Consolidate and submit their portfolio
- Throughout the programme apprentices have completed mock professional discussions to prepare them for the EPA process

In addition to the items above, learners must have successfully completed:

- KSBs have been clearly evidenced
- All the functional skills exams (except exempt learners)

Once learners have met all the above criteria, they will go through the gateway. When approved, it takes 3 months from gateway to achievement. During this time, learners will:

- Complete their professional discussion, which is underpinned by their portfolio
- Complete their project and presentation with questioning

Duration: 7 days + EPA

Qualifications earned



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

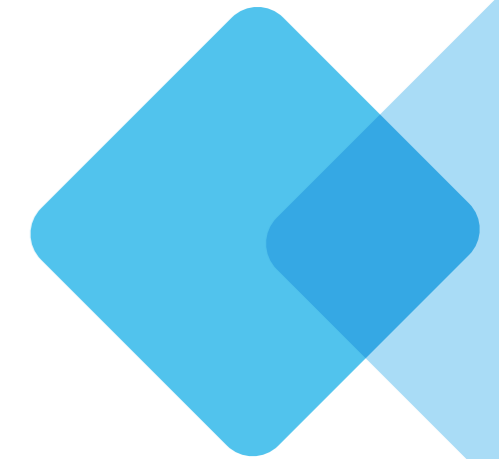
- Data Analyst L4 apprenticeship
- Microsoft Power BI Data Analyst (MPL300)
- Optional Qualifications (from Azure)



LEARNING OUTCOMES

Apprentices will be assessed on 3 key areas; their ability to convey knowledge, their ability to demonstrate practical skills and their capability of displaying professional workplace behaviour. These will be developed during an apprentice's learning journey, with the goal of displaying all of these competencies during their assessment.

These knowledge, skill and behaviour points ensure rounded development, as the standards provide a greater emphasis on the importance of both technical and soft skills in the workplace.



KNOWLEDGE

- K1: current relevant legislation and its application to the safe use of data
- K2: organisational data and information security standards, policies and procedures relevant to data management activities
- K3: principles of the data life cycle and the steps involved in carrying out routine data analysis tasks
- K4: principles of data, including open and public data, administrative data, and research data
- K5: the differences between structured and unstructured data
- K6: the fundamentals of data structures, database system design, implementation and maintenance
- K7: principles of user experience and domain context for data analytics
- K8: quality risks inherent in data and how to mitigate or resolve these
- K9: principal approaches to defining customer requirements for data analysis
- K10: approaches to combining data from different sources
- K11: approaches to organisational tools and methods for data analysis
- K12: organisational data architecture
- K13: principles of statistics for analysing datasets
- K14: the principles of descriptive, predictive and prescriptive analytics
- K15: the ethical aspects associated with the use and collation of data

SKILLS

- S1: Use data systems securely to meet requirements and in line with organisational procedures and legislation including principles of Privacy by Design
- S2: implement the stages of the data analysis lifecycle
- S3: apply principles of data classification within data analysis activity
- S4: analyse data sets taking account of different data structures and database designs
- S5: assess the impact on user experience and domain context on data analysis activity
- S6: identify and escalate quality risks in data analysis with suggested mitigation or resolutions as appropriate
- S7: undertake customer requirements analysis and implement findings in data analytics planning and outputs
- S8: identify data sources and the risks and challenges to combination within data analysis activity
- S9: apply organizational architecture requirements to data analysis activities
- S10: apply statistical methodologies to data analysis tasks
- S11: apply predictive analytics in the collation and use of data

- S12: collaborate and communicate with a range of internal and external stakeholders using appropriate styles and behaviours to suit the audience
- S13: use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data
- S14: collate and interpret qualitative and quantitative data and convert into infographics, reports, tables, dashboards and graphs
- S15: select and apply the most appropriate data tools to achieve the optimum outcome

BEHAVIOURS

- B1: maintain a productive, professional and secure working environment
- B2: show initiative, being resourceful when faced with a problem and taking responsibility for solving problems within their own remit
- B3: work independently and collaboratively
- B4: logical and analytical
- B5: identify issues quickly, investigating and solving complex problems and applying appropriate solutions. Ensures the true root cause of any problem is found and a solution is identified which prevents recurrence.
- B6: resilient - viewing obstacles as challenges and learning from failure.
- B7: adaptable to changing contexts within the scope of a project, direction of the organisation or Data Analyst role.

HOW TO GET READY FOR THE END-POINT ASSESSMENT

We want to deliver memorable learning experiences, whilst developing learners with well-rounded skillsets, ready to meet their professional requirements.

To ensure we are achieving this goal consistently, it is important for learners, digital learning consultants and employers to work together to ensure learners are supported to succeed in their apprenticeship's end-point assessment (EPA).

In this section we outline a number of guidelines which intend to provide a framework so that this can be achieved in a consistent way.

Preparation for the end-point assessment starts from day one.

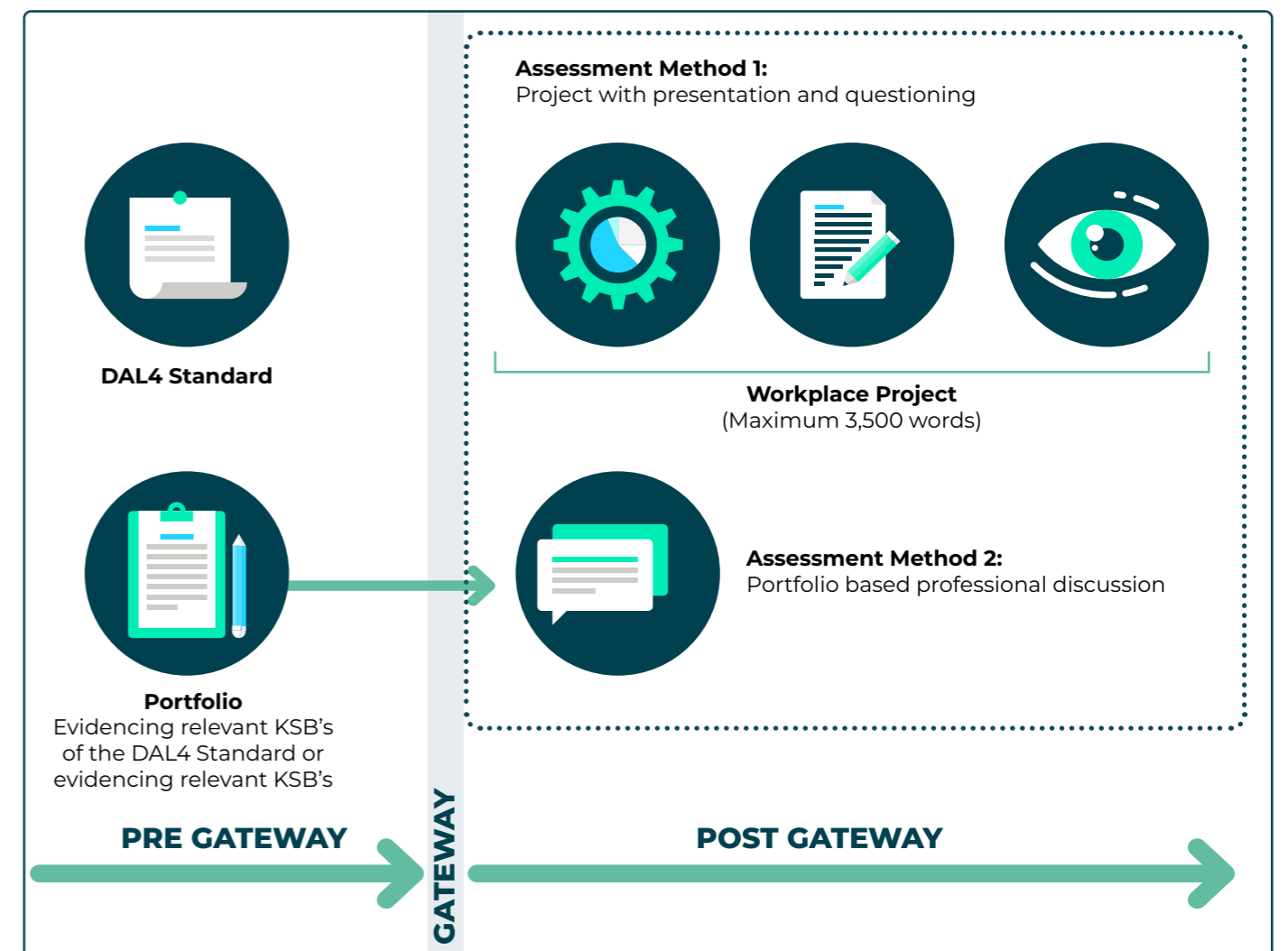
STAYING ON-TRACK THROUGHOUT THE PROGRAMME

Learners and employers should start preparing for EPA from the start of the programme. Employers will need to ensure that learners are given the right opportunities at work to develop and prove the knowledge, skills and behaviours in the standard.

For this reason, it is very important to keep learners, digital learning consultants and employers informed about the programme progress. It is critical to the success of the apprenticeship programme that all of the above work together to ensure that each learning journey is kept on-track avoiding further interventions (and time commitment) whenever possible.

To help learners with this, we have created two guiding documents – a programme timeline, and a progress review map – so progress can be checked against it, at any time. Any progress deviations above 15% will be reviewed on a case-by-case basis. This is to ensure the apprenticeship is progressing in a timely manner.

HOW THE EPA IS GRADED



Market defining funded learning programmes delivered digitally with leading-edge technology

DIGITAL BY DESIGN

We provide an award-winning approach for the delivery of our apprenticeship programmes called, Digital by Design (DxD).

Launched in 2020, DxD programmes are not just 'claiming' to be digital delivered, but provide a fully integrated online and digital learning experience for the 21st century. Intuitive technology blends and drives the user experience whilst Digital Learning Consultants guide learners through blended learning and cloud-based pathways.

We provide unrivalled response times to queries and turnaround times on submission feedback, resulting in learners keeping on track (98%) and exceptional completion rates. Don't just accept ordinary – experience real digital learning.

CONTINUED PROFESSIONAL DEVELOPMENT



Learners on QA's digital apprenticeship programmes uniquely benefit from full access to Cloud Academy, our world-leading digital learning platform.

Cloud Academy offers learners over 10,000 hours of additional learning content such as videos, quizzes and hands on labs in disciplines including Agile Development, Big Data, Cyber Security, Cloud (AWS, Azure, GCP), DevOps, Project Management and much more.

Learners on the Data Analyst including Power BI L4 programme have access to hands-on labs and sandboxed environments enabling them to safely practise new skills before confidently applying them in the workplace. Furthermore, Cloud Academy provides learners with access to specific learning pathways and certifications to achieve continued development.



**FOR MORE
INFORMATION,
PLEASE CONTACT**

0333 060 7701
qa.com/contact



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