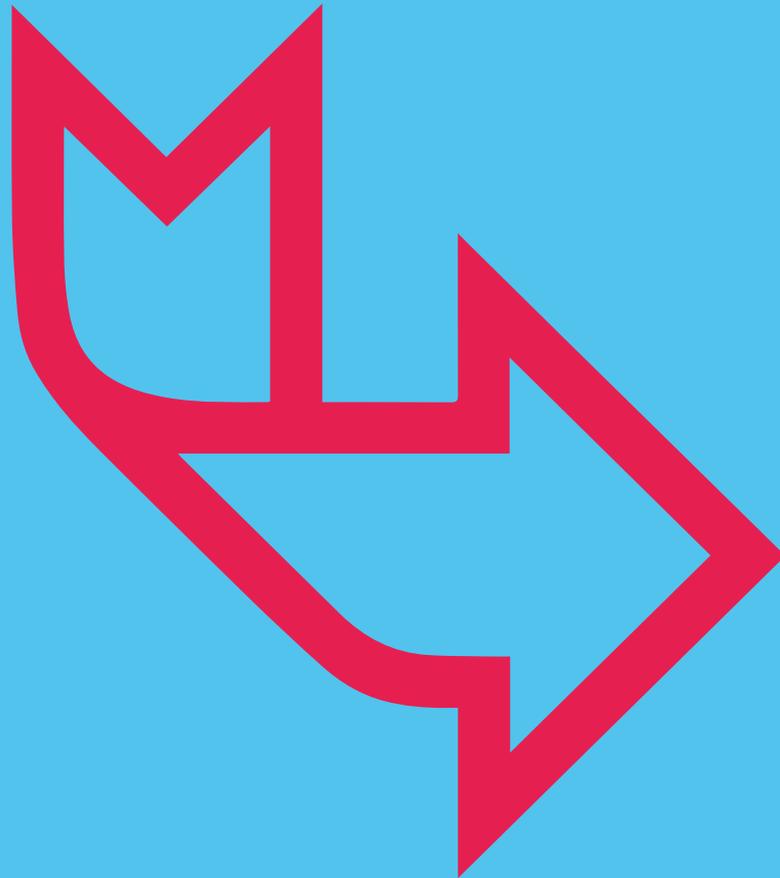


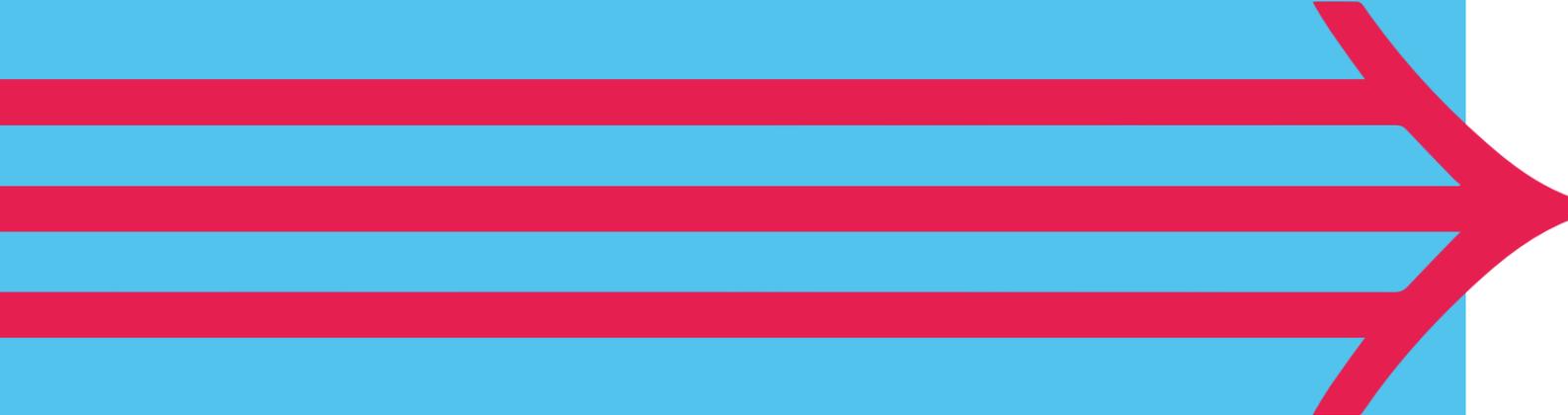


**Infrastructure Technician  
Apprenticeship  
Level 3**

**A Digital by Design  
programme**



# **PROGRAMME GUIDE**



# CONTENTS

## What does “Digital by Design” mean?

It means a greater focus on online learning together with using face-to-face 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.

It means that there is a clear focus from the beginning of the programme 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

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# ROLE PROFILE

## Infrastructure Technician

Infrastructure technicians provide support to internal and external customers, helping them be productive when using technology to do their own jobs.

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They use tools to problem-solve and troubleshoot non-routine problems, set people up on systems, provide support when they need it and fix issues to keep their organisations' productivity going strong.

### Infrastructure technicians need:

- Strong technical skills
- A methodical, step-by-step approach to resolving issues
- Business skills like effective communication, teamwork and task/time management
- The adaptability to do a range of work—sometimes complex and non-routine—in different environments
- The ability to work under direction, use discretion and determine when to escalate issues

## JOB ROLE SUITABILITY

To help you determine whether a candidate (a new hire or existing employee) will be working in a suitable job role to successfully complete this programme, you must be able to answer “yes” to the following questions.

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Will they be doing a full time technical role (which means their daily tasks revolve around IT support activities rather than being mainly administrative)?

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Will they be solving various IT problems including providing remote support?

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Will they be working with different types of devices (desktops, laptops, mobiles etc.) – including setting up, connecting, managing and troubleshooting?

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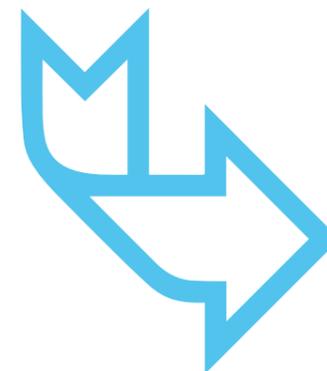
Will they be doing complex IT tasks – such as troubleshooting and fixing problems – not just simple tasks (such as password resets)?

---

Will they be working across a range of technologies such as client operating systems, network devices, and cloud infrastructure?

---

Will they be working with other people and therefore able to demonstrate a variety of communication skills in their role (face-to-face, remote etc.)?



Speak to your Account Manager for more advice on eligibility and job role/existing staff suitability for this programme.

# QUALIFICATIONS EARNED

By completing the Infrastructure Technician Level 3 apprenticeship, learners will earn the following qualifications:

**BCS Award in Coding and Logic**

**BCS Award in Business Processes**

**Microsoft Technology Associate: Networking Fundamentals**

**BCS Award in Mobile and Operating Systems**

**BCS Award in Cloud Services**

Learners can choose to get a single attempt at either Azure Fundamentals or AWS Cloud Practitioner Exam.

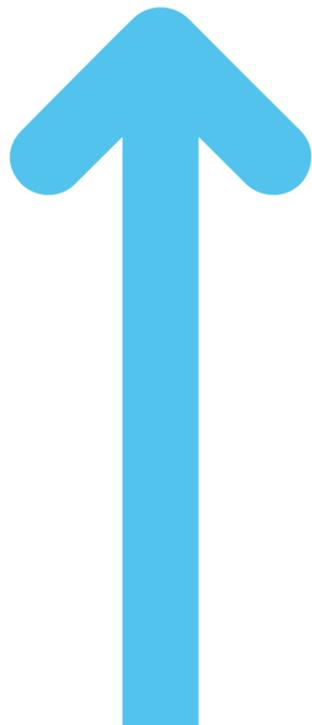
## **Evidencing 20% off-the-job learning**

This 20% off-the-job learning is an apprenticeship requirement. It must be completed in working hours.

Our programme facilitates off-the-job learning.

We blend online learning, on-the-job learning, and classroom training in a seamless way.

We are the apprenticeship experts and can advise you on this topic.



# DISCOVER, PRACTICE AND APPLY

Discover, practice and apply are the three pillars of apprenticeship learning.

No matter what part of the apprenticeship a learner is on, discover, practice and apply are combined into each activity.

## **Discover**

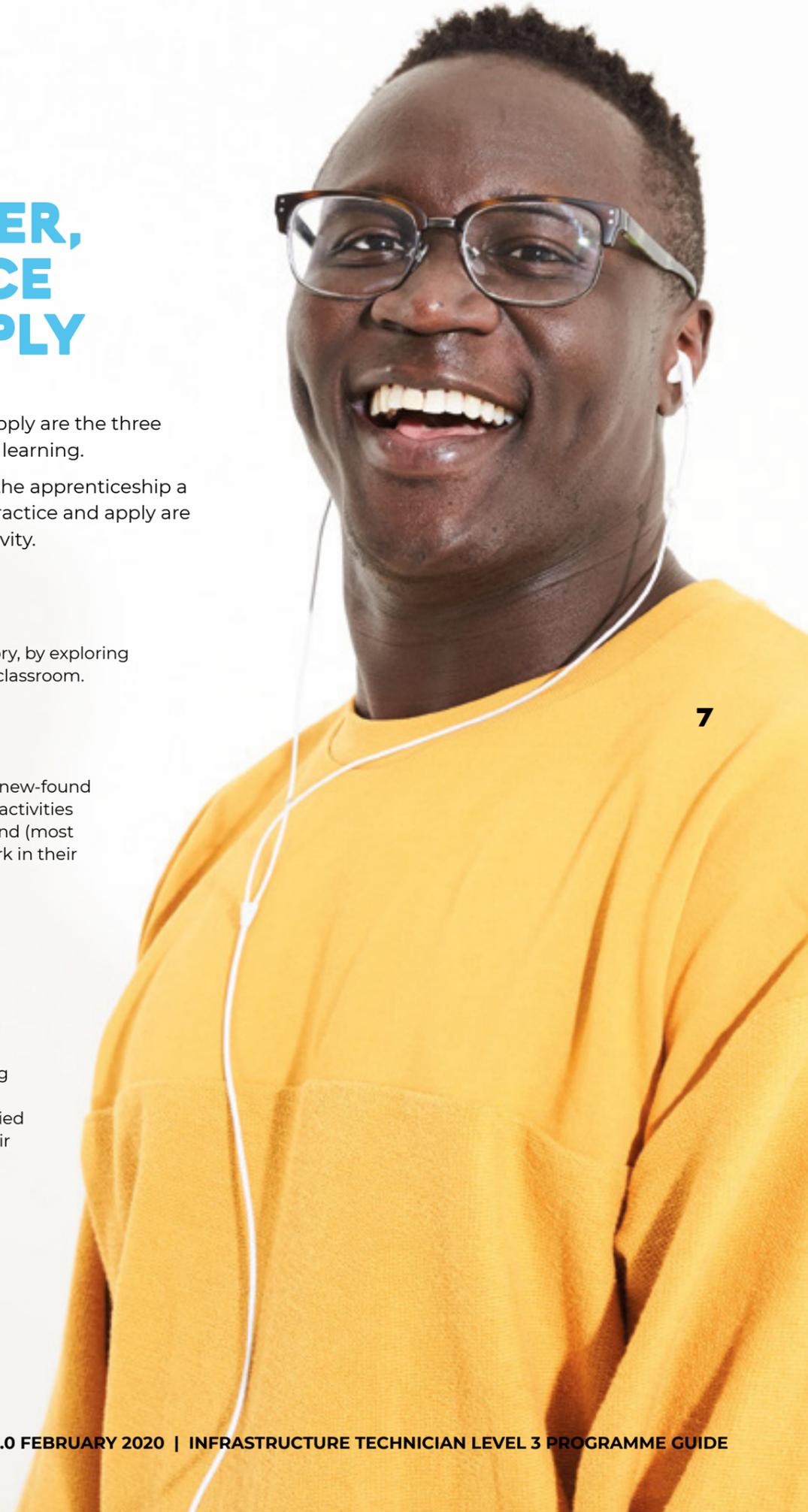
Learners will learn the theory, by exploring subjects online and in the classroom.

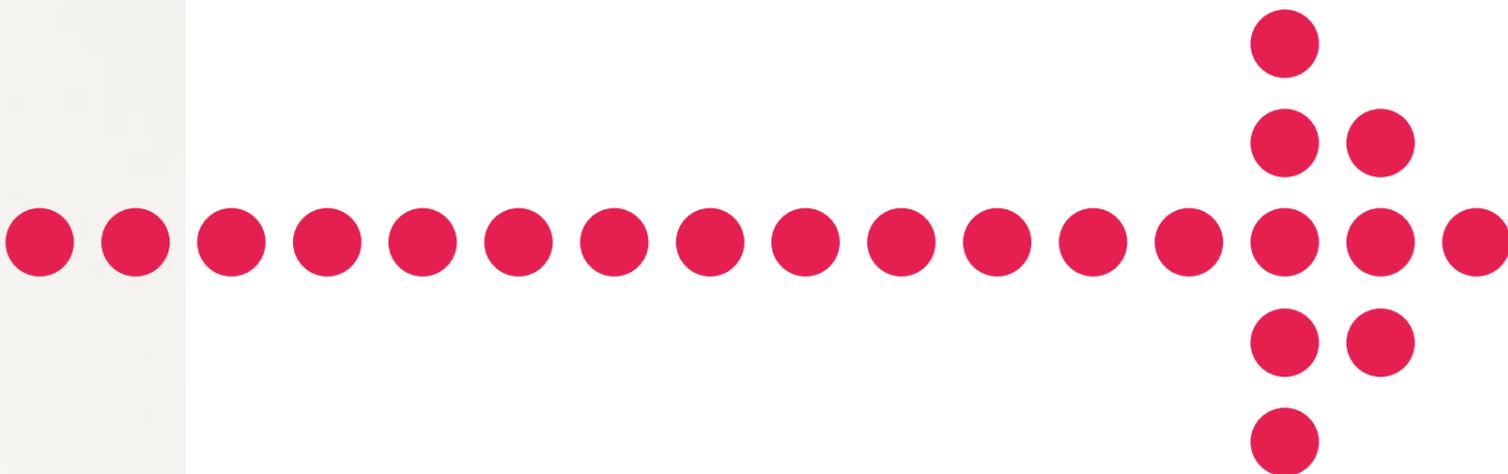
## **Practice**

Learners will practise their new-found knowledge by completing activities - online, in the classroom 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.





# INTRODUCING... DIGITAL LEARNING CONSULTANTS

In the new world of apprenticeships, learners will be taken through their programme by a team of people called Digital Learning Consultants, or DLCs for short (they're subject matter experts).

### On-programme support:

- **3, 2, 1...launch!** The structured programme launch is tailored to the learner and focussed on learning engagement and setting expectations.
- **More help for learners.** Any Digital Learning Consultant can support any learner - so no waiting around for a specific person to be available (this is called a many-to-many approach).
- **Digital first.** Using digital, you're connected to help. Face-to-face visits are only arranged when specific help is required.
- **Faster.** We provide feedback on submissions within 24 hours.
- **Group sessions.** There are still regular, planned group guidance sessions to get the benefit of working with others.
- **EPA Readiness.** We check-in regularly, with planned EPA readiness checks that demonstrate distance travelled through the apprenticeship and highlight areas for development.
- **Data driven.** We proactively monitor data to identify learners at risk of falling behind. We take action to re-engage them with their apprenticeship to make sure they stay on track to achieve and remain on the programme.
- **Right learner, right role, right time.** We have developed a 5-week initial support plan to make sure the right learner is in the right role at the right time. This is essential to success.

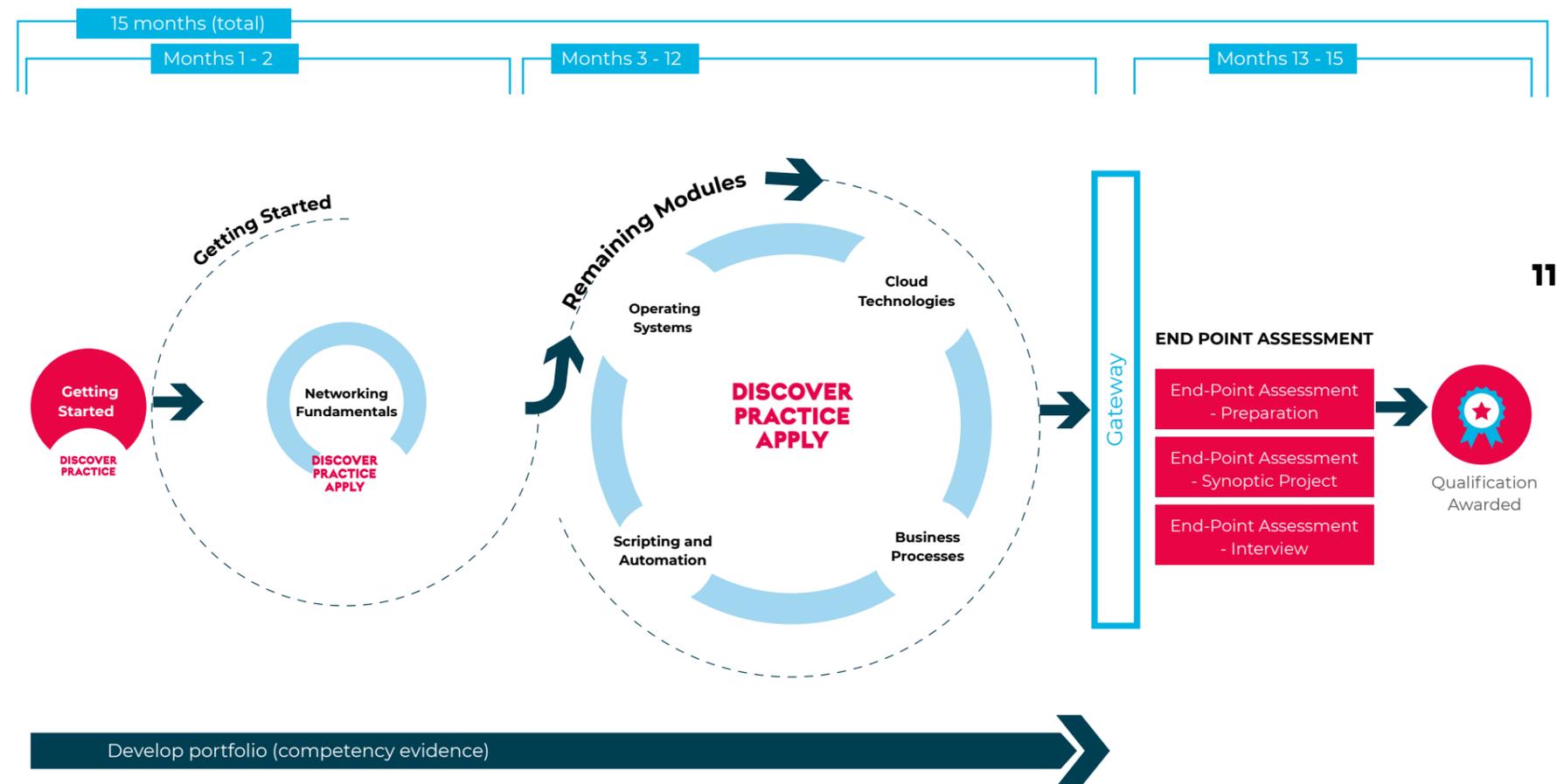


# THE APPRENTICESHIP PROGRAMME

## Infrastructure Technician Level 3

This apprenticeship is typically 15 months long. The minimum duration of the practical period is 12 months, and then 3 months for EPA. Some learners may finish their programme in less time if their EPA is completed quickly.

This flowchart shows how learners progress throughout the apprenticeship and how the whole programme uses our blended approach to learning.



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### GETTING STARTED

After enrolling in the programme, learners will attend an online session. This will give them an overview of the programme and a hands-on introduction to networking. Learners will then start their first module: Networking Fundamentals.

### REMAINING MODULES MONTHS 3-12

Learners work through 4 modules, which include online learning material on a virtual learning environment, classroom sessions, and applying the learning hands-on in their job.

Learners will also build their portfolio and have regular check-ins with a Digital Learning Consultant (DLC) and their line manager.

### GATEWAY 3 MONTHS BEFORE LEARNER'S TARGET END DATE

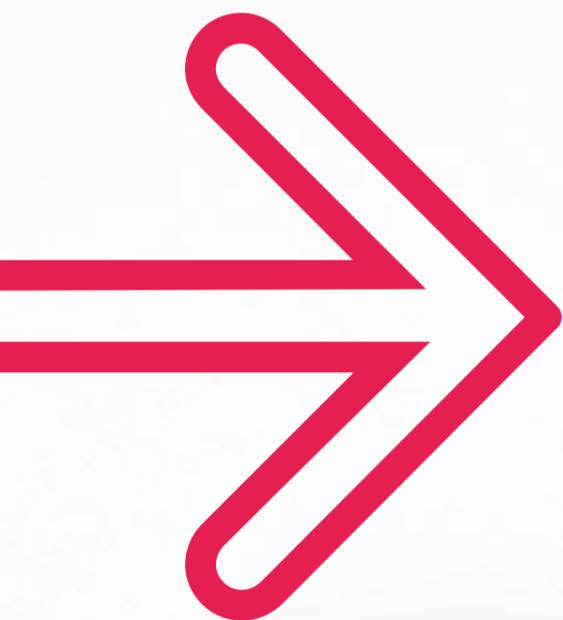
Learners will go through the 'gateway' stage when they have:

- > Completed all knowledge modules
- > Passed all mandatory exams
- > Passed all Functional skills exams, or when exemptions have been confirmed
- > Completed both their summative portfolio, and final employer reference

### EPA MONTHS 12-15

Learners complete their End-Point Assessment (including the synoptic project and interview).

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## GETTING STARTED

The modules in our Infrastructure Technician 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 each module, learners will 'discover', 'practice' and 'apply' what they've learned. This helps them put their newly-found knowledge into action back at work.

There are 5 modules to complete with the following learning outcomes.

### Module 1: Networking Fundamentals

**Module duration:** 6 weeks | **Learner-led:** 5 days | **Classroom attendance:** 8 days

#### Programme Launch (Synchronous Session Online)

This synchronous online session will cover the following items:

- Programme outline and structure
- Assessments, certification and qualifications included
- Typical workflow expected
- Time commitment
- Calendar planning for the apprenticeship
- Setting of expectations
- Introduction to Bud, and other technology requirements

Learners will complete an introductory technical activity on networking. At the end of this session, learners will be ready to progress with their learning online.

#### Discover. Practice. Apply.

This module will introduce the learner to the world of Networking. This includes configuration of devices.

In summary, this module will help learners understand the following topics:

- The network environment
- The cloud environment
- How to use a network visualisation tool such as Cisco Packet Tracer to create a basic network

This module's hands-on activities will get the learner to:

- Use Windows and Linux networking tools to troubleshoot networks
- Use of Cisco Packet Tracer Simulator to set up wired and wireless networks based on requirements
- Network using virtual machines on Hyper-V
- Configure networking on cloud systems
- Troubleshoot and solve IT issues for customers in the Help Desk environment working with both hardware and software

At the end of the classroom block, the learner will attempt the MTA Networking Fundamentals exam.



## REMAINING MODULES

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

### Module 2:

#### Operating Systems

**Module duration:** 6 weeks | **Learner-led:** 5 days | **Classroom attendance:** 3 days

Discover. Practice. Apply.

This module will cover the support of various operating systems, including Linux and Windows. It will cover technologies used to support BYOD and mobile devices, including administration and security.

In summary, this module will help the learner understand the following topics:

- Windows and Linux operating systems, installation and configuration
- Remote Systems Management

This module's hands-on activities will get the learner to:

- Install and configure Windows and Linux clients
- Configure cloud services to manage a remote infrastructure
- Support a Remote Infrastructure and problem solving for a cloud environment

At the end of the classroom block, the learner will attempt the BCS Mobile and Operating Systems exam.

### Module 3:

#### Cloud Technologies

**Module duration:** 6 weeks | **Learner-led:** 5 days | **Classroom attendance:** 3 days

Discover. Practice. Apply.

This module will start with an online cloud primer that will introduce the learners to AWS, Azure and GCP. Learners will cover the foundational elements of the Azure cloud fundamentals, and AWS Cloud Practitioner.

The classroom component would build on their cloud skills with learners taking the BCS Cloud Services exam.

In summary, this module will help the learner understand the following topics:

- What cloud is
- The fundamentals of AWS
- The fundamentals of Azure

This module's hands-on activities will get the learner to:

- Use resources on AWS, Azure and GCP Platforms
- Support a remote infrastructure and problem solving for a cloud environment

At the end of the classroom block, the learner will attempt the BCS Cloud Services exam.

## Module 4:

### Business Processes

**Module duration:** 6 weeks | **Learner-led:** 5 days | **Classroom attendance:** 2 days

Discover. Practice. Apply.

This module will introduce IT legislations, business processes, and a brief overview of the ITIL framework.

In summary, this module will help the learner understand the following topics:

- IT legislation
- ITIL framework
- IT Security

This module's hands-on activities will get the learner to:

- Work with Help Desk processes, respect various requirements and legislation
- Work on Help Desk and Ticket Logging systems, based on their organisation policies and legislation

At the end of the classroom block, the learner will attempt the BCS Business Processes exam.

## Module 5:

### Scripting and Automation

**Module duration:** 6 weeks | **Learner-led:** 5 days | **Classroom attendance:** 5 days

Discover. Practice. Apply.

This module will introduce PowerShell, Linux and Windows command line for scripting and automating tasks.

In summary, this module will introduce the learner to scripting at the command line in both Windows and Linux systems.

This module's hands-on activities will get the learner to:

- Script in PowerShell
- Script in Linux
- Use Windows command line
- View basic HTML code for troubleshooting
- Demonstrate problem solving and user support through the use of the above tools in the workplace

At the end of the classroom block, the learner will attempt the BCS Coding and Logic exam.

## Gateway and End-Point Assessment

### Consolidation, Preparation and Assessment (Online)

**Duration:** 10 days + EPA

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 BCS. This exists to increase their chances of success.

At this pre-gateway stage learners will:

- Consolidate and submit their portfolio
- Consolidate and submit their final employer reference
- Conduct a mock EPA

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

- BCS exams
- MTA exam
- All the Functional Skills exams (except exempted 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 synoptic project
- Complete their interview





# LEARNING OUTCOMES

Over the course of the programme, apprentices will develop skills, knowledge and professional behaviours, as well as how to apply them in the workplace. These learning outcomes have been chosen by the 'trailblazer group' of employers who wrote the apprenticeship standard for Infrastructure Technician Level 3.

## Technical Competencies

### COMMUNICATION

Work independently and as part of a team, follow the organisation's standards, communicate in writing and verbally at all levels, use a range of tools and show strong interpersonal skills and cultural awareness when dealing with colleagues, customers and clients.

### IT SECURITY

Demonstrate the skills and behaviours needed to securely operate across all platforms and areas of responsibility, in line with organisational guidance and laws.

### REMOTE INFRASTRUCTURE

Effectively operate a range of mobile devices and securely add them to a network according to the organisation's policies and procedures.

### DATA

Effectively record, analyse and communicate data at the appropriate level to stakeholders using the organisation's standard tools and processes.

### PROBLEM-SOLVING

Apply structured techniques to solving problems, test methods, troubleshoot, analyse problems using appropriate digital tools and techniques and get logistical support as required.

### WORKFLOW MANAGEMENT

Work flexibly and under pressure on tasks according to the organisation's reporting and quality systems.

### HEALTH AND SAFETY

Interpret and follow IT legislation securely and professionally.

### PERFORMANCE

Optimise the performance of hardware, software and network systems and services in line with business requirements.

### WASTE DISPOSAL

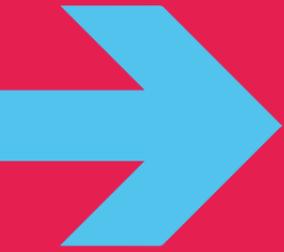
Explain the correct processes of the Waste Electrical and Electronic Equipment Directive (WEEE Directive).

## Technical knowledge and understanding

- Understand a range of cabling and connectivity, antennas, wireless systems and IT test equipment
- Understand and apply maintenance processes in working practices
- Understand and apply the basic elements and architecture of computer systems
- Understand where to apply relevant numerical skills, e.g. binary
- Understand the relevant networking skills necessary to maintain a secure network
- Understand the similarities, differences and benefits of the current operating systems available
- Understand how to operate remotely and how to deploy and securely integrate mobile devices
- Understand and have working knowledge of Cloud and Cloud Services
- Understand the importance of disaster recovery, how a disaster recovery plan works and the learners role within it
- Understand the similarities and differences between a range of coding and logic
- Understand and comply with business processes
- Have working knowledge of business IT skills relevant to the organisation

## Underpinning skills, attitudes and behaviours

- Logical and creative thinking skills
- Analytical and problem-solving skills
- Ability to work independently and take responsibility
- Initiative
- Adoption of a thorough and organised approach
- Initiation and maintenance of key stakeholder relationships
- Effective communication
- Sustain the productive, professional and secure working environment



# 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, skills coaches and employers to work together to ensure learners are supported to succeed in their Apprenticeship's third-party End-Point Assessment (EPA).

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

**Preparation for the End-Point Assessment starts from day one.**

## STAYING ON-TRACK THROUGHOUT THE PROGRAMME

The EPA preparation starts as soon as each new learner joins a programme, as all its components will support the learner to develop the necessary technical knowledge, skills, and behaviours to confidently meet, or exceed, all the requirements specified in the standard.

For this reason, it is very important to keep learners, skills coaches and employers informed about the expected programme progress plan. 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 20% 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

After the EPA interview, the assessor will make a holistic judgement of the apprentice's performance across all four assessment methods based on three criteria:

1

## WHAT

What has been learned

2

## HOW

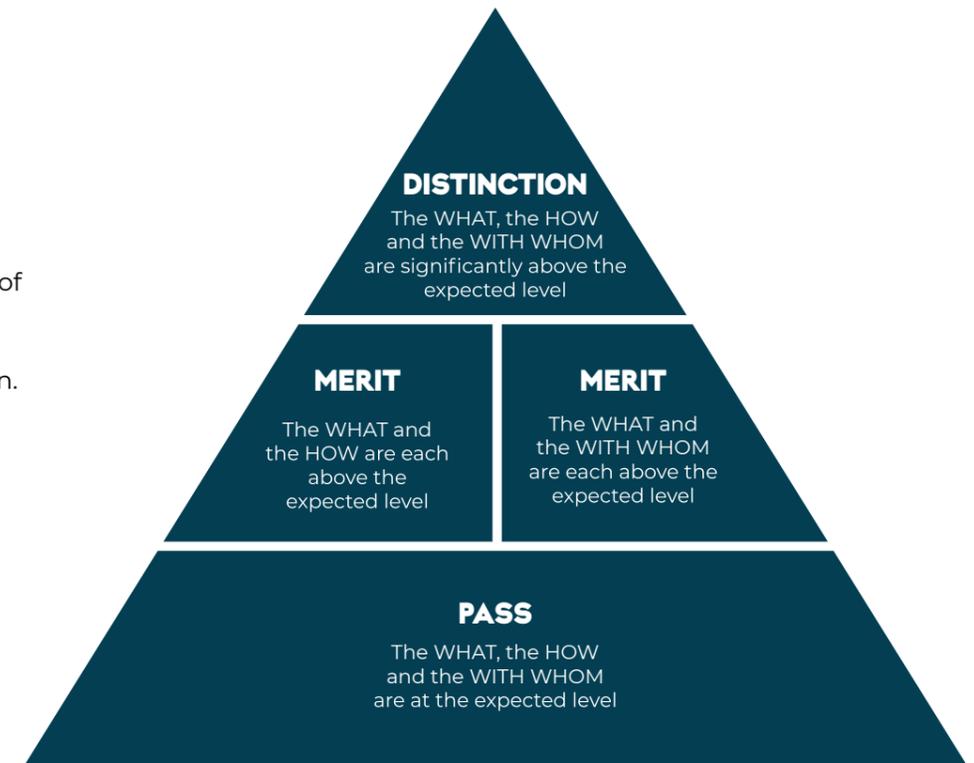
The way the work was done

3

## WITH WHOM

The personal and interpersonal qualities brought to working relationships

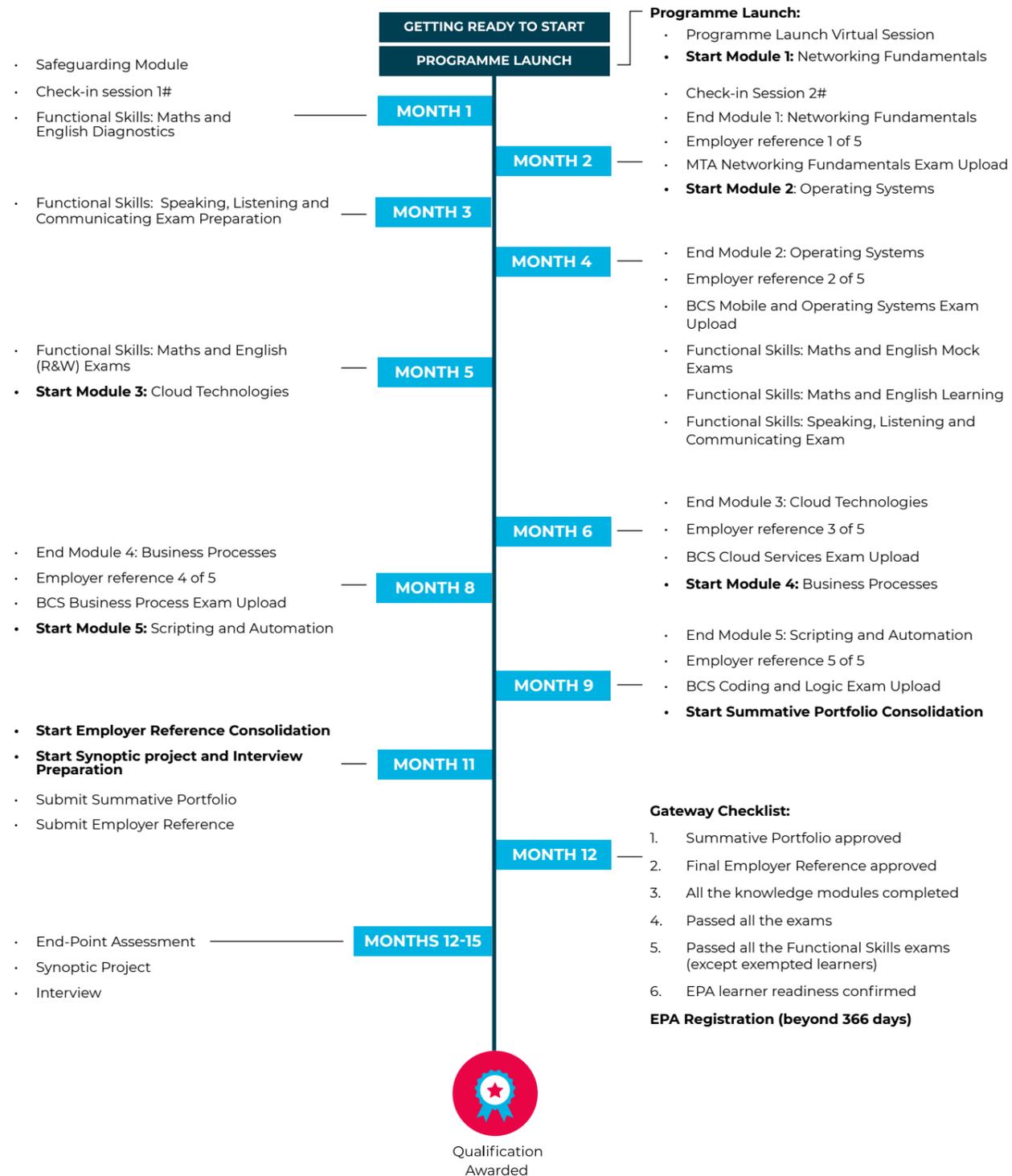
The learner will receive a single grade for their entire apprenticeship: **Pass, Merit or Distinction.** For an in-depth understanding of grading, please refer to the assessment plan.



# THE LEARNER'S JOURNEY

## Infrastructure Technician L3

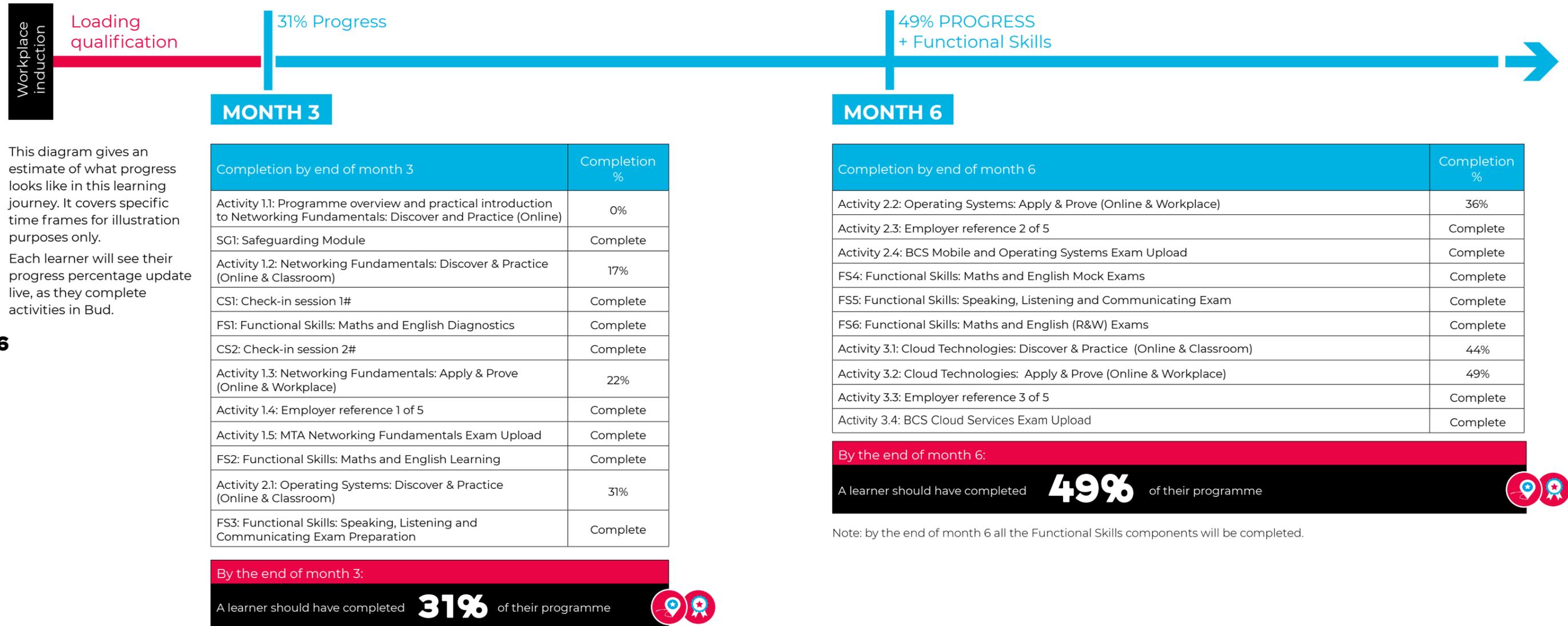
Programme timeline | Duration: 15 Months | Gateway: 12 Months



# THE LEARNER'S JOURNEY

## Infrastructure Technician L3

Progress review map | Duration: 15 Months | Gateway: 12 Months



This diagram gives an estimate of what progress looks like in this learning journey. It covers specific time frames for illustration purposes only.

Each learner will see their progress percentage update live, as they complete activities in Bud.

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Note: by the end of month 6 all the Functional Skills components will be completed.



### Is the learner on track?

QA will be monitoring each learner's progress on an on-going basis.

At any point, they will be in one of three categories:

- **Green:** on track, or 0-5% behind target progress.
- **Amber:** 6-14% behind target progress.
- **Red:** 15% or more behind target progress.

Whenever deemed required, QA will put in place proactive measures to get learners back on track.



### How is the learner performing?

QA will continuously track the quality of each learner's work, and discuss performance:

- At every **activity submission**. The work submitted will be reviewed and discussed with the learner. This will happen in the messaging system, inside each activity.
- At **EPA readiness checks**. The first of these checks will happen on the week following programme launch. After that, at every 16 weeks. This will take place in the form of a scheduled call.

Either way, our feedback will let the learner know how they are performing. We may ask learners to refine their work, or complete extra tasks, before approving it. These interactions will use Bud virtual learning environment, where they will be recorded.

78% PROGRESS

100% PROGRESS

**EPA (END-POINT ASSESSMENT)**

Qualification Awarded



**MONTH 9**

Completion by end of month 9	Completion %
Activity 4.1: Business Processes: Discover and Practice (Online & Classroom)	56%
Activity 4.2: Business Processes: Apply (Online & Workplace)	61%
Activity 4.3: Employer reference 4 of 5	Complete
Activity 4.4: BCS Business Process Exam Upload	Complete
Activity 5.1: Scripting and Automation: Discover and Practice (Online & Classroom)	71%
Activity 5.2: Scripting and Automation: Apply (Online & Workplace)	78%
Activity 5.3: Employer reference 5 of 5	Complete
Activity 5.4: BCS Coding and Logic Exam Upload	Complete

By the end of month 9:  
A learner should have completed of their programme **78%**

**MONTH 12**

Completion by end of month 12	Completion %
SPC: EPA Overview & Summative Portfolio Consolidation	95%
ERC: Employer Reference Consolidation	100%
EPSP: Synoptic project and interview preparation	Complete

By the end of month 12:  
A learner should have completed of their programme **100%**

**MONTH 13**

Completion by the end of month 13	Completion %
Synoptic project submitted to BCS	Completed
Initiate interview preparation	Completed

QA Apprenticeships does not formally grade the apprenticeship, this is the responsibility of the End-Point Assessment organisation.

**MONTH 15**

Completion by the end of month 15	Completion %
Interview	Completed
Result from BCS	Completed





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