Transitioning to the new Heavy Vehicle Service and Maintenance Technician apprenticeship standard

Presenters:

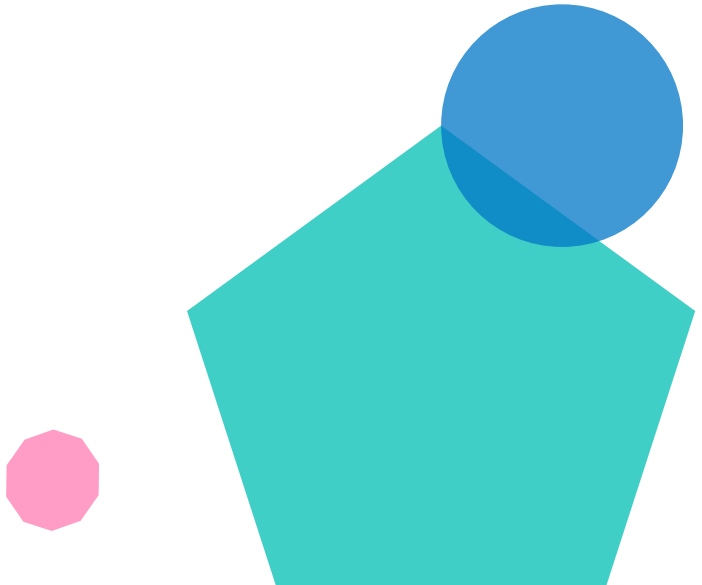
Pat Santos, Industry Manager – City & Guilds

Paul Tunnicliffe, Automotive Technical Advisor – City & Guilds

28 November 2017

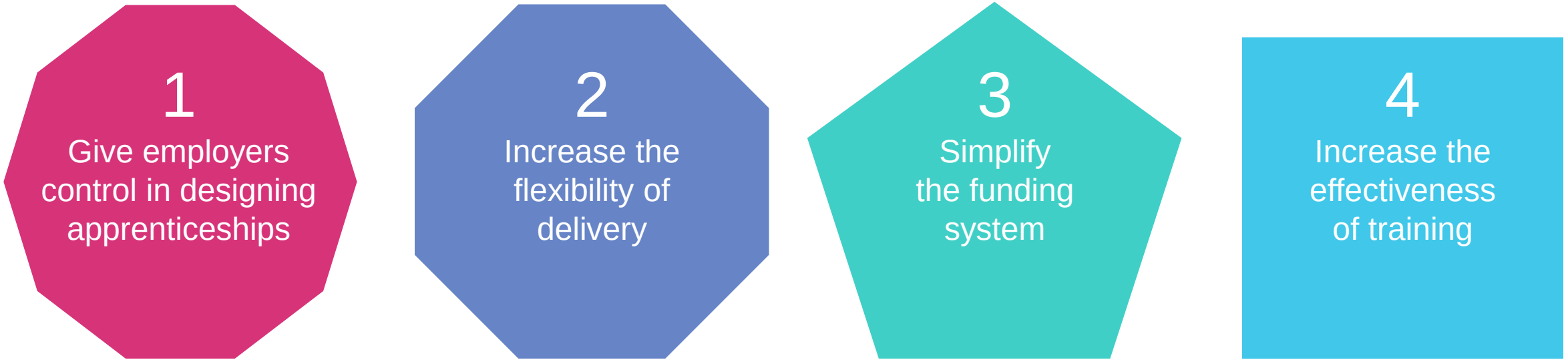
Agenda

- Overview of the apprenticeship reforms
- Heavy Vehicle Service and Maintenance Technician standard
- Heavy Vehicle Service and Maintenance Technician end-point assessment (EPA)
- How we can support you to prepare for delivery and EPA
- How it works
- Next steps
- Q & A



Overview of the apprenticeship reforms

Apprenticeships are changing.
You are part of that change.



If you'd like a summary of the main changes between the new apprenticeship standards and SASE frameworks, our **25-minute recorded session** is a really useful watch.

SASE framework to apprenticeship standard – the changes

Off-the-job training, the vital 20%

Off-the-job training must be directly relevant to the apprenticeship standard and must take place within the apprentice's normal working hours. This publication provides policy context and some best-practice examples around off-the-job training. Off-the-job training can include:


Teaching of theory - lectures


Simulated exercises and role play


Attendance at competitions


Manufacturer training e.g. new equipment or technologies


Learning support provided by employer or the provider


Some online learning e.g. webinars or blended learning

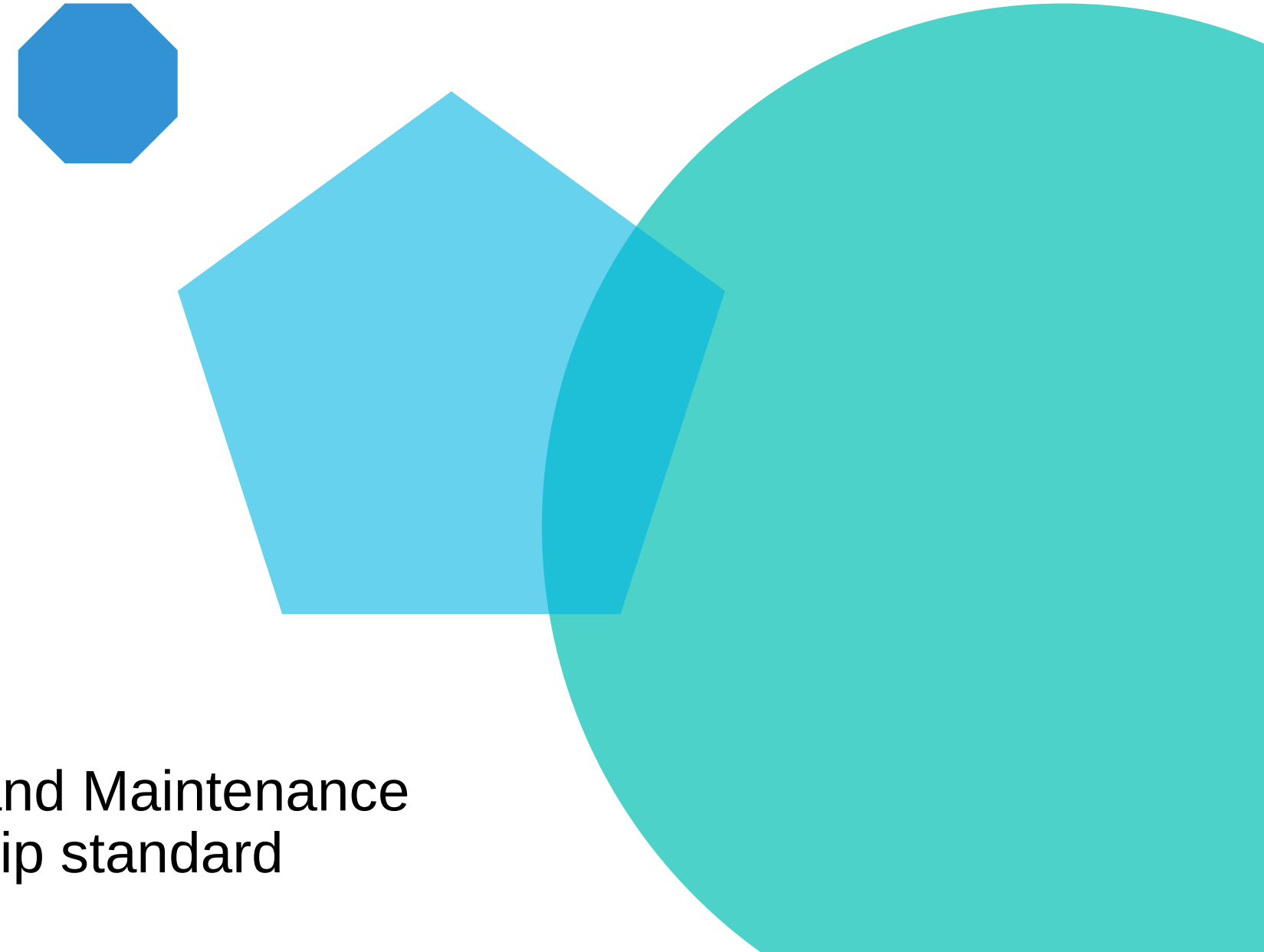

Shadowing or being mentored


Practical training


Visiting the employer's other departments


Time spent by the apprentice writing assessments/assignments


Industry visits or visiting other companies or suppliers



Heavy Vehicle Service and Maintenance Technician apprenticeship standard

Employer Group:

The Heavy Vehicle Service and Maintenance Technician standard was developed by:

- Arriva Plc
- ISUZU Truck (UK) Limited
- Iveco Ltd
- London General Services Ltd
- MAN Truck and Bus Ltd
- Mercedes-Benz UK Ltd
- Nottingham City Transport Ltd
- Renault Trucks UK Limited
- SCANIA (Great Britain) Ltd
- Stagecoach Group PLC
- Volvo Group UK Limited
- People 1st

Funding information:
Funding band: 12
Funding band maximum: £18,000

Key documents

The Heavy Vehicle Service and Maintenance Technician apprenticeship standard

- Short, easy-to-understand document that describes the competencies required to undertake the occupation
- Designed by the employer group
- Approved by BEIS

The assessment plan

- Describes the apprentice journey and EPA for that particular standard
- What will be assessed; how it will be assessed; who it will be assessed by

The employer occupational brief

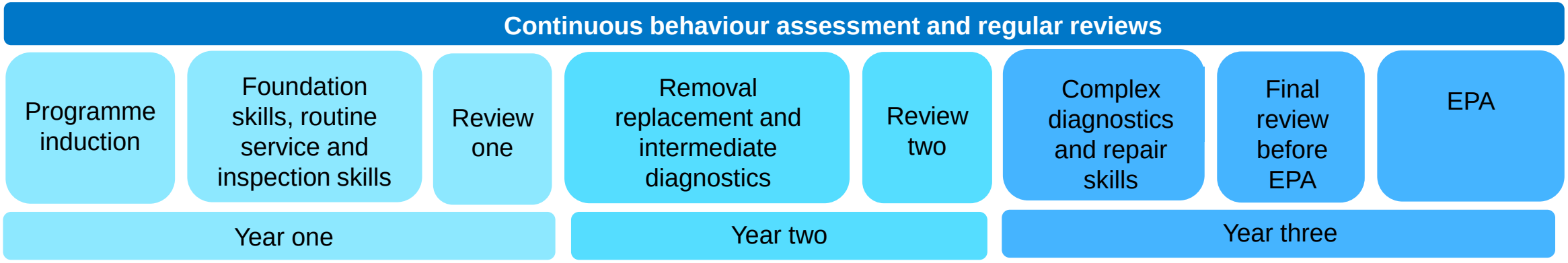
- Covers the topics the apprentices is expected to cover in each year.
  You can find the document here.

The end-point assessment pack

- Describes the EPA process in detail
- Contains the requirements needed to prepare for EPA

Heavy Vehicle Service and Maintenance Technician

Minimum duration 12 months, usually the apprenticeship lasts for three years



On-programme

- The apprentice completes practical tasks alongside an on-going review of their workplace soft skills and behaviors by their trainer and workplace mentor.
- They'll also complete 20% off-the-job training, e.g. day release to college and other activities
- Annual evaluations/reviews: apprentices must meet the targets set leading to each review. The reviews will document progress against a learning plan and include behaviours. **They will be referenced in the EPA professional discussion (reflect on past).**

Final review

- The employer and the training provider confirm that the apprentice is ready for EPA
- The apprentice must have achieved the maths and English qualifications at Level 2/GCSE.

EPA

- For HGV, the apprentice must complete two theory exams, five observed tasks and a professional discussion.
  For each task, the apprentice must complete **a detailed write up (job card).**
- The write ups are graded pass, merit or distinction and awarded points which go towards the final grade of the EPA.

Heavy Vehicle Service and Maintenance Technician EPA (9302)

Entry requirements for EPA

- The apprentice must achieve a Level 2 English and maths to pass gateway
- Gateway can be triggered after 12 months of starting the apprenticeship
- Complete gateway declaration form
- Book EPA 90 days in advance of EPA taking place.

Heavy Vehicle Service and Maintenance Technician EPA

Practical:
Five observed tasks:

1. 30-minute walk and talk (all vehicle systems) including General Vehicle Safety, Basic Mechanical, Basic Electrical, Basic Chassis (no faults).

2. Four tasks: one from Chassis, Driveline, Engine and Electrical. Three must be 20-30 minutes and the fourth 60 minutes to include a multi-stage diagnostic. A job card is written after each observation which will be accompanied by two or three key questions from the independent end-point assessor.

Approximate four hours of practical, one-hour of professional discussion and time to review the log book. Practical part of EPA will take place over one day. Resits after a period of training but before six months, or whole EPA will need resitting.

HGV engineering requirements exam - (MCQ) multiple-choice questions

Mandatory criteria **Questions based around each of the following, from system to diagnostic approach should be included in every exam:**	• The importance of working within the health and safety and industry regulations and tolerances when diagnosing and maintaining: • Braking systems • Suspension • Fuel (including hybrid and gas) • Electrical systems • Common rail system • Steering • Safety of people in the workplace •
Each exam should include a representative sample of questions based around each of the following:	• Principles of chassis design, diagnosis and repair of faults • Principles of heavy vehicle design and configuration • Principles of exhaust system SCR/EGR and turbocharger design, diagnosis and repair of faults • The process and procedure for heavy vehicle inspection • Regulatory requirements for the inspection of heavy vehicles • Principles of design, diagnosis and repair of: • Transmission / drive line • Clutch • Final drive hub • Automatic transmissions • Wheels • Tyres • Steering and steering angles • Power assistance • Suspension systems (including air) • Electronic suspension control • Braking systems (including ABS / EBS) • Engine configurations and components • Engine testing • FI • Basic and advanced electrics, including CANBUS • Brake efficiencies • Principles and practice of diagnostic testing • Ohms Law related resistance, volts, amps • Simple circuits • Types of brake systems • Wheel security • Suspension types • Fuel system • Cooling system • Engine 4 stroke cycle

Heavy Vehicle Service and Maintenance Technician wider requirements exam MCQ

Section of MCQ exam	Question topics (please cross reference to NOS content in competence gateways)
Mandatory criteria **Questions based around each of the following should be included in every exam:**	• Hazard analysis and risk management • COSHH • Health and Safety at work • Fire extinguishers • Reasons for service and inspection • Warning signs • Tool identification • Use of a multimeter • Legal requirements relating to inspection and servicing • Effective working relationships with customers and team members
Each exam should include a representative sample of questions based around each of the following:	• Principles of health and safety in the workshop • Principles of customer service • Principles of business structure in the heavy vehicle industry • Principles of effective communication • Principles of using diagnostic tools • Principles of using measuring equipment • Safe lifting and manual handling techniques • Principles of inspection to regulated standard • Principles of effective servicing

Walk and talk

Observation A

Observation A – Every apprentice must:	
Task description	An observation of the apprentice conducting an inspection on a vehicle, including identifying loose, worn, damaged or dangerous components in each of the following areas: i. General vehicle safety ii. Basic mechanical systems iii. Basic electrical systems iv. Basic chassis systems, set up underneath a vehicle At the end of the inspection the apprentice must correctly declare whether the vehicle is roadworthy, highlighting any findings which would render the vehicle unroadworthy or 'developing issues' which may lead to further problems in the future. The inspection will last approximately 30 minutes.
In order to pass an apprentice will:	• The apprentice will complete the inspection within 45 minutes • Every element required on the inspection will be completed • Any current or potential issues are identified correctly • Complete all required documentation correctly and legibly
In order to achieve a distinction apprentices must, in addition to achieving all pass criteria:	• Inspect the vehicle logically, completing tasks in 'groups' to maximise time

Chassis task examples

Observations B

Observation B(i) – Chassis Apprentices must complete ONE of the following scenarios from section B(i)	
20-30 minute Scenarios*	• ABS warning light activates on dashboard indicating fault on ABS system • Suspension warning light activates indicating fault on suspension system (could be mechanical or electrical) • No/reduced effort to front brakes diagnose problem • A brake test has found front and rear brakes not operating efficiently with incorrect predominance set between front and rear
50-60 minute Scenarios*	• ABS warning light activates on dashboard indicating fault on ABS system • Suspension warning light activates indicating fault on suspension system (could be mechanical or electrical) • No/reduced effort to front brakes diagnose problem • A brake test has found front and rear brakes not operating efficiently with incorrect predominance set between front and rear • Vehicle is pulling to the left. Diagnostics involving tracking • Air dryer fault. Not building up enough pressure
	* Some symptoms are listed in both the short and long scenario sections as there may be multiple causes to the problem, assessment organisations must ensure that the fault leading to the symptoms, and time required to diagnose, fits into the appropriate time category

Driveline/Transmission task examples

Observation B(ii) – Driveline / Transmission Apprentices must complete ONE of the following scenarios from section B(ii)	
20-30 minute Scenarios*	• Switch will not engage the range change • Check the differential gears for backlash • Diff lock stuck in • PTO doesn't engage • PTO engaging but not confirming on dash: diagnose confirmation switch and circuit • Vibration when driving, suspect prop • Gear changing feels loose
50-60 minute Scenarios*	• Switch will not engage the range change • PTO doesn't engage • Clutch pedal flat to floor (likely to indicate internal/external leak)

Electrical task examples

Observation B(iii) – Electrical Apprentices must complete ONE of the following scenarios from section B(iii)	
20-30 minute Scenarios*	• No Brake lights-no live feed • Engine slow starting on turning the key • Conduct circuit test • Electrical starting/charging/battery related fault and check
	• Night Heater Fault – heater clicking and smoking but blowing cold air into cab • Auxiliary/retro fit lights inoperative, e.g. beacons or trailer lights • All marker lights on N/s of trailer inoperative. Wired in series, could involve systematically checking feed at each point • A multiple fault scenario such as a power supply fault, common power feeds indicating etc. showing a faulty relay or buzz bar
50-60 minute Scenarios*	• No Brake lights-no live feed • Conduct circuit test • Electrical starting/charging/battery related fault and check • Auxiliary/retro fit lights inoperative, e.g. beacons or trailer lights

Engine task examples

*Can be set up on a rig

Observation B(iv) – Engine Apprentices must complete ONE of the following scenarios from section B(iv)	
20-30 minute Scenarios*	• Excessive noise coming from an engine # • Engine reported as poor running possible injector fault • New injector requires fitting to an engine # • SCR warning light appears on dashboard carry out SCR health check • Engine management light is on. Customer reports new injector has been fitted by other dealer • Loosing water over time • EMS light on. Fault with Nox sensor • Black smoke and lack of power
50-60 minute Scenarios*	• Engine reported as poor running possible injector fault • Engine management light is on. Customer reports new injector has been fitted by other dealer (if no coded to vehicle system) • Compression test has shown fault on cylinder 1. Strip head and piston/liner to identify fault (sump already removed) # • Black smoke and lack of power • Oil pressure fault (check: viscosity / contamination of oil, oil pressure at tappets, manually check pressure with gauge to identify possible electrical fault, relief valves etc. Check to rely on manual mechanical work rather than diagnostic equipment

Heavy Vehicle Service and Maintenance Technician EPA

Professional discussion

- Log of progression (log book) including annual review records between employer and apprentice, against progress/annual review/targets. The training provider may participate in this discussion.

- Duration one-hour. 10 minutes on behaviours, 50 minutes on a range of topics from the list submitted by the employer group*. You can use supporting evidence such as log book, job cards etc.

*Topics are listed in the EPA document

Heavy Vehicle Service and Maintenance Technician EPA grading

Assessment activity	Potential grade	Score
MCQ Engineering	Pass / Fail	Pass = 1
MCQ wider standard	Pass / Fail	Pass = 1
Observation A	Pass / Fail	Pass = 1
Observation B (i)	Pass / Fail	Pass = 1
Observation B (i)	Pass / Fail	Pass = 1
Observation B (i)	Pass / Fail	Pass = 1
Observation B (i)	Pass / Fail	Pass = 1
Job card write ups of observations	Pass / Merit / Distinction / Fail	Pass = 1 Merit = 2 Distinction = 3
Professional discussion	Pass / Fail	Pass = 1

- 0-8 Fail
- 9 Pass overall
- 10 Merit overall
- 11 Distinction overall

How we can support you to prepare for delivery and EPA

Our offer – apprenticeship training manual (on-programme)

- Includes over 50 tasks that support the apprentice's progression to the gateway during on-programme
- Provides an overview of the apprentice journey and full mapping to the standards.
- Available in print and electronic versions
- Contains a list of key terms and their definitions
- Details how each task relates to the standards
- Preparatory activities to check learner understanding
- Practical tasks to allow the learner to apply their knowledge to their own role and organisation
- Reflective practice for learners to consider what they've learnt, what they need to improve and how to do it

Apprentice report on Task 1: Vehicle walkaround and familiarisation

Provide an overview of the vehicle walkaround including specific information regarding the mandatory observations.

Apprentice report

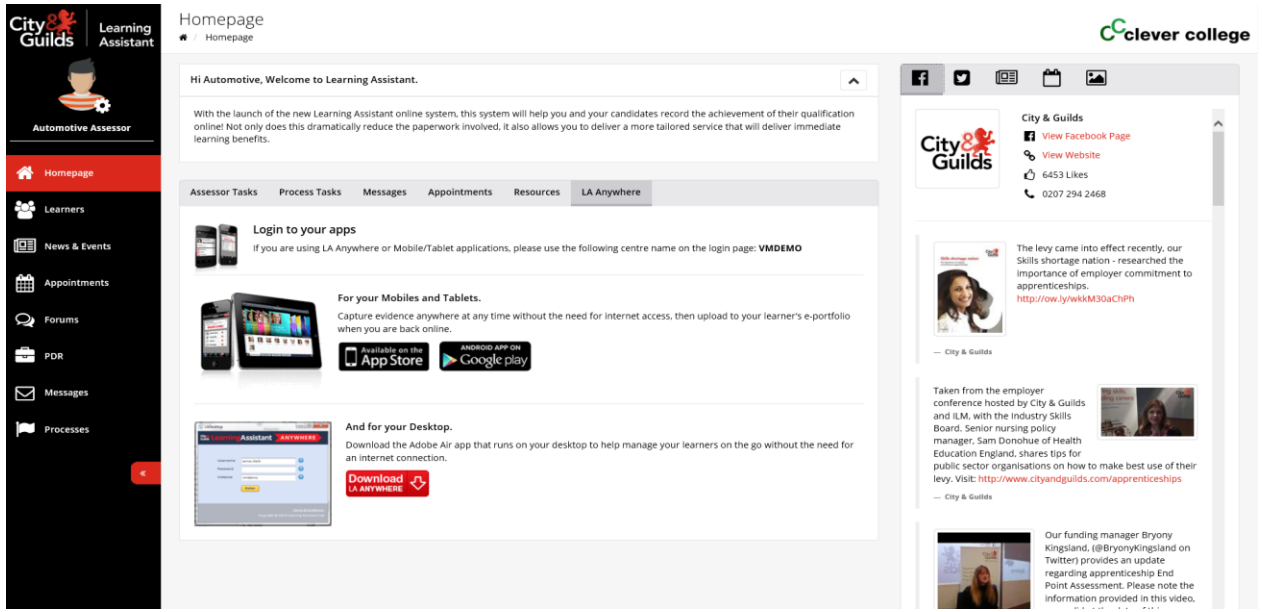
ON-PROGRAMME: TRAINING TOWARDS GATEWAY 1

TOOLS AND EQUIPMENT

The following is an example of the necessary resources, tools and equipment needed to support the practical skills for Gateway 1.

- Garage tool box/kits: spanner, sockets, screwdriver, hammer
- Torque wrenches – selection of sizes
- Coolant pressure test equipment
- Allen keys
- Spline and Torx sockets
- Pullers

Our offer – Learning Assistant, competence management system



Tailor it according to your own organisation's needs. Watch how it works here.

Maths and English – what can we offer?

Qualifications

- Full suite of Functional Skills qualifications (3748).
- ‘Bite-sized’ maths and English qualifications (3847 and 3844).

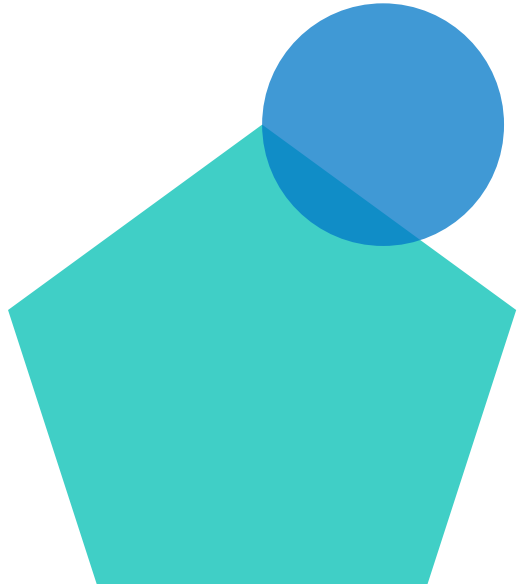
  - can be used to support progression towards Functional Skills or GCSE.

Learning resources

- e-Functional Skills.
- Maths and English e-Toolkit.
- Functional Skills SmartScreen resources.

Workforce support

- Qualifications for literacy and numeracy practitioners.
- Specialist support, especially with maths and English integration.



How it works

How you can use City & Guilds apprenticeships

Each apprenticeship standard is unique and we offer the following options, depending on the standard

	Option	Pricing
1	**On-programme only**	Will depend upon the requirements of the apprenticeship standard, e.g. qualifications.
2	**EPA only**	Price varies with the standard but generally each standard has: • EPA registration fee • EPA fee • EPA resit charge

NB: Functional Skills is charged separately and isn't covered by apprenticeship levy funding

EPA payment structure

Simple payment structure – two charging points:

- Registration: small amount (£25) when they register the apprentice on Walled Garden
- After EPA: the balance once our assessors have submitted their results

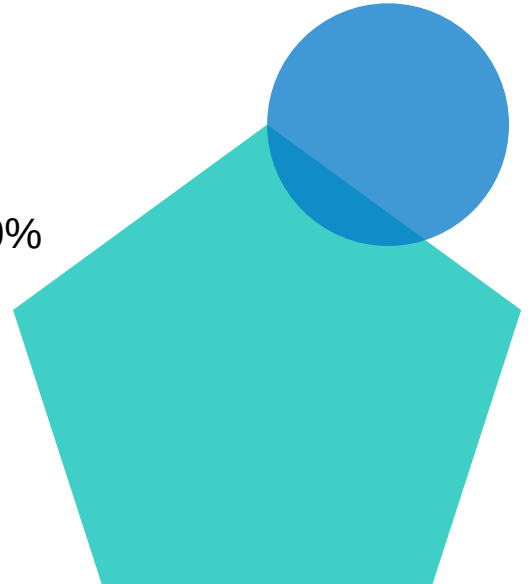
- You'll have received nearly all of your funding by this point so can help manage your cash flow
- No hidden charges – the price includes any third-party fees related to external quality assurance
- Registration releases materials to help apprentices prepare for their EPA

Approval process

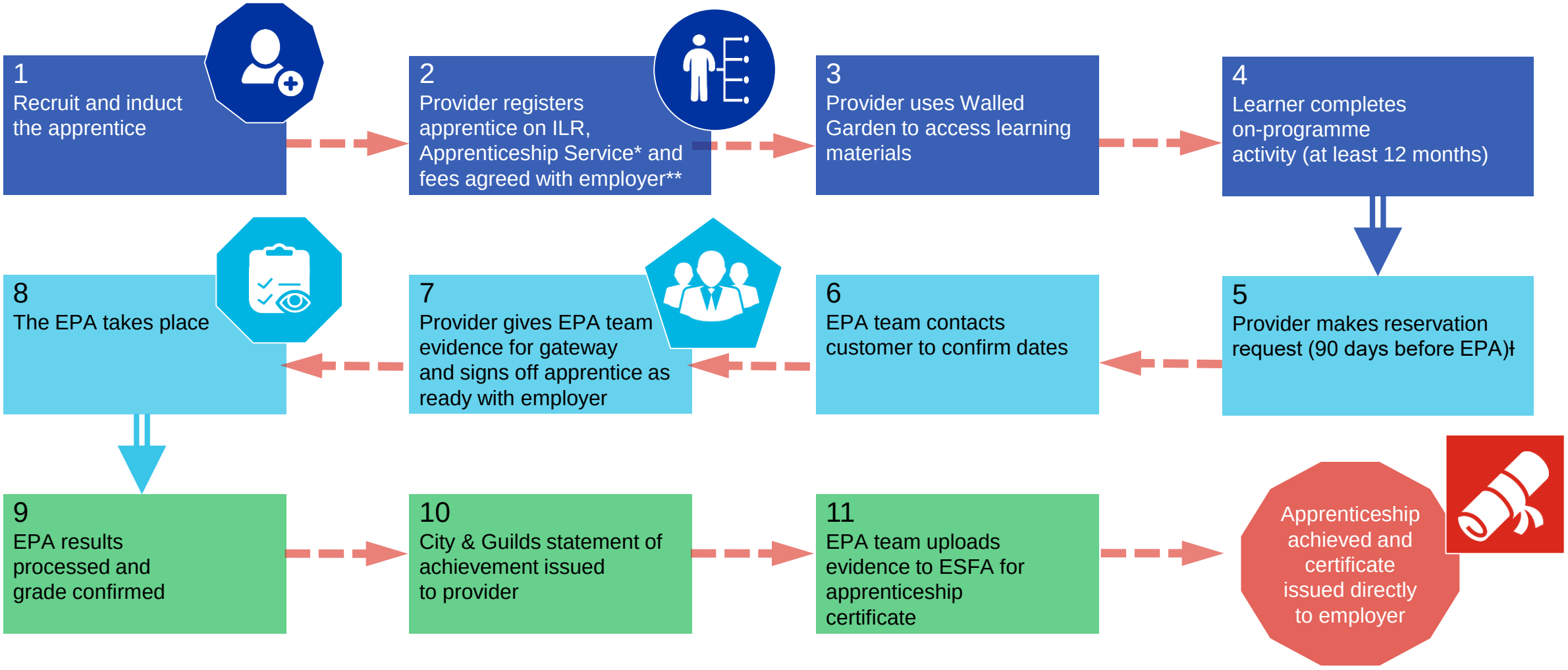
- There's no requirement to be approved for the on-programme. Approved centres can just buy the resources they require on Walled Garden.
- For learning assistant (including demos), contact your business manager or directsales@cityandguilds.com
- 9302 – 12/13
- If you're a new City & Guilds provider you'll need to gain EPA financial approval.
- If you're a current City & Guilds centre you'll also need to apply for EPA assessment approval for the occupation.

Quality assurance - what happens with IQA and EQA?

- Please note that **we do not quality assure the on-programme** of the apprenticeship as there is no qualification. **A centre now has the flexibility to set up their own processes with the employers**. It is a process between the training organisation and the employer.
- The on-programme is about the employer and the training organisation making sure that they **track the apprentice's progress and readiness for EPA.**
- Training organisations **should set up their own standardisation systems**, but we won't be sending any EQAs.
- Remember that although there are no qualifications, you will be responsible for tracking and recording progress for Ofsted and ESFA inspection purposes. Also must provide and evidence 20% off-the-job training.
- **The EPA provides standardisation across the industry** as all apprentices will have to successfully complete the EPA carried out by an independent end-point assessor.



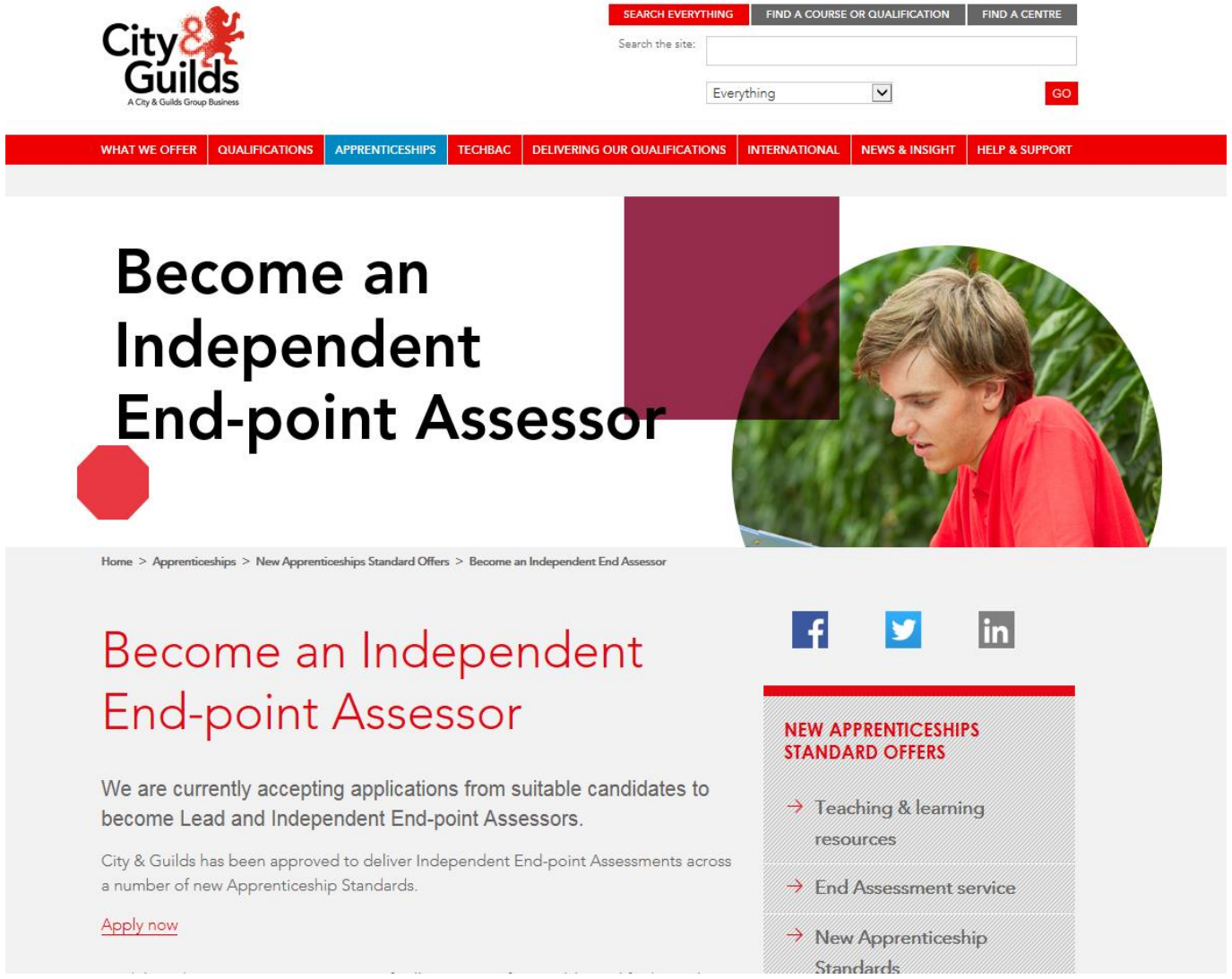
The EPA journey, step-by-step



* Can also be done by employer ** Where known; if not known the EPA cost and awarding organisation can be added later ł Ideally done alongside stage 4

How you and your team can stay up to date

- Register for email updates: cityandguilds.com/what-weoffer/centres/email-updates to hear about new standards, free webinars on the changes, regional networking sessions and other events.
- Get involved in the developments of new apprenticeship standards by emailing our product team through apprenticeships@cityandguilds.com or for specific motor vehicle queries automotive@cityandguilds.com
- Watch our webinar on digital learning materials https://attendee.gotowebinar.com/recording/1233325874002209283 or contact directsales@cityandguilds.com to request a demo
- For more information on EPA email the team on epa@cityandguilds.com



http://www.cityandguilds.com/apprenticeships/emerging-standards/independent-end-assessor

What do you need from City & Guilds?

Email our dedicated team:

apprenticeships@cityandguilds.com

Thank you