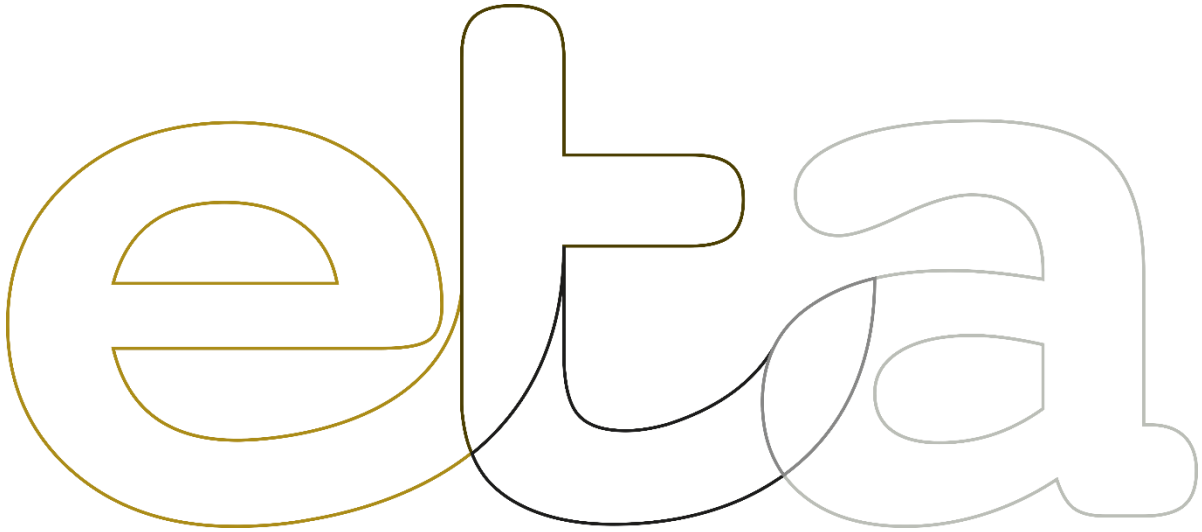


ETCAL Level 1 Award in Introduction to Bicycle Mechanics 610/5750/2

Assessment Guide

Assessment Principles

Introduction

ETA qualifications are developed in conjunction with the industries and employers they service. They are designed to add value and deliver multidimensional outputs that provide impact for both learners and employers.

It is therefore important that the assessment requirements of ETA qualifications are robust whilst not containing unnecessary and over-burdensome challenges that detract from the intended outcomes and impact.

Principles

There are four key principles to underpin assessment delivery:

1. Assessment should contribute to developing a learners' knowledge and/or skills and provide relevant and current development as the related industry requires.

2. Systems for capturing evidence of competence should be integrated and efficient. Assessment practices for both competence-based and knowledge-based aspects of qualifications should, where possible, be integrated with industry-driven standards and requirements.

3. Assessment methods must be appropriate for the level and nature of the qualification units to be assessed. Methods of assessing achievement against learning outcomes and assessment criteria must be accommodating and flexible, whilst remaining appropriate for both the level being assessed and industry expectations of learners at that level.

4. Evidence of knowledge and understanding must be recorded and be clearly attributable to the learner. This can be delivered using task-based activity with questions and answer sessions, supported by assessor observation. However, some elements of this knowledge and understanding can be implicit in performance of the assessment criteria, i.e. the learner could not have performed "A" without knowing and understanding "B & C".

The choice and application of assessment methods must be consistent with these principles and will generally include:

- Direct Observation
- Oral examination
- Professional/open discussion
- Work process records
- Video and speech records

Delivery Team Requirements

Tutors / Assessors

- Tutors / Assessors should have a detailed knowledge of, and be competent in, the occupational requirements of the units.
- This competence will have been acquired either in direct employment in the occupational role to which the unit relates, or in employment as a manager, supervisor or in-house trainer of employees carrying out the role.
- It is unlikely that occupational competence will have been achieved in less than twelve months of employment, but individuals with less experience could be considered as assessors if sufficiently occupationally competent.

Internal Quality Assurers (IQAs)

- IQAs must have a thorough understanding of the structure, content and occupational requirements of the units that they are internally quality assuring. This understanding will have been acquired while either working directly within or delivering within the relevant occupational area in either an operational or a support function.
- The level of understanding must be sufficient to allow the IQA to judge whether the assessor has fully assessed learners against all the principles within the unit.
- It is unlikely that a person could have gained this level of understanding in less than twelve months of being employed, but individuals with less experience could be considered as IQAs if they have the required level of experience, knowledge and understanding.

Instructions for Conducting Assessment

All approved centres must:

- Use the guidance within each unit on the assessment of a learner's knowledge and understanding, as the units within this qualification have been developed to support the capture of this evidence during demonstrations of practical performance.
- Secure approval of in-house assessment material by ETA's External Quality Assurance team prior to use.
- Consider the ETA Reasonable adjustments and considerations policy as reasonable adjustments may need to be considered at the time of assessment.

Qualification aim

This qualification focuses on developing the foundation knowledge, understanding and skills needed to undertake mechanic activities in a recreational environment as well as function as an assistant Bicycle Mechanic by being able to undertake basic maintenance required of modern bicycles.

Qualification introduction

This qualification is made up of 4 mandatory units that enable learners to develop sufficient ability to undertake recreational activity as well as allow them to assist a more experienced bicycle mechanic.

Assessment

In order to achieve this qualification a learner must complete all units as mandatory. The assessment criteria determine the standard required to achieve each unit and allow for a variety of assessment methods to be used as appropriate to the environment the qualification is delivered in. There is no examined assessment element in this qualification.

Progression

On completion of this qualification learners will be prepared to progress to level 2 qualifications in the related suite with potential to go on to level 3.

Level 1 Unit – Cleaning, Protecting and Servicing Bicycles

Unit aim

This individual unit will support those learners wishing to be employed in the Bicycle Industry. It provides a structured individualised route with knowledge, skills and behaviours leading to the achievement of Cleaning and Protecting and Servicing Bicycles unit.

Unit introduction

This unit of competence has been developed by employers and may be used as part of an overall development programme to meet the requirements of the Bicycle Industry. Its mandatory criteria form a foundation of the understanding, skills and behaviours in required to be employed in this industry. Learners who complete this unit will be equipped with the knowledge and skills to underpin career development within the industry as well as undertaking activity in a recreational environment.

Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit, through a variety of assessment methods appropriate to the assessment environment.

Unit Reference Number		F/651/6092
Qualification Framework		RQF
Title		Cleaning, Protecting and Servicing Bicycles
Unit Level		1
Guided Learning Hours		6
Total Qualification Time		7
Unit Credit Value		1
Unit Grading Structure		Pass / Fail

	Learning Outcome		**Assessment Criteria - The learner can**	**Expansion Criteria**
1	Know the products used to clean bicycles	**1.1**	Select products to effectively clean bicycles	To include: • Paintwork • Brake surfaces • Drive train
		1.2	Explain the reasons for the selection in 1.1	
2	Know what devices are used to clean bicycles	**2.1**	Select devices to effectively clean bicycles	To include: • Bucket • Brushes • Combs • Cloths
		2.2	Explain the reasons for the selection in 2.1	
		2.3	List the issues caused by using high-pressure water in cleaning bicycles	To include: • Injection of water and debris into bearings • Damage to seals

3	Know how to clean bicycles	**3.1**	Show the preparation of the area used to clean bicycles	To include: • Prevention of contamination of other parts of the repair operation
		3.2	Show the effective cleaning of bicycles	To include: • Road bike with rim brakes • MTB with disk brakes • Commuter bike
		3.3	Show the correct use of PPE when cleaning bicycles	
		3.4	Demonstrate the restoration of the area used to clean bicycles	To include: • Removal of debris • Re-store products and devices
4	Understand how to protect bicycles	**4.1**	Select products to prevent the clean bicycle from deteriorating	To include: • Chain lubricant • Corrosion inhibitor • Frame protector
		4.2	Explain the reasons for the selection in 4.1	
		4.3	Explain why care needs to be taken with the braking surfaces when protecting bicycles	To include: No contamination with protection products
5	Know how to carry out a basic bicycle service	**5.1**	Show how to carry out a basic service on a bicycle	To include: • Inspect the bicycle to ensure that it is safe to use • Inspect the bicycle to identify any repairs needed to keep it reliable • Adjust the brakes and gear change if required • Clean and lubricate the drive train • Clean the braking surfaces • Lubricate the pivots on the handlebar controls, derailleurs and brake arms

Level 1 Unit – Bicycle Work Area Skills

Unit aim

This unit ensures that learners can operate safely and effectively in a bicycle work area to either become a valued member of a repair team in the industry or in a recreational context.

Unit introduction

This unit will focus on the learner understanding their responsibilities for their and others safety in the bicycle work area, to show appropriate attitudes and behaviours, to select and effectively use a range of standard and specialised hand tools, to select and use lubricants, to understand the management of the waste streams produced from their activity.

Assessment

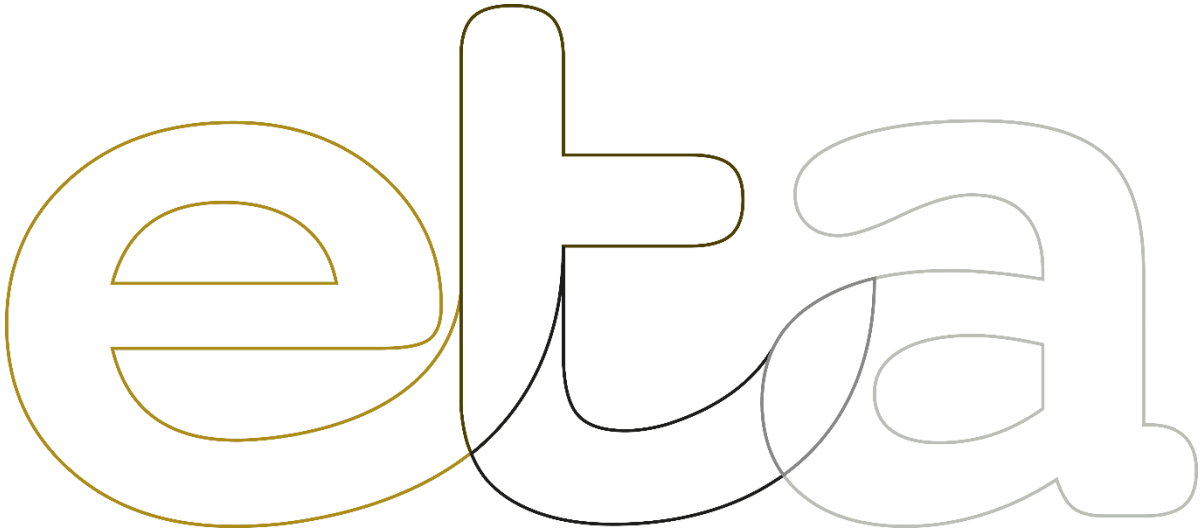
To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit, through a variety of assessment methods appropriate to the assessment environment.

Unit Reference Number		H/651/6093
Qualification Framework		RQF
Title		Bicycle Work Area Skills
Unit Level		1
Guided Learning Hours		12
Total Qualification Time		15
Unit Credit Value		2
Unit Grading Structure		Pass / Fail

	Learning Outcome		**Assessment Criteria - The learner can**	**Expansion Criteria**
1	Know how to operate safely in a bicycle work area	**1.1**	Explain the responsibilities for your own safety in the bicycle work area	Current health and safety legislation
		1.2	Explain your responsibilities for the safety of others in the bicycle work area	
		1.3	Show the ability to follow own organisation requirements on COSHH	
		1.4	Show the selection and effective use of the PPE provided in the bicycle work area	To include: • Eye protection • Head protection • Safety gloves

2	Understand the behaviours needed to operate effectively in a bicycle work area	**2.1**	Demonstrate the ability to arrive at the bicycle work area in a condition to perform effectively for the whole work period	To include: • On time • Appropriate clothing and foot ware • Physically able to perform duties • Mentally able to perform duties
		2.2	Show the ability to work effectively and efficiently in the bicycle work area	To include: • Follow industry best practice methods in repair operations • Layout components in a logical manner to facilitate re-assembly • Make use of technology to record images to support the repair operation • Make use of technology to record images to report to the customer or for warranty purposes
3	Know how to effectively use the facilities of the bicycle work area	**3.1**	Show the effective use of a bicycle work stand	To include: • Either a portable or fixed floor stand • Height adjustable • Rotating head
		3.2	Show the removal and refitment of a bicycle from a bicycle carrier fitted to a vehicle	To include: • The use of appropriate security devices The use of appropriate protection to bike and vehicle
		3.3	Show the effective cleaning of the workspace in the bicycle work area	
4	Know how to effectively use the bicycle work area equipment	**4.1**	Show the correct selection and use of the basic hand tools required for bicycle repair	To include: • Allen and torx keys • Spanners • Screwdrivers • Pliers • Hammers • Tyre levers
		4.2	Show the correct selection and use of the special tools required for bicycle repair	To include: Industry standard tools needed for the operations required of the Bicycle Repairs unit

		4.3	Show the effective use of torque tightening devices in the bicycle work area	To include: • Simple pre-set torque wrench • Breakneck torque wrench
		4.4	Show the effective selection and use of lubricants in the bicycle work area	To include: • Chain lubricant • Grease • Anti-seize compound • Spray, general purpose lubricant



Level 1 Unit – Inspecting Bicycles

Unit Aim

This unit ensures that learners can effectively inspect a variety of bicycles.

Unit introduction

This unit will focus on the learner knowing the different styles of bicycles and their different features, how to inspect them to identify elements needing repair, replacement or monitoring and how record the details of these inspections.

Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit, through a variety of assessment methods appropriate to the assessment environment.

Unit Reference Number		J/651/6094
Qualification Framework		RQF
Title		Inspecting Bicycles
Unit Level		1
Guided Learning Hours		12
Total Qualification Time		13
Unit Credit Value		1
Unit Grading Structure		Pass / Fail

	Learning Outcome		**Assessment Criteria - The learner can**	**Expansion Criteria**
1	Understand the styles of modern bicycles	**1.1**	Identify the common styles of modern bicycles	To include: • Road • MTB • Hybrid • Commuter • Gravel • BMX • Cargo
		1.2	Explain the common use of the bicycle styles identified in 1.1	
2	Understand the major elements of modern bicycles	**2.1**	Identify the major components of modern bicycles	To include: • Wheels • Tyres • Forks • Handlebars • Frame • Pedal cranks and chain rings • Seat post and saddle • Brake assemblies and friction materials

				• Chain, derailleurs and sprockets • Belt
3	Know how to inspect bicycles to identify elements needing repair, replacement or monitoring	**3.1**	Show the selection of the correct inspection criteria for the style of bicycle to be inspected	To include: • Own organisations preferred method • Specific to the style of the bicycle to be inspected
		3.2	Show the effective, systematic inspection of bicycles	To include: • Bicycle with rim brakes • Bicycle with disk brakes • Bicycle with suspension • Bicycle with mudguards and rack
		3.3	List the common faults an effective, systematic inspection of a bicycle will reveal	To include: • Wheels • Tyres • Forks • Handlebars • Frame • Pedal cranks and chain rings • Seat post and saddle • Brake assemblies and friction materials • Chain, derailleurs and sprockets
		3.4	Demonstrate the functional test ride of bicycles	To include: • Only on bicycles that are safe to ride • The types listed in 3.2
		3.5	Show the effective recording of the bicycle inspection	Using own organisations' preferred method

4	Know how to inspect bicycles post repair to ensure the repairs are complete, that they perform as required and are safe	**4.1**	Show the post repair inspection of bicycles	To include: • Elements repaired • Safety checks
		4.2	Show the post repair test ride of bicycles	
		4.3	Show the effective recording of the bicycle inspection	Using own organisations' preferred method
		4.4	State the next step before the bicycle can be returned to the customer	Confirmatory inspection by a level 2 or above bicycle mechanic

Level 1 Unit – Bicycle Repairs

Unit aim

This unit ensures that learners can carry out basic bicycle repairs.

Unit introduction

This unit will focus on the learner carrying out basic repairs to wheels, tyres, brakes and gears, simple adjustments of the bicycle to suit its rider, knowing the limits of the repairs they are able to do, to know when to ask for and how to give support to others in the repair team.

Assessment

To achieve this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit, through a variety of assessment methods appropriate to the assessment environment.

Unit Reference Number		K/651/6095
Qualification Framework		RQF
Title		Bicycle Repairs
Unit Level		1
Guided Learning Hours		12
Total Qualification Time		14
Unit Credit Value		1
Unit Grading Structure		Pass / Fail

	Learning Outcome		**Assessment Criteria - The learner can**	**Expansion Criteria**
1	Know how to repair bicycle wheels	**1.1**	Demonstrate the removal and refitment of a bicycle front wheel	To include: • Solid axle • QR axle • Through axle
		1.2	Demonstrate the removal and refitment of a bicycle rear wheel	
		1.3	Show the removal and refitment of a bicycle tyre	To include: • Checking for foreign objects that cause punctures • Correct direction of rotation • Inflation to appropriate pressure
		1.4	Demonstrate the removal and refitment of a bicycle inner tube	To include: • Repair puncture • Selecting a new tube of the correct size
		1.5	Explain how to identify if a bicycle tyre is tubeless	
2	Know how to repair bicycle brakes	**2.1**	Explain how to check if bicycle brake pads are worn out	To include: • Rim brake pads • Disk brake pads
		2.2	Explain what the concave/convex washers on the attachment post of a bicycle rim brake pad are for	Facilitate alignment in two planes

		2.3	Show how to replace bicycle rim brake pads	To include: • Dual pivot brake assembly • V brake assembly
		2.4	Show the adjustment of a bicycle brake lever travel	To include: • Dual pivot brake outer cable length and adjuster screw • V brake assembly outer cable length
		2.5	Explain the cause of intermittent rubbing of brake pads on the wheel rim and how to resolve it	To include: • Out of true wheel • Ask a more qualified colleague to true the wheel
3	Know how to repair bicycle gear trains	**3.1**	Show how to check a bicycle chain for wear	To include: • Using a chain checker • Ask a more qualified colleague to check rest of drive train if chain is worn out
		3.2	Show how to tension a single speed bicycle chain	
		3.3	Show how to remove and refit a bicycle chain with a quick link	
		3.4	Demonstrate how to adjust bicycle gear cable outer adjusters to index gears	To include: • Bicycles with front and rear derailleurs • Effective shifting across all gears • Checking that chain doesn't fall off sprockets. If it does, ask a more qualified colleague to set derailleur stop screws
		3.5	Explain how to know which pedal fits on which side of a bicycle	To include: • Stamping with R & L • Sticker with R & L
		3.6	Show how to change bicycle pedals	
4	Know how to repair bicycle seating	**4.1**	Show how to adjust a bicycle seat post height	
		4.2	Show how to change a bicycle saddle	To include: • Universal saddle clamp • Single bolt seat post clamp • Twin bolt seat post clamp

		4.3	Explain what the insertion mark on the seat post is for	
		4.4	Explain how to adjust a saddle to suit a bicycle rider	To include: • Height • Reach • Rake
5	Know how to repair bicycle steering	**5.1**	Show how to adjust bicycle handlebars	To include: • Height of threaded steerer handlebars • Rotation of handlebar on an A head steerer
		5.2	Demonstrate how to adjust the handlebar controls to suit rider preference	To include: • Brake levers • Gear shifters
		5.3	Explain what the insertion mark on the handlebar stem is for	To include: • A threaded steerer
		5.4	Show how to change handlebar grips	To include: • Grips with clamp rings • Grips with no clamp rings
		5.5	Explain the considerations to be made when setting the handlebar height and rotation and the position of the controls on the handlebar	To include: • Bicycle style • Riding style • Rider preference
6	Understand how to give or receive support with bicycle repairs	**6.1**	Give examples of when a level 1 bicycle mechanic must request support from a more qualified colleague	To include: • When a repair has gone wrong, and damage has been made • After repairs are complete and the bicycle is ready to be returned to the customer • When the faults found on inspection are beyond the repairs that a level 1 mechanic is authorised to complete • When unsure of how to proceed
		6.2	Give examples of when a level 1 bicycle mechanic should support another colleague	To include: • When it can be seen they need support • When requested to assist