

Entry Level 3, Level 1 Award and Level 2 Certificate in Cycle Mechanics (3902-08,-18,-28)

August 2017 Version 1.2



Qualification at a glance

Subject area	Cycle Mechanics
City & Guilds number	3902
Age group approved	All
Entry requirements	None
Assessment	Practical assignments
Support materials	Qualification Handbook Assessment Pack for Centres
Registration and certification	For last dates, please see the Online Catalogue/Walled Garden

Title and level	GLH	TQT	City & Guilds number	Accreditation number
Entry Level 3 Award in Cycle Mechanics	25	50	3902-08	600/0659/6
Level 1 Award in Cycle Mechanics	31	60	3902-18	600/0495/2
Level 2 Certificate in Cycle Mechanics	103	200	3902-28	600/0660/2

Version and date	Change detail	Section
1.2 August 2017	Added TQT details Deleted QCF	Qualification at a glance, Structure Throughout
1.1 April 2013	Removed references to Assessment Answer Pack	Qualification at a glance Error! Reference source not found.



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1 Introduction

This document tells you what you need to do to deliver these qualifications:

Area	Description
Who are the qualifications for?	Candidates wanting to develop some of the key skills and understanding in building, servicing, repair and maintenance of all types of cycles. These qualifications could also be used as 'interest' courses for a wide range of learners.
What do the qualifications cover?	Candidates will learn, develop and practise the skills required for employment and/or career progression in the cycle maintenance and building sector.
What opportunities for progression are there?	<p>Candidates can progress into employment or to the following City & Guilds qualifications:</p> <ul style="list-style-type: none"> • Level 1 Award in Cycle Mechanics • Level 2 Certificate in Cycle Mechanics <p>In addition, candidates who enjoy leading teams of people at work could also move onto a qualification as a Team Leader or Supervisor such as qualifications at Levels 2 or 3 through the Institute of Leadership and Management (ILM).</p>

Structure

To achieve the **Entry Level 3 Award in Cycle Mechanics**, learners must achieve **5** credits from the mandatory units plus any additional credits from the elective units.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
Mandatory			
T/502/6971	081	Remove and replace cycle wheels, tyres and inner tubes	1
J/502/7252	082	Remove and replace cycle brake blocks	1
L/502/7253	083	Lubricate and tension a single speed cycle chain	1
D/502/7273	084	Remove and replace cycle saddles, seatposts and adjust handlebars	1
L/502/7320	085	Clean and prepare a cycle for use	1

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
Elective			
R/502/7321	181	Repair a cycle puncture	1
Y/502/7322	182	Remove and replace a cycle rim brake assembly	2
D/502/7323	183	Remove and replace a cycle gear assembly	2
H/502/7324	184	Carry out a systematic cycle check	1

To achieve the **Level 1 Award in Cycle Mechanics**, learners must achieve **6** credits from the mandatory units plus any additional credits from the elective units.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
Mandatory			
R/502/7321	181	Repair a cycle puncture	1
Y502/7322	182	Remove and replace a cycle rim brake assembly	2
D/502/7323	183	Remove and replace a cycle gear assembly	2
H/502/7324	184	Carry out a systematic cycle check	1
Elective			
M/502/7326	281	Remove and replace cycle tubular and tubeless tyres	1
H/502/7355	282	Remove and replace cycle braking systems	2
T/502/7327	283	Remove and replace cycle gear systems	2
A/502/7328	284	Remove and replace cycle hub bearings	2
J/502/7333	285	Remove and replace cycle bottom brackets and cranks	2
L/502/7334	286	Build a cycle wheel	3
H/502/7338	287	Prepare frames and forks for cycle assembly	1
K/502/7339	288	Augment a cycle	2
T/502/7344	289	Change a cycle frame	2
A/502/7374	290	Service cycle headsets assemblies	2

To achieve the **Level 2 Certificate in Cycle Mechanics**, learners must achieve a minimum of **20** credits from the mandatory units plus any additional credits from the elective units.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value
Mandatory			
R/502/7321	181	Repair a cycle puncture	1
Y/502/7322	182	Remove and replace a cycle rim brake assembly	2
H/502/7324	184	Carry out a systematic cycle check	1
T/502/7327	283	Remove and replace cycle gear systems	2
A/502/7328	284	Remove and replace cycle hub bearings	2
J/502/7333	285	Remove and replace cycle bottom brackets and cranks	2
L/502/7334	286	Build a cycle wheel	3
H/502/7338	287	Prepare frames and forks for cycle assembly	1
K/502/7339	288	Augment a cycle	2
T/502/7344	289	Change a cycle frame	2
A/502/7345	290	Service cycle headsets assemblies	2
Elective			
M/502/7326	281	Remove and replace cycle tubular and tubeless tyres	1
H/502/7355	282	Remove and replace cycle braking systems	2

Total Qualification Time

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Entry Level 3 Award in Cycle Mechanics	25	50
Level 1 Award in Cycle Mechanics	31	60
Level 2 Certificate in Cycle Mechanics	103	200



2 Centre requirements

Approval

If your Centre is approved to offer the qualification Cycle Maintenance and Repair Skills (3993-01) you will receive automatic approval to offer the new City & Guilds Entry Level 3 Award, Level 1 Award and Level 2 Certificate in Cycle Mechanics.

Existing centres who wish to offer these qualifications and did not previously offer Cycle Maintenance and Repair Skills must use the **standard** Qualification Approval Process.

To offer these qualifications, new centres will need to gain both centre and qualification approval. Please refer to the *Centre Manual - Supporting Customer Excellence* for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualifications before designing a course programme.

Internal quality assurance

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications.

Quality assurance includes: initial centre approval, qualification approval and the centre's own internal procedures for monitoring quality. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance.

National standards and rigorous quality assurance are maintained by the use of:

- City & Guilds practical tasks, marked by the centre according to externally set marking criteria
- internal (centre) quality assurance
- City & Guilds external verification.

To meet the quality assurance criteria for this qualification, the centre must ensure that the following internal roles are undertaken:

- quality assurance co-ordinator
- assessor
- internal verifier/moderator
- examinations secretary.

Full details and guidance on the internal and external quality assurance requirements and procedures are provided in the *Centre Manual - Supporting Customer Excellence*, together with full details of the tasks, activities and responsibilities of quality assurance staff.

In order to fully support candidates, centres are required to retain copies of candidates' assessment records for three years after certification.

External quality assurance

External verifiers are appointed by City & Guilds to approve centres, and to monitor the assessment and internal quality assurance carried out by centres. External verification is carried out to ensure that assessment is valid and reliable, and that there is good assessment practice in centres. To carry out their quality assurance role, external verifiers/moderators must have appropriate occupational and verifying knowledge and expertise. City & Guilds external verifiers attend training and development designed to keep them up-to-date, to facilitate standardisation between verifiers and to share good practice.

External verifiers

The role of the external verifier is to:

- provide advice and support to centre staff
- ensure the quality and consistency of assessments within and between centres by the use of systematic sampling
- regularly visit centres to ensure they continue to meet the centre and qualification approval criteria
- provide feedback to centres and to City & Guilds.

External quality assurance for the qualification will be provided by the usual City & Guilds external verification process. This includes the use of an electronically scannable report form which is designed to provide an objective risk analysis of individual centre assessment and verification practice. Further details of the role of external verifiers are given in the *Centre Manual - Supporting Customer Excellence*.

Continuing professional development (CPD)

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

Candidate entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that candidates have the potential and opportunity to gain the qualifications successfully.

Age restrictions

There is no age restriction for these qualifications unless this is a legal requirement of the process or the environment.



3 Delivering the qualification

Support materials

The following resources are available for these qualifications:

Description	How to access
Assessment Pack for Centres	www.cityandguilds.com



4 Assessment

Assessment of the qualification

Candidates must:

- successfully complete one assignment for each unit.

City & Guilds has written the following assessments to use with this qualification:

- assignments are available from the City & Guilds website
www.cityandguilds.com



5 Units

Availability of units

The following units can be found on The Register of Regulated Qualifications: <http://register.ofqual.gov.uk/Unit>

Structure of units

These units each have the following:

- City & Guilds reference number
- unit accreditation number (UAN)
- title
- level
- credit value
- unit aim
- endorsement by a sector or other appropriate body
- learning outcomes which are comprised of a number of assessment criteria

Summary of units

City & Guilds unit number	Unit title	UAN
081	Remove and replace cycle wheels, tyres and inner tubes	T/502/6971
082	Remove and replace cycle brake blocks	J/502/7252
083	Lubricate and tension a single speed cycle chain	L/502/7253
084	Remove and replace cycle saddles, seatposts and adjust handlebars	D/502/7273
085	Clean and prepare a cycle for use	L/502/7320
181	Repair a cycle puncture	R/502/7321
182	Remove and replace a cycle rim brake assembly	Y/502/7322
183	Remove and replace a cycle gear assembly	D/502/7323
184	Carry out a systematic cycle check	H/502/7324
281	Remove and replace cycle tubular and tubeless tyres	M/502/7326
282	Remove and replace cycle braking systems	H/502/7355

City & Guilds unit number	Unit title	UAN
283	Remove and replace cycle gear systems	T/502/7327
284	Remove and replace cycle hub bearings	A/502/7328
285	Remove and replace cycle bottom brackets and cranks	J/502/7333
286	Build a cycle wheel	L/502/7334
287	Prepare frames and forks for cycle assembly	H/502/7338
288	Augment a cycle	K/502/7339
289	Change a cycle frame	T/502/7344
290	Service cycle headsets assemblies	A/502/7345

Unit 081

Remove and replace cycle wheels, tyres and inner tubes

UAN:	T/502/6971
Level:	Entry 3
Credit value:	1
GLH:	5
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the basic skills and knowledge required to remove and replace cycle wheels, tyres and inner tubes.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and replacing wheels, tyres and inner tubes
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when working on cycle wheels, tyres and inner tubes
1.2	safely handle and dispose of used wheels, tyres and inner tubes
1.3	safely handle and support cycle and wheels when removing and replacing wheels, tyres and inner tubes
1.4	identify the people that must be informed of the progress on the work being undertaken.

Learning outcome	The learner will:
2.	know how cycle wheels, tyres and inner tubes function
Assessment criteria	
The learner can:	
2.1	list the components which are relevant to the removal and replacement of cycle wheels, tyres and inner tubes
2.2	state the basic function of:
	a. a tyre
	b. an inner tube
	c. fasteners.

Range
components - wheel, tyre, inner tubes, wheel nuts, quick release skewer

Learning outcome	The learner will:
3.	be able to carry out the removal and replacement of wheels, tyres and inner tubes
Assessment criteria	
The learner can:	
3.1	use the equipment required to carry out the removal and replacement of wheels, tyres, inner tubes and fastenings
3.2	demonstrate the removal and replacement of the front and rear wheels, tyres and inner tubes
3.3	demonstrate undoing and tightening fasteners associated with cycle wheels
3.4	identify cosmetic damage of cycle components and inform the relevant person.

Range
equipment - spanner, tyre levers, quick release skewer, pump

Unit 082

Remove and replace cycle brake blocks

UAN:	J/502/7252
Level:	Entry 3
Credit value:	1
GLH:	5
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the basic skills and knowledge required to remove and replace cycle brake blocks.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and replacing brake blocks
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when working on cycle brake blocks
1.2	safely handle and dispose of used brake blocks
1.3	safely handle and support a cycle when removing and replacing brake blocks
1.4	identify the people that must be informed of the progress on the work being undertaken.

Learning outcome	The learner will:
2.	know how cycle brake blocks function
Assessment criteria	
The learner can:	
2.1	list the components which are relevant to the removal and replacement of brake blocks
2.2	state the basic function of cycle:
	a. brakes
	b. brake blocks
	c. brake cables
	d. brake levers.

Range
components - cable, barrel adjuster, brake block

Learning outcome	The learner will:
3.	be able to carry out the removal and replacement of brake blocks
Assessment criteria	
The learner can:	
3.1	use the equipment required to carry out the removal and replacement of brake blocks
3.2	demonstrate the removal and replacement of brake blocks
3.3	demonstrate undoing and tightening fasteners associated with brake blocks
3.4	identify cosmetic damage of cycle components and inform the relevant person.

Range
brake blocks - v-type

Unit 083

Lubricate and tension a single speed cycle chain

UAN:	L/502/7253
Level:	Entry 3
Credit value:	1
GLH:	9
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the basic skills and knowledge required to lubricate and tension a single speed cycle chain.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when lubricating and tensioning the chain of a single speed cycle
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when lubricating and tensioning a single speed cycle chain
1.2	safely handle and dispose of used chains
1.3	safely handle and support a cycle when lubricating and tensioning the chain of a single speed cycle
1.4	identify the people that must be informed of the progress on the work being undertaken.

Learning outcome	The learner will:
2.	know how cycle chains function
Assessment criteria	
The learner can:	
2.1	list the components which are relevant to the lubrication and tensioning of a single speed cycle chain
2.2	state the basic function of: <ol style="list-style-type: none"> a. chain b. chain tension c. chain lubrication.

Range
components - chain sprocket, chain, chain ring, wheel fasteners

Learning outcome	The learner will:
3.	be able to carry out the lubrication and tensioning of a single speed chain
Assessment criteria	
The learner can:	
3.1	use the equipment required to carry out lubrication and tensioning of a single speed cycle chain
3.2	demonstrate the lubrication of a single speed cycle chain
3.3	demonstrate the tensioning of a single speed cycle chain
3.4	demonstrate undoing and tightening fasteners associated with tensioning of a single speed cycle chain
3.5	identify cosmetic damage of cycle components and inform the relevant person.

Unit 084

Remove and replace cycle saddles, seatposts and adjust handlebars

UAN:	D/502/7273
Level:	Entry 3
Credit value:	1
GLH:	5
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the basic skills and knowledge required to remove and replace cycle saddles, seatposts and adjust handlebars.

Learning outcome	The learner will:
1.	be able to work efficiently and safely removing and replacing saddles, seatposts and adjusting handlebars of a cycle
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when working on saddles, seatposts and adjusting handlebars of cycles
1.2	safely handle and dispose of used saddles and seatposts of a cycle
1.3	safely handle and support a cycle when working on saddles, seatposts and adjusting handlebars of cycles
1.4	identify the people that must be informed of the progress of work undertaken.

Learning outcome	The learner will:
2.	know how cycle saddles, seatposts and handlebars function
Assessment criteria	
The learner can:	
2.1	list the components which are relevant to saddles, seatposts and handlebars of cycles
2.2	state the basic function of:
	a. saddles
	b. seatposts
	c. handlebars
	d. seatpost limit marks.

Range
components - handle bars, stem, seatposts and saddle, seat pin binder

Learning outcome	The learner will:
3.	be able to carry out the removal and replacement of saddles, seatposts and adjustment handlebars of cycles
Assessment criteria	
The learner can:	
3.1	use the equipment required to carry out the removal and replacement of saddles, seatposts and adjustment of handlebars of cycles
3.2	demonstrate the removal and replacement of saddles, seatposts and adjustment of handlebars of cycles
3.3	demonstrate undoing and tightening fasteners associated with the removal and replacement of saddles, seatposts and adjustment of handlebars of cycles
3.4	identify cosmetic damage of cycle components and inform the relevant person.

Unit 085

Clean and prepare a cycle for use

UAN:	L/502/7320
Level:	Entry 3
Credit value:	1
GLH:	5
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the basic skills and knowledge required to clean and prepare a cycle for use.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when cleaning and preparing a cycle for use
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when cleaning and preparing a cycle for use
1.2	safely handle and dispose of cleaning materials and substances used when cleaning and preparing a cycle for use
1.3	safely handle and support a cycle during cleaning and preparation for use
1.4	identify the people that must be informed of the progress on the work being undertaken.

Range
Personal Protective Equipment – safe, road worthy, clean

Learning outcome	The learner will:
2.	know how cycle cleaning and finishing products work
Assessment criteria	
The learner can:	
2.1	state the function of:
	a. solvent
	b. detergent
	c. lubricant.

Learning outcome	The learner will:
	3. be able to carry out the cleaning and preparation of a cycle for use
Assessment criteria	
The learner can:	
3.1 use the materials required to carry out the cleaning and preparation of a cycle for use	
3.2 demonstrate how to clean a cycle	
3.3 demonstrate a basic safety check of a cycle	
3.4 identify cosmetic damage of cycle components and inform the relevant person.	

Range
basic safety check – ABC (air, brakes, chain)

Unit 181

Repair a cycle puncture

UAN:	R/502/7321
Level:	Level 1
Credit value:	1
GLH:	5
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to repair a puncture on a rear wheel.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when repairing a puncture on a rear wheel
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when repairing a puncture on a rear wheel
1.2	demonstrate Health and Safety workplace procedures when repairing a puncture
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials when repairing a puncture
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health and Safety workplace procedures – follow manufacturer's instructions, ventilation

Learning outcome	The learner will:
2.	be able to use relevant sources of information when repairing a puncture on a rear wheel
Assessment criteria	
The learner can:	
2.1	ensure that records for cycles, wheels, tyres and inner tubes are accurate
2.2	follow correct technical data for puncture repair.

Range
technical data - recommended tyre/rim pressures, manufacturer's instructions

Learning outcome	The learner will:
3.	know how cycle wheel rims, tyres and inner tubes function
Assessment criteria	
The learner can:	
3.1	identify the major components which are relevant to the removal and replacement of cycle wheels, tyres and inner tubes and the repair of punctures.
3.2	identify the common sizes and types of: <ul style="list-style-type: none"> a. wheel b. tyres c. inner tubes d. valves e. repair patches
3.3	outline the function of: <ul style="list-style-type: none"> a wheels b. tyres c. inner tubes d. fasteners e. repair patches f. valves
3.4	state causes of different types of punctures.

Range
components - rim tape, wheels, tyres, inner tubes, fasteners, valves common sizes – wheel/tyres/ inner tubes: 26 inches, 700c and 20 inches valves - Schraeder, Presta repair patches - various

Learning outcome	The learner will:
4.	be able to identify and use the appropriate tools and equipment to carry out the repair of a puncture on a rear wheel
Assessment criteria	
The learner can:	
4.1	demonstrate how to prepare and use the equipment required to repair a puncture on a rear wheel.

Range
equipment - tyre levers, spanner, puncture repair kit, pump

Learning outcome	The learner will:
5.	be able to carry out the repair of a puncture on a wheel
Assessment criteria	
<p>The learner can:</p> <ul style="list-style-type: none"> 5.1 demonstrate how to carry out the repair of a puncture on a rear wheel 5.2 demonstrate how to locate the puncture and identify the cause 5.3 demonstrate undoing and tightening of fasteners associated with the repair of a puncture on a rear wheel 5.4 explain how to recognise and report cosmetic damage to cycle components to the relevant person. 	

Unit 182

Remove and replace a cycle rim brake assembly

UAN:	Y/502/7322
Level:	Level 1
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace a cable operated rim brake assembly.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and replacing a cable operated rim brake assembly
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when working on a cable operated rim brake assembly
1.2	demonstrate Health and Safety workplace procedures when working on a cable operated rim brake assembly
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property when removing and replacing a cable operated rim brake assembly
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health and Safety workplace procedures - follow manufacturer's instructions

Learning outcome	The learner will:
2.	be able to use relevant sources of information when removing and replacing a cable operated rim brake assembly
Assessment criteria	
The learner can:	
2.1	ensure that records for cycle rim brake assembly are accurate

2.2 follow correct **technical data** for removal, inspection and replacement of a rim brake assembly.

Range

technical data - torque settings on all fasteners

Learning outcome	The learner will:
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3.	know how rim brakes function
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Assessment criteria

The learner can:

- | | |
|-----|---|
| 3.1 | identify the components which are relevant to a rim brake system |
| 3.2 | state the basic function of a brake |
| | a. lever |
| | b. inner and outer cable |
| | c. calliper |
| | d. block |
| | e. calliper balancing screw |
| | f. block wear indicator. |

Range

components – housing, barrel adjusters, pinch bolts, wheel rim

Learning outcome	The learner will:
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4.	be able to identify and use the appropriate tools and equipment to remove and replace a cable operated rim brake assembly
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Assessment criteria

The learner can:

- | | |
|-----|---|
| 4.1 | demonstrate how to prepare and use the equipment required to carry out the removal and replacement of a cable operated rim brake assembly. |
|-----|---|

Range

equipment - cable cutters, spanner, hex keys, screw driver, crimp

Learning outcome	The learner will:
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5.	be able to carry out the removal and replacement of a cable operated rim brake assembly
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Assessment criteria

The learner can:

- | | |
|-----|---|
| 5.1 | demonstrate how to carry out the removal and replacement of a cable operated rim brake assembly |
| 5.2 | demonstrate the procedure for setting up a cable operated rim brake |
| 5.3 | explain how to recognise and report cosmetic damage to cycle components to the relevant person. |

Range
procedure - according to manufacturer's instructions

Unit 183

Remove and replace a cycle gear assembly

UAN:	D/502/7323
Level:	Level 1
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace the front and rear gear assembly of a cycle.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and replacing front and rear gear assembly
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when working on the removal and replacement of front and rear gear assembly
1.2	demonstrate Health and Safety workplace procedures when removing and replacing front and rear gear assembly
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health and Safety workplace procedures - manufacturer's instructions

Learning outcome	The learner will:
2.	be able to use relevant sources of information when removing and replacing a front and rear gear assembly
Assessment criteria	
The learner can:	
2.1	ensure that records for removing and replacing a front and rear gear assembly are accurate

2.2 follow correct **technical data** for removing and replacing a front and rear gear assembly.

Range

records - job cards

technical data – manufacturer's instructions

Learning outcome	The learner will:
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3.	know how a front and rear gear assembly functions
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Assessment criteria

The learner can:

3.1 identify the **components** of a front and rear gear assembly

3.2 identify the function of the

a. H limit screw

b. L limit screw

c. b-tension adjuster

d. barrel adjuster

3.3 give examples of different **types of gear derailleur** and give their appropriate use

3.4 give examples of different **types of gear shifters** and their appropriate use

3.5 give examples of compatible components and non compatible components.

Range

components - H limit screw, L limit screw, b-tension adjuster, barrel adjuster, jockey wheels

types of gear derailleur - long cage, short cage, medium cage, rear derailleur, front derailleur for double and triple chain ring assemblies

types of gear shifters - thumb shifters, twist grip, trigger shifters

Learning outcome	The learner will:
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4.	be able to identify and use the appropriate tools and equipment to carry out the removal and replacement of a front and rear gear assembly
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Assessment criteria

The learner can:

4.1 demonstrate how to prepare and use the **equipment** required to carry out the removal and replacement of a front and rear gear assembly.

Range

equipment - hex keys, spanner, chain-breaker, screw driver

Learning outcome	The learner will:
5.	be able to carry out the removal and replacement of a front and rear gear assembly
Assessment criteria	
The learner can:	
5.1	demonstrate how to carry out the removal and replacement of a front and rear gear assembly
5.2	demonstrate the procedure for setting up a front and rear gear assembly
5.3	demonstrate the procedure for undoing and tightening common types of fasteners associated with the removal and replacement of front and rear gear assembly
5.4	explain how to recognise and report cosmetic damage to cycle components to the relevant person.

Range
carry out - remove, install, limit and index procedure for gear assembly - manufacturer's instructions procedure for undoing and tightening fasteners - torque settings

Unit 183 Remove and replace a cycle gear assembly

Supporting information

Guidance

Remove and replace chain – front and rear derailleurs, index and limit.

Unit 184

Carry out a systematic cycle check

UAN:	H/502/7324
Level:	Level 1
Credit value:	1
GLH:	6
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to carry out a systematic cycle check and basic adjustments.

Learning outcome	The learner will:
1.	be able to work efficiently and safely carrying out a systematic cycle check and basic adjustments
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when carrying out a systematic cycle check and basic adjustments
1.2	demonstrate Health and Safety workplace procedures when carrying out a systematic cycle check and basic adjustments
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health and Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	be able to use relevant sources of information when carrying out a systematic cycle check and basic adjustments
Assessment criteria	
The learner can:	
2.1	ensure that records for carrying out a systematic cycle check and basic adjustments are accurate

2.2 state the importance of following correct technical data for carrying out a systematic cycle check and basic adjustments.

Range

records - pre-delivery inspection checklist

Learning outcome	The learner will:
3. know how to carry out a systematic cycle check and basic adjustments	
Assessment criteria	
The learner can:	
3.1 state the different stages of a systematic safety check.	

Range

stages - pre-delivery inspection checklist

Learning outcome	The learner will:
4. be able to select and use the appropriate tools and equipment to carry out a systematic cycle check and basic adjustments	
Assessment criteria	
The learner can:	
4.1 demonstrate how to prepare and use all the equipment required to carry out a systematic cycle check and basic adjustments .	

Range

equipment - spanners, hex keys, screw driver, torque wrench, pump, tyre pressure gauge

basic adjustments - tyre pressures, adjust cable tension, barrel adjustments on brakes, pedals

Learning outcome	The learner will:
5. be able to carry out a systematic cycle check and basic adjustments	
Assessment criteria	
The learner can:	
5.1 demonstrate the correct procedure for carrying out a systematic cycle check	
5.2 decide whether the cycle is in a safe and roadworthy condition	
5.3 carry out basic adjustments required to leave the cycle in a safe and roadworthy condition	
5.4 recognise and report cosmetic damage to cycle components to the relevant person.	

Unit 281

Remove and replace cycle tubular and tubeless tyres

UAN:	M/502/7326
Level:	Level 2
Credit value:	1
GLH:	6
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace tubular and tubeless cycle tyres so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and replacing tubular and tubeless tyres
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when removing and replacing tubular and tubeless cycle tyres
1.2	demonstrate Health & Safety workplace procedures when removing and replacing cycle tyres
1.3	describe and demonstrate workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work in a way which minimises the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Personal Protective Equipment - compressor, gloves, goggles, apron Health & Safety workplace procedures - manufacturer's instructions, ventilation

Learning outcome	The learner will:
2.	know how to locate and use relevant sources of information when removing and replacing tubular and tubeless cycle tyres
Assessment criteria	

<p>The learner can:</p> <p>2.1 ensure that records for cycle tyres are accurate</p> <p>2.2 state the importance of following correct technical data for removal and replacement of cycle tyres.</p>
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Range
records - job cards

Learning outcome	The learner will:
3.	know how tubular and tubeless cycle tyres operate
Assessment criteria	
<p>The learner can:</p> <p>3.1 state the function, operation, advantages and disadvantages of different tubular and tubeless cycle tyre systems</p> <p>a. clinchers: sizes and types</p> <p>b. tubular and tubular clinchers</p> <p>c. tubeless.</p>	

Range
operation - tread patterns, sizes, front and rear specific tread, directional, intended use

Learning outcome	The learner will:
4.	be able to select and use the appropriate tools and equipment to remove and replace tubular and tubeless cycle tyres
Assessment criteria	
<p>The learner can:</p> <p>4.1 demonstrate how to prepare and use the equipment required to remove and replace tubular and tubeless cycle tyres.</p>	

Range
equipment - tyre levers, compressor, pump

Learning outcome	The learner will:
5.	be able to carry out the removal and replacement of tubular and tubeless cycle tyres
Assessment criteria	
<p>The learner can:</p> <p>5.1 demonstrate the correct procedure for carrying out the removal and replacement of cycle tubular and tubeless tyres being worked upon</p> <p>5.2 demonstrate the basic examination and test methods carried out when removing and replacing tubular and tubeless cycle tyres</p> <p>5.3 recognise and report cosmetic damage to cycle components to the relevant person.</p>	

Unit 282

Remove and replace cycle braking systems

UAN:	H/502/7355
Level:	Level 2
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace cycle non standard braking systems so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and replacing non standard braking systems
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when working on cycle non standard braking systems
1.2	demonstrate the Health & Safety workplace procedures to follow when removing and replacing non standard braking systems
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	know how to locate and use relevant sources of information when removing and replacing non standard braking systems
Assessment criteria	
The learner can:	
2.1	ensure that records for cycle non standard braking systems are accurate

2.2 state the importance of following correct technical data for removal and replacement of cycle non standard braking systems.

Range

records - job cards

Learning outcome | **The learner will:**

3. understand how cycle non standard braking systems operate

Assessment criteria

The learner can:

- 3.1 state the function, **operation**, advantages and disadvantages of different cycle non standard braking systems
- a. rim brakes
 - b. disc brakes
 - c. hub brakes

Range

operation - v-type, cantilever, dual pivot, u-type, cable operated, cable operated drum

Learning outcome | **The learner will:**

4. be able to select and use the appropriate tools and equipment to remove and replace non standard braking systems

Assessment criteria

The learner can:

- 4.1 demonstrate how to prepare and use the **equipment** required to carry out work on cycle non standard braking systems.

Range

equipment - spanner, crimp, screw driver, hex keys, cable cutters

Learning outcome | **The learner will:**

5. be able to carry out the removal and replacement of non standard braking systems

Assessment criteria

The learner can:

- 5.1 demonstrate the correct procedure for carrying out the removal and replacement of the cycle non standard braking systems being worked upon
- 5.2 demonstrate the basic examination and test methods carried out when removing and replacing of cycle non standard braking systems
- 5.3 recognise and report cosmetic damage to cycle components to the relevant person

Unit 283

Remove and replace cycle gear systems

UAN:	T/502/7327
Level:	Level 2
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace cycle gear systems so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing, repairing and replacing cycle gear systems
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when removing and replacing cycle gear systems
1.2	demonstrate Health & Safety workplace procedures when removing and replacing cycle gear systems
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	be able to use relevant sources of information when removing and replacing cycle gear systems
Assessment criteria	
The learner can:	
2.1	ensure that records for cycle gear systems are accurate

2.2 state the importance of following correct **technical data** when removing and replacing cycle gear systems.

Range
records - job cards technical data - manufacturer's instructions, torque settings

Learning outcome	The learner will:
3.	know how cycle gear systems function
Assessment criteria	
The learner can:	
3.1	state the function, operation, advantages and disadvantages of different cycle gear systems .

Range
gear systems - mountain, road, hybrid

Learning outcome	The learner will:
4.	be able to select and use the appropriate tools and equipment to carry out the removal and replacement of cycle gear systems
Assessment criteria	
The learner can:	
4.1	demonstrate how to prepare and use all the equipment required to remove and replace cycle gear systems.

Range
equipment - cassette/block removal tools, cable cutters, crimp, screw driver, hex keys, chain breaker, spanner, crank puller

Learning outcome	The learner will:
5.	be able to carry out the removal and replacement of cycle gear systems
Assessment criteria	
The learner can:	
5.1	demonstrate the correct procedure for carrying out the removal and replacement of the cycle gear systems being worked upon
5.2	demonstrate the basic examination and test methods carried out when removing and replacing cycle gear systems
5.3	recognise and report cosmetic damage to cycle components to the relevant person

Range
procedure - remove chain, cable inners and outers, remove cassette, remove shifters/shift levers, remove chain rings examination and test methods - identify worn/damaged chains, sprockets, chain rings, jockey wheels, cranks, front and rear derailleurs, cables and housing

Unit 284

Remove and replace cycle hub bearings

UAN:	A/502/7328
Level:	Level 2
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace cycle hub bearings so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely remove and replace cycle hub bearings
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when removing and replacing cycle hub bearings
1.2	demonstrate Health & Safety workplace procedures when removing and replacing cycle hub bearings
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	know how to locate and use relevant sources of information when removing and replacing cycle hub bearings
Assessment criteria	
The learner can:	
2.1	ensure that records for cycle hub bearings are accurate

2.2 state the importance of following correct technical data when removing and replacing cycle hub bearings.

Range

records - job cards

Learning outcome | **The learner will:**

3. know how cycle hub bearings operate

Assessment criteria

The learner can:

- 3.1 state the function, operation, advantages and disadvantages of different **cycle hub** bearings
- 3.2 explain the differences between removing cassettes, freewheels and fixed sprockets in order to service hubs

Range

cycle hub - cup and cone bearing system, cartridge bearing systems, cassettes, freewheel and fixed

Learning outcome | **The learner will:**

4. be able to select and use the appropriate tools and equipment to remove and replace cycle hub bearings

Assessment criteria

The learner can:

- 4.1 demonstrate how to prepare and use the **equipment** required to remove and replace cycle hub bearings.

Range

equipment - manufacturer specific bearing removal tools, cone spanners, freewheel/cassette remover, free-hub remover, hex keys, chain whip, lock ring tool

Learning outcome | **The learner will:**

5. be able to carry out the removal and replacement of cycle hub bearings

Assessment criteria

The learner can:

- 5.1 demonstrate the correct procedure for carrying out the removal of cassettes, freewheels or fixed sprockets
- 5.2 demonstrate the correct procedure for carrying out the removal and replacement of hub bearings
- 5.3 demonstrate the **correct procedure** for carrying out the reinstallation of the cassettes, freewheels or fixed sprockets
- 5.4 demonstrate the basic examination and test methods carried out on the rebuilt hub assembly
- 5.5 recognise and report cosmetic damage to cycle components to the relevant person.

Range
correct procedure - cup and cone and cartridge bearing

Unit 285

Remove and replace cycle bottom brackets and cranks

UAN:	J/502/7333
Level:	Level 2
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to remove and replace bottom brackets and cranks so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when removing and installing cycle bottom brackets and cranks
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when removing and installing cycle bottom brackets and cranks
1.2	demonstrate Health & Safety workplace procedures relating to removing and installing cycle bottom brackets and cranks
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	know how to locate and use relevant sources of information when removing and installing cycle bottom brackets and cranks
Assessment criteria	
The learner can:	
2.1	ensure that records for cycle bottom brackets and cranks are accurate

2.2 state the importance of following correct **technical data** when removing and installing cycle bottom brackets and cranks.

Range

records - job cards

technical data - torque settings, bottom bracket shell thread types

Learning outcome	The learner will:
3.	know how cycle bottom brackets and cranks function
Assessment criteria	
The learner can:	
3.1	state the function, operation, advantages and disadvantages of different cycle bottom brackets and cranks
3.2	explain compatibility between different cycle bottom brackets and cranks
3.3	explain the impact of chain line on performance.

Range

cycle bottom brackets and cranks - 3-piece, 1-piece, square taper, splined, outboard bearing

Learning outcome	The learner will:
4.	be able to select and use the appropriate tools and equipment to carry out the removal and installment of cycle bottom brackets and cranks
Assessment criteria	
The learner can:	
4.1	demonstrate how to prepare and use the equipment required to remove and install cycle bottom brackets and cranks.

Range

equipment - bottom bracket removal tools and crank extractors

Learning outcome	The learner will:
5.	be able to carry out the removal and installation of cycle bottom brackets and cranks
Assessment criteria	
The learner can:	
5.1	demonstrate the correct procedure for carrying out the removal and replacement of the cycle bottom brackets being worked upon
5.2	demonstrate the correct procedure for carrying out the removal and replacement of the cycle cranks being worked upon
5.3	demonstrate the basic examination and test methods on chain line
5.4	recognise and report cosmetic damage to cycle components to the relevant person.

Range
cycle bottom brackets - cup and axle, outboard bearing

Unit 286

Build a cycle wheel

UAN:	L/502/7334
Level:	Level 2
Credit value:	3
GLH:	14
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to build a cycle wheel so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when building a cycle wheel
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when lacing, tensioning and truing a cycle wheel
1.2	demonstrate Health & Safety workplace procedures relating to wheel building
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work in a way which minimises the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	know how to use relevant sources of information to build a cycle wheel
Assessment criteria	
The learner can:	
2.1	ensure that records for wheel building are accurate
2.2	state the importance of following correct technical data for wheel building
2.3	collect data required to calculate correct spoke lengths for a wheel.

Range
records - job cards technical data - manufacturers instructions

Learning outcome	The learner will:
3.	know how cycle wheel components function
Assessment criteria	
The learner can:	
3.1	name the main unit components and features of wheels
3.2	identify <ul style="list-style-type: none"> a. common spoke lacing patterns b. leading and trailing spokes c. inbound and outbound spokes.

Range
components - rim, spokes, hub, nipples

Learning outcome	The learner will:
4.	be able to select and use the appropriate tools and equipment to build a cycle wheel
Assessment criteria	
The learner can:	
4.1	demonstrate how to prepare and use the equipment required to measure, build and test a cycle wheel.

Range
equipment - wheel jig, spoke key, dishing gauge, spoke tensionometer, spoke gauge

Learning outcome	The learner will:
5.	be able to carry out the lacing, truing and tensioning of a dished wheel
Assessment criteria	
The learner can:	
5.1	state how manufacturers' data can be used to select wheel components which are compatible with each other and suitable for the intended use of the wheel
5.2	perform calculations (traditional or web-based methods) to determine correct spoke lengths for a dished wheel
5.3	demonstrate lacing, tensioning and truing a minimum diameter of 26 inch (ERTO 559) dished wheel with three-cross pattern
5.4	demonstrate spoke stress relieving techniques
5.5	demonstrate technique which minimises spoke wind-up
5.6	compare against recommended spoke tensions
5.7	recognise and report cosmetic damage to wheel components to the relevant person.

Unit 287

Prepare frames and forks for cycle assembly

UAN:	H/502/7338
Level:	Level 2
Credit value:	1
GLH:	6
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to prepare frames and forks for cycle assembly so that the cycle is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when preparing frames, forks for cycle assembly
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when preparing frames and forks
1.2	demonstrate Health & Safety workplace procedures when preparing frames and forks
1.3	describe and demonstrate workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work minimising the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	be able to use relevant sources of information to prepare frames and forks for cycle assembly
Assessment criteria	
The learner can:	
2.1	ensure that records for frame and forks are accurate

2.2 state the importance of following correct **technical data** for frame and fork preparation.

Range

records - job cards

technical data - manufacturers instructions

Learning outcome	The learner will:
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3.	know how cycle frames and forks function
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Assessment criteria

The learner can:

3.1 describe the **components**, features and dimensions of frames and forks including

a. Headtube dimensions

b. Bottom bracket shell dimensions

c. Steerer tube dimensions

3.2 explain how to ensure the compatibility of frames and forks.

Range

components - drop-outs and fork ends and seat tube dimensions

Learning outcome	The learner will:
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4.	be able to select and use the appropriate tools and equipment to prepare frames and forks for cycle assembly
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Assessment criteria

The learner can:

4.1 demonstrate how to prepare and use all the **equipment** required to prepare frames and forks ready for assembly.

Range

equipment - facing tools, alignment tools, reaming tools, chasing tools

Learning outcome	The learner will:
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5.	be able to carry out the preparation of frames and forks for cycle assembly
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Assessment criteria

The learner can:

5.1 demonstrate the correct procedure for carrying out the preparation of frames and forks for cycle assembly

a. Facing and reaming

b. Thread clearing

5.2 recognise and report cosmetic damage to cycle components to the relevant person.

Unit 288

Augment a cycle

UAN:	K/502/7339
Level:	Level 2
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to fit accessories on a cycle so that it is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely fitting cycle accessories
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when fitting cycle accessories
1.2	demonstrate Health & Safety workplace procedures relating to fitting cycle accessories
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work in a way which minimises the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Range
Health & Safety workplace procedures – manufacturer's instructions

Learning outcome	The learner will:
2.	be able to use relevant sources of information when fitting cycle accessories
Assessment criteria	
The learner can:	
2.1	ensure that records for fitting all cycle accessories are accurate
2.2	state the importance of following correct technical data when fitting cycle accessories.

Range
records - job cards technical data - manufacturers instructions

Learning outcome	The learner will:
	3. know how cycle accessories function
Assessment criteria	
The learner can: 3.1 state the function, operation, advantages and disadvantages of different cycle accessories .	

Range
accessories - mud guards, racks, lighting systems, bottle cages, child carriers, lock mounting

Learning outcome	The learner will:
	4. be able to select and use the appropriate tools and equipment to carry out the fitting of cycle accessories
Assessment criteria	
The learner can: 4.1 demonstrate how to prepare and use all the equipment required to fit cycle accessories.	

Learning outcome	The learner will:
	5. be able to carry out the fitting of cycle accessories
Assessment criteria	
The learner can: 5.1 demonstrate the correct procedure for carrying out the fitting of the cycle accessory being worked upon 5.2 recognise and report cosmetic damage to cycle components to the relevant person 5.3 make adjustments to the cycle after fitting the accessories to ensure it is left in a safe and roadworthy condition.	

Unit 289

Change a cycle frame

UAN:	T/502/7344
Level:	Level 2
Credit value:	2
GLH:	12
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to strip down and build a complete cycle so that it is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely stripping down and building a cycle
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when stripping down and building a cycle
1.2	demonstrate Health & Safety workplace procedures relating to stripping down and building a cycle
1.3	demonstrate and describe workplace and legislative procedures for handling, disposal and recycling of used and waste materials
1.4	work in a way which minimises the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Learning outcome	The learner will:
2.	know how to locate and use relevant sources of information when stripping down and building a cycle
Assessment criteria	
The learner can:	
2.1	ensure that records for stripping down and building a cycle are accurate
2.2	state the importance of following correct technical data for stripping down and building a cycle.

Range
records - job cards
technical data - manufacturers instructions

Learning outcome	The learner will:
3. understand how the cycle's systems operate	
Assessment criteria	
The learner can:	
3.1 identify the systems and components of a cycle and their functions.	

Range
cycle - front and rear derailleur system

Learning outcome	The learner will:
4. know how to select and use the appropriate tools and equipment to strip down and build a cycle	
Assessment criteria	
The learner can:	
4.1 demonstrate how to prepare and use the equipment required to carry out cycle building.	

Learning outcome	The learner will:
5. be able to carry out a cycle frame change	
Assessment criteria	
The learner can:	
5.1 demonstrate the correct procedure for stripping a cycle with a rigid frame and an index derailleur gear system, down to a bare frame and reassemble	
5.2 demonstrate the correct procedure when replacing brake and gear cables	
5.3 demonstrate the basic examination and test methods when stripping down and building a cycle	
5.4 recognise and report cosmetic damage to cycle components to the relevant person	
5.5 ensure the cycle is left in a safe and roadworthy condition.	

Unit 289 Change a cycle frame

Supporting information

Guidance

It is recommended that this unit be taken after achieving all other units at this level.

Unit 290

Service cycle headset assemblies

UAN:	A/502/7345
Level:	Level 2
Credit value:	2
GLH:	10
Assessment requirements specified by a sector or regulatory body	This unit is endorsed by SEMTA, the Sector Skills Council for Science, Engineering and Manufacturing Technologies.
Aim	The aim of this unit is to provide the learner with the skills and knowledge required to service cycle headset assemblies so it is left in a safe and roadworthy condition.

Learning outcome	The learner will:
1.	be able to work efficiently and safely when servicing cycle headset assemblies
Assessment criteria	
The learner can:	
1.1	use appropriate Personal Protective Equipment and safety methods when servicing cycle headset assemblies
1.2	demonstrate Health & Safety workplace procedures when servicing cycle headset assemblies
1.3	demonstrate and describe workplace and legislative procedures for servicing cycle headset assemblies
1.4	work in a way which minimises the risk of damage to the cycle, its systems, the environment, other people and their property
1.5	explain the importance of working to agreed timescales and keeping others informed of progress.

Learning outcome	The learner will:
2.	know how to locate and use relevant sources of information when servicing cycle headset assemblies
Assessment criteria	
The learner can:	
2.1	ensure that records for servicing cycle headset assemblies are accurate
2.2	state the importance of following correct technical data for servicing cycle headset assemblies.

Range
records - job cards technical data – manufacturer’s instructions

Learning outcome	The learner will:
	3. know how cycle headset assemblies operate
Assessment criteria	
The learner can: 3.1 state the function, operation, advantages and disadvantages of different headset assemblies .	

Range
headset assemblies - threaded, threadless

Learning outcome	The learner will:
	4. be able to select and use the appropriate tools and equipment to service cycle headset assemblies
Assessment criteria	
The learner can: 4.1 demonstrate how to prepare and use the equipment required to service cycle headset assemblies.	

Range
equipment - headset spanners, hex keys, cup press, cup removal tool, crown race remover, crown race setting tool, star nut setter

Learning outcome	The learner will:
	5. be able to carry out the servicing of cycle headset assemblies
Assessment criteria	
The learner can: 5.1 demonstrate the correct procedure for dismantling a threaded headset assembly 5.2 demonstrate the correct procedure for servicing a threaded headset assembly 5.3 demonstrate the correct procedure for reassembling a threaded headset assembly 5.4 demonstrate the correct procedure for dismantling a threadless headset assembly 5.5 demonstrate the correct procedure for servicing a threadless headset assembly 5.6 demonstrate the correct procedure for reassembling a threadless headset assembly 5.7 recognise and report cosmetic damage to cycle components to the relevant person.	



Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information such on such things as:

- **Walled Garden:** how to register and certificate candidates on line
- **Events:** dates and information on the latest Centre events
- **Online assessment:** information on how to register for GOLA/e-volve assessments.

Useful contacts

UK learners General qualification information	T: +44 (0)844 543 0033 E: learnersupport@cityandguilds.com
International learners General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, GOLLA, Navigation, User/menu option, Problems	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: business@cityandguilds.com
Publications Logbooks, Centre documents, Forms, Free literature	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413

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feedbackandcomplaints@cityandguilds.com

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City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Land Based Services (land-based qualifications), the Centre for Skills Development (CSD works to improve the policy and practice of vocational education and training worldwide) and Learning Assistant (an online e-portfolio).

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