INSTITUTE OF THE MOTOR INDUSTRY

IMI QUALIFICATION

QUALIFICATION SPECIFICATION Part B:

Assessment Criteria

For

IMI Entry Level Diploma for the Introduction to Motor Vehicle Industry and Technologies (Entry 3)

Qfqual I.D.: 601/8197/7

To be used with Candidate Assessment Summary and Combined Support Material.

For assessor and quality assurers only: *Qualification Specification Part A: Guidance and Teaching Plan.*

CENTRE INFORMATION

Please be aware that any **legislation** referred to in this qualification may be subject to amendment/s during the life of this qualification. Therefore IMI Approved Centres must ensure they are aware of and comply with any amendments, e.g. to health and safety legislation and employment practices.

Please be aware that **vehicle technologies** referred to in this qualification reflect current practice, but may be subject to amendment/s, updates and replacements during the life of this qualification. Therefore IMI Approved Centres must ensure they are aware of the latest developments and emerging technologies to ensure the currency of this qualification.

Please note: the relevance of the information contained in the **unit content** will vary depending upon the vehicle types being worked upon. The unit content is for guidance only and is not meant to be prescriptive.

TABLE OF CONTENT

IMI Entry Level 3 Diploma for the Introduction to Motor Vehicle Industry and Technologies

In order to achieve this qualification, learners must achieve the following;

Group A: All 5 Mandatory Units

Group B: 6 optional PSD Units

Group C: 11 optional Specialist Units

Group D: 2 optional Tools, Equipment & Materials Unit

Group E: 2 optional Level 1 Units.

TQT 372 – 499 hours

Group A – Mandatory Units

Unit Ref	Unit Title and ID Number	TQT	GL
ELMV01	Introduction to Health and Safety (K/507/8680)	21	18
ELMV02	Introduction to Careers in Transportation, Maintenance and Repair (M/507/8681)	19	14
ELMV03	Introduction to Hand Tools (T/507/8682)	19	16
ELMV04	Communication in the Motor Vehicle Environment (A/507/8683)	12	8
ELMV07	Introduction to Workshop Cleaning and Maintenance (L/507/8686)	15	11

Group B – PSD Units

Unit Ref	Unit Title and ID Number	TQT	GL
ELMV05	Working With Others in the Motor Vehicle Environment (F/507/8684)	15	11
ELMV06	Identifying Straightforward Problems in an Automotive Environment (J/507/8685)	15	11
ELMV08	Introduction to Recording Information (R/507/8687)	10	9
ELMV09	Introduction to Motor Vehicle Associated Skills (Y/507/8688)	18	14
ELMV10	Reducing the Effects of Vehicles on the Environment (D/507/8689)	17	13
ELMV11	Preparing for an Interview (R/507/8690)	17	13
ELMV12	CV Writing Skills (Y/507/8691)	15	10

Group C – Specialist Units

Unit Ref	Unit Title and ID Number	TQT	GL
ELMV13	Introduction to Engine Components and Operation (T/507/8729)	23	16
ELMV14	Introduction to Light Vehicle Steering and Suspension Systems (K/507/8730)	19	15
ELMV15	Introduction to Component Fitting (M/507/8731)	20	15
ELMV16	Routine Cooling and Lubrication System Checks (T/507/8732)	17	14
ELMV17	Routine Braking System Checks (A/507/8733)	17	13
ELMV18	Routine Wheel and Tyre Checks (F/507/8734)	18	15
ELMV19	Routine Vehicle Checks (J/507/8735)	18	15
ELMV20	Routine Vehicle Maintenance Processes and Procedures (L/507/8736)	22	17
ELMV21	Vehicle Driveline Maintenance (R/507/8737)	22	17
ELMV22	Spark Ignition System Maintenance (Y/507/8738)	18	13
ELMV23	Vehicle Lighting System Maintenance (D/507/8739)	20	15
ELMV24	Introduction to Spark Ignition Fuel Systems (R/507/8740)	16	12
ELMV25	Introduction to Compression Ignition Fuel Systems (Y/507/8741)	18	13
ELMV31	Introduction to Body Fitting (MET) (M/507/8695)	14	11
ELMV32	Introduction to Body and Paint Materials (T/507/8696)	15	11
ELMV33	Introduction to Metal Preparation (A/507/8697)	13	10
ELMV34	Introduction to Minor Dent Removal (F/507/8698)	13	10
ELMV35	Introduction to Mixing and Applying Body Filler (J/507/8699)	11	8
ELMV36	Introduction to Shaping Body Filler (M/507/8700)	15	11
ELMV37	Introduction to Joining Motor Vehicle Materials (T/507/8701)	16	11
ELMV38	Introduction to Applying Aerosol Primers (A/507/8702)	15	10
ELMV39	Introduction to Preparing Primer to Accept Topcoat (F/507/8703)	12	9
ELMV40	Introduction to Masking Materials and Techniques (J/507/8704)	13	10
ELMV41	Introduction to Applying Aerosol Topcoats (L/507/8705)	13	9
ELMV42	Introduction to Basic Paint Defects (R/507/8706)	12	9
ELMV43	Introduction to Improving the Final Finish (Y/507/8707)	10	7
ELMV46	Introduction to Motorcycle Engine Components and Operation (M/507/8728)	21	16
ELMV47	Introduction to Motorcycle Steering and Suspension Systems (H/507/8712)	18	15
ELMV48	Introduction to Motorcycle Component Fitting (K/507/8713)	19	15
ELMV49	Motorcycle Routine Cooling and Lubrication System Checks (M/507/8714)	17	14
ELMV50	Motorcycle Routine Braking System Checks (T/507/8715)	17	15
ELMV51	Motorcycle Routine Wheel and Tyre Checks (A/507/8716)	18	15
ELMV52	Introduction to Motorcycle Construction (F/507/8717)	15	11
ELMV53	Routine Motorcycle Checks (J/507/8718)	17	14
ELMV44	Cleaning a Vehicle Exterior (D/507/8708)	12	9
ELMV45	Cleaning a Vehicle Interior (K/507/8727)	15	11
ELMV59	Cleaning a Motorcycle (R/507/9421)	13	9

Group D – Tools, Equipment & Materials

Unit Ref	Unit Title and ID Number	TQT	GL
ELMV26	Introduction to Workshop Equipment (D/507/8742)	18	14
ELMV27	Introduction to Vehicle Construction and Body Shapes (H/507/8743)	18	14
ELMV28	Introduction to Recognising Vehicle Materials (D/507/8692)	12	9
ELMV29	Introduction to Body Repair Tools and Equipment (H/507/8693)	15	11
ELMV30	Introduction to Paint Refinishing Tools and Equipment (K/507/8694)	16	11

Group E – Level 1 Optional Units (minimum 2 to be selected for Diploma)

Unit Ref	Unit Title and ID Number	TQT	GL
L1MV19	Spark Ignition Engine System Components and Operation (A/507/9400)	30	22
L1MV20	Compression Ignition Engine System Components and Operation (F/507/9401)	30	22
L1MV44	Motorcycle Fuel System Maintenance (H/507/8726)	29	21
L1MV47	Electrical Foundation Skills (J/507/9402)	29	21
L1MV51	Vehicle Paint Preparation (H/507/8709)	18	13
L1MV68	Remove and Replace Interior and Exterior Trim (L/507/9403)	26	18
L1MV73	Introduction to MAG Welding (Y/507/8710)	22	18

UNIT REF: ELMV01	UNIT TITLE: INTRODUCTION TO HEALTH AND SAFETY

Level: Entry Level 3	GL: 18	TQT: 21
Overview: This unit will provide the learner with the knowledge and understanding of workshop health and safety practices and a range of personal protective equipment, used in the transportation and Motor industry.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know personal protective equipment that is suitable for specific motor vehicle related tasks	1.1. List personal protective equipment which is appropriate for motor vehicle and transportation related tasks
2. Know the meaning of common motor vehicle workshop safety signs	2.1. Identify the meaning of common safety signs in a workshop environment
3. Know workshop emergency evacuation procedures	3.1. List the correct stages of an emergency evacuation Procedure 3.2. Locate emergency exits
4. Know unsafe workshop practices	4.1. Give examples of unsafe workshop practices
5. Be able to demonstrate safe working practices	5.1. Follow safe working practices and instructions 5.2. Select and wear correct personal protective equipment

Evidence Requirements
Your assessor must observe you completing the following task on one occasion.
Following safe working practices and instructions during a mock emergency evacuation.

Unit Content	Assessment Criteria
Personal Protective Equipment to include: • PPE and safety equipment checks • Footwear • Overalls/clothing • Gloves • Eye protection • Ear protection • Face protection • Skin protection • Masks/respirator • Head protection • Correctly fitting clothing • Clothing specifically designed for the task	1.1
Workshop safety signs to include: • Mandatory • Prohibition • Fire • General safety • Warning • Colours and meanings	2.1
Emergency Evacuation Procedures • Emergency exit location • Procedures • Good and bad practices • Assembly points	3.1, 3.2
Workshop Safety • Hazards and risks • Safe working practices • Examples of good and bad practice • Following instructions and equipment guidelines for use	4.1

UNIT REF: ELMV02	UNIT TITLE: INTRODUCTION TO CAREERS IN TRANSPORTATION, MAINTENANCE AND REPAIR

Level: Entry Level 3	GL: 14	TQT: 19
Overview: This unit will enable the learner to recognise automotive charities, job roles and careers in a range of industries, which involve the use of transportation. The learner will use the knowledge to pursue training and careers within an area of interest.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the purpose of the automotive charity BEN	1.1. Identify the purpose of the Automotive Charity, BEN 1.2. Outline how BEN can help employees in the automotive and transportation sector
2. Know different types of transportation	2.1. Identify different types of transportation
3. Know services and industries which uses transportation	3.1. List services and industries which uses transportation
4. Know of different careers paths in the transportation industry	4.1. List different career paths within the transportation industry 4.2. Define job titles/roles
5. Know how to locate career guidance information for job roles	5.1. Use simple research methods 5.2. Locate career information 5.3. Use career information for personal development

Unit Content	Assessment Criteria
Recognise the Automotive Charity BEN to include: • Purpose – They provide support and advice to people in the automotive / transportation industries, • Who the charity supports • What they support: welfare, illness, money and relationship worries, stress, relationship problems etc. • Provide help with care and retirement living • Include the charity website address and social media links to raise awareness	1.1, 1.2
Types of transportation to include: • Cars • Golf cars, mobility scooters and electrical transport • Prisoner transport vehicles, response cars and ambulances • Off –road vehicles, • Motorcycles • Trucks and buses • Plant equipment • Cleaning vehicles – drains and road sweepers • Racing and rally cars • Specialist vehicles, hearses and armoured cars • Classic and heritage vehicles • Trams • Agricultural	2.1
Services and industries which use transportation includes: (this list can be extended to fit different routes) • Tour operators • Emergency services • Armed services • Breakdown services • Lease hire companies • Wedding and funeral services • Building and construction • Couriers • Logistic/transport companies • Taxi services	3.1
Career paths and job roles to include: • **Light Vehicle Technician** Mechanical Technician and Electrical Technician, Designer • **Heavy vehicles –** Mechanical Technician, Body Builder/Panel Technician Electrical Technician and Paint Sprayer • **Plant equipment –** Mechanical Technician and Electrical Technician • **Accident repair –** Paint sprayer, Panel Technician, MET Technician, Damage Assessor, Valeter, Preparation Technician and Administrator • **Vehicle restoration-** Paint sprayer, Panel Technician, Mechanical Technician Valeter, Preparation Technician, Electrical Technician • and Administrator • **Vehicle sales/finance –** Sales person • **Parts –** Parts person • **Service –** meet and greet and customer service	4.1, 4.2
Locate career guidance information for job roles to include: • How to carry out simple research methods • Locating reliable career guidance information • How to use career information for personal development and progression	5.1-5.3

UNIT REF: ELMV03	UNIT TITLE: INTRODUCTION TO HAND TOOLS

Level: Entry Level 3	GL: 16	TQT: 19
Overview: This unit will enable the learner to recognise general workshop hand tools and become familiar with their use. The tools referred to in this unit are transferable across all the disciplines in this qualification and can be referenced to other units. The learner may demonstrate the use of the tools by completing a project.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to select the correct PPE when using hand tools	1.1. Identify the correct PPE required for different tasks involving hand tools
2. Know a range of workshop tools and equipment	2.1. Recognise the following tools: a. Inspection light b. Cutting pliers c. Pliers d. Locking pliers e. Spanners f. Screwdrivers g. Sockets h. Ratchet i. Ball-pein hammer j. Hack saws k. File l. Trim removal tool m. Hand drill - electric or pneumatic n. Drill bits 2.2. State simple uses for the above tools
3. Be able to use hand tools	3.1. Identify faults or defects, during routine checks 3.2. Demonstrate the use of all the listed tools 3.3. Locate storage areas and return the tools to the correct place

Evidence Requirements
Your assessor must observe you completing the following tasks:
Check **two** of the listed hand tools for faults and defects
Use **three** of the listed hand tools.
Tools
Inspection light
Locking pliers
Spanners
Sockets
Ratchet
Trim removal tool
Hack saw

Unit Content	Assessment Criteria
PPE for the workshop include: • Overalls • Boots • Skin protection • Eye protection • Ear protection **Include safe working practices specific to this unit**	1.1
Identify and state the use of workshop tools and equipment to include: • Inspection light - to aid viewing in dark and confined areas • Cutting pliers - cutting cable ties and wire • Pliers - gripping • Locking pliers - clamping and gripping • Spanners - tightening and loosening nuts and bolts • Screwdrivers - tightening and loosening screw head type fixings • Sockets - tightening and loosening nuts and bolts • Ratchet - fitting to a socket and applying leverage • Ball-pein hammer - shaping and striking • Hack saws - cutting metals and plastics • File - shaping and removing metal burrs • Trim removal tool - removing trim clips • Hand drill – electric, battery or pneumatic - attaching to a drill bit or cleaning tool • Drill bits - to drill different sized holes	2.1, 2.2

UNIT REF: ELMV04	UNIT TITLE: COMMUNICATION IN THE MOTOR VEHICLE ENVIRONMENT

Level: Entry Level 3	GL: 8	TQT: 12
Overview: This unit will enable the learner to gain the knowledge and skills to successfully use the appropriate communication methods, within a motor vehicle environment. The learner will recognise appropriate types of communication for given situations and gain confidence through interaction.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know methods of communication used in a motor vehicle environment	1.1. State the importance of effective/good communication in the motor vehicle environment 1.2. List methods of communication used in a motor vehicle environment 1.3. State the advantages and disadvantages of different communication methods 1.4. Give examples of poor communication in the motor vehicle environment
2. Be able to use methods of communication in the motor vehicle environment	2.1. Use methods of communication which are appropriate for the motor vehicle environment, to include: a. Short written communication b. Simple oral communication 2.2. Demonstrate appropriate personal appearance and body language
3. Be able to develop communication skills	3.1. Identify, through self-assessment, how to improve communication skills

Evidence Requirements
Your assessor must observe you effectively communicating in an automotive environment on one occasion. Select one of the choices from the list below:
One to one conversation with an instructor or supervisor
Providing short written communication or feedback

Unit Content	Assessment Criteria
Importance of effective communication to include: • Preventing misunderstanding/ interpreting information • Preventing ill-feelings amongst colleagues • Motivating others **Methods of communication used in the motor vehicle environment to include:** • Email • Text • Memo • Letter • Job card • Pay slips • Information posters • Video link • Telephone • Business card • Body language • Verbal • Social Media **Communication advantages and disadvantages to include:** • 247/365 communication • Cost factors • International opportunities • Security issues • Convenience / speed • What is appropriate? For example, terminating employment by text message (not appropriate) **Techniques in written and oral communication to include:** • Use appropriate language • Avoiding content and information overload • Positive communication and the choice of words • Presentation, grammar, punctuation and layout • Being friendly • Thinking before speaking • Being clear • Speaking with confidence **Developing communication skills to include:** • Listening skills • Awareness of others feelings • Use of practise exercises • Recognising areas to improve • Being positive • Using scripts • Removing distractions • Taking note of others experiences	1.1, 1.4

UNIT REF: ELMV07	UNIT TITLE: INTRODUCTION TO WORKSHOP CLEANING AND MAINTENANCE

Level: Entry Level 3	GL: 11	TQT: 15
Overview: This unit will provide the knowledge and skills to clean a vehicle workshop. The learner will be able to identify suitable tools and methods of cleaning. The learner will also recognise the reasons for cleaning the work area and demonstrate how to leave them in a safe condition.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to select the correct PPE when cleaning workshop areas	1.1. Identify PPE required to carry out cleaning activities
2. Know the reasons for cleaning and tidying the workshop	2.1. List reasons for cleaning and tidying the workshop 2.2. State the likely hazards and risks which will result from an unclean and untidy workshop
3. Know tools and equipment which are used for cleaning the workshop	3.1. List tools and equipment used during the cleaning of a workshop 3.2. Identify tools and equipment which have a specific task
4. Be able to clean the work area and leave it in a safe condition	4.1. Wear the correct PPE and work safely throughout the task 4.2. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
Your assessor must observe you on one occasion:
Using the appropriate equipment and methods to clean the work area and leaving it in a safe condition

Unit Content	Assessment Criteria
Reasons for cleaning and tidying the workshop to include: • Returning items to their place • Safely storing items • Cleaning of benches and machinery • Cleaning spillages • Organising clutter • Removing scrap material/components • Monitor and dispose of waste materials, oil, rags, tins, etc.	1.1, 1.2
Tools and equipment used for cleaning the workshop, to include: • Sweeping brushes and dust pans/shovels - floors • Hand brush and dust pan – machines and benches • Industrial vacuum cleaner - floors and machinery • Spillage kit – floors and benches • Cleaning agents dispensers • Cleaning cloths – machinery, sanders, hand tools, vices, etc.	2.1, 2.2

UNIT REF: ELMV05	UNIT TITLE: WORKING WITH OTHERS IN THE MOTOR VEHICLE ENVIRONMENT

Level: Entry Level 3	GL: 11	TQT: 15
Overview: This unit will enable the learner to gain the knowledge and skills to work with other people and recognise their own role. Learners will review their progress, development and contribute to conversations concerning their specific role.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the key individuals and roles within the organisation	1.1. Identify responsibilities you have in your personal job role 1.2. List the names of people who can provide help and assistance 1.3. Identify the person to report to when experiencing difficulties
2. Know areas of communication that present personal fears or requires improvement	2.1. Give examples of communication fears or areas that require improvement 2.2. List areas of communication which require development
3. Know how to listen and respond to others in a motor vehicle environment	3.1. Give examples of how to respond to requests in a suitable manner
4. Know how to work with others in the motor vehicle environment	4.1. Outline the benefits of working with others in a motor vehicle/transport environment 4.2. Give examples of working with others in a motor vehicle/transport environment
5. Be able to work with others	5.1. Demonstrate carrying out instructions from the person responsible 5.2. Take part in a one to one conversation, which is associated with the motor vehicle / transport industry 5.3. Take a message and deliver it accurately

Evidence Requirements
You must be observed by your assessor completing at least one of the following tasks on at least one occasion:
Working effectively whilst working in a team on an automotive task / job
Working with distributors or suppliers for example assisting the unloading or organising of deliveries
Taking a message and delivering it accurately

Unit Content	Assessment Criteria
Roles to include: • Recognising own role, responsibility and limitations • Knowing the company structure • Trainees/apprentices – examples of jobs/tasks that can be undertaken • Reporting to specific people in the workplace - Line Manager, Supervisor or Mentor.	1.1-1.3
Communication, fears and self-assessment to include: • Fears- communicating with people who are unfamiliar, communicating in front of others, nerves, not enough knowledge of a subject and fear of being judged. • Self-assessment advantages • How to develop communication skills – observation of others, training/exercises	2.1,2.2
Listening and communication skills to include: • Focussing on the listener • Avoid interrupting • Not judging the speaker • Showing interest • Be friendly and positive • Demonstrating good posture and body language	3.1
Working with others to include: **Following instructions:** • Taking notes • Checking understanding is correct • Working efficiently • Completing tasks/jobs within the agreed timescale • Asking for assistance if require • Reviewing work carried out **Benefits of working with others:** • Support and guidance • Different approaches /thinking • Safety reasons • Assistance with large components and panels • Efficiency on larger vehicles, commercials, bus coach and plant equipment • Working in confined spaces **Examples of working with others:** • Large tasks • Moving large components • Fitting large body panels • Accessing the rear of a fixing • Safety reasons – not working alone • A second opinion/view • Checking vehicle lights while another person operates the controls • Operating vehicle controls for a Technician who is checking a system • Assisting in unloading deliveries • Taking a message	4.1-4.2

UNIT REF: ELMV06	UNIT TITLE: IDENTIFYING STRAIGHTFORWARD PROBLEMS IN AN AUTOMOTIVE ENVIRONMENT

Level: Entry Level 3	GL: 11	TQT: 15
Overview: This unit will provide the knowledge and skills to enable the learner to identify and address straightforward workplace problems.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to identify work-based problems	1.1. List examples of work-based problems to include: a. People b. Tasks c. Resources/materials
2. Know who to speak to if you have a problem	2.1. Locate help and guidance to deal with work-based problems
3. Be able to solve straightforward problems	3.1. Take steps to solve a straightforward problem in an automotive environment

Evidence Requirements
You must be observed by your assessor solving one of the following straightforward problems in an automotive environment on at least one occasion.
Solving a problem which involves people / colleagues
Solving a problem which involves materials or consumables
Solving a problem which involves a job role
Solving a problem which involves an automotive task

Unit Content	Assessment Criteria
Identifying work based problems to include: • People – disagreements, being treated unfairly, misconduct, discrimination and harassment • Tasks – exceeding expected timescales, problems completing or starting a task, lack of confidence to start a task, levels of coaching and training to enable trainees to progress • Resources/materials – problems with PPE, running out of stock, stocks not available and delays in parts and consumables • **Finding solutions to problems to include:** • Talking about the problem • Dealing with problems as they arise • Sticking to the solid facts • Listening to others points of view • Identify who can assist with the problem • Following the correct procedures • Human Resources departments • Find solutions	1.1
Help and guidance with problems to include: • Training / company handbook • Company / training organisation procedures • Citizens Advice Bureau	2.1

UNIT REF: ELMV08	UNIT TITLE: INTRODUCTION TO RECORDING INFORMATION

Level: Entry Level 3	GL: 9	TQT: 10
Overview: This unit will introduce the learners to recording simple information. The learner will recognise the importance of recording accurate information in a motor vehicle / transport related environment.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the importance of recording information	1.1. List the reasons why the recording of information is important 1.2. Identify types of information which is recorded in a vehicle / transport environment
2. Be able to record vehicle related information	2.1. Locate appropriate information 2.2. Demonstrate the recording of information

Evidence Requirements
You must be observed by your assessor recording information in an automotive environment **on at least one occasion.** Select **one** of the choices from the list below:
completing a job card
completing a checklist, for example, vehicle lighting or existing body damage
recording vehicle details

Unit Content	Assessment Criteria
The importance of recording information to include: • Legal requirements • A record of work, faults and payments • Evidence for customers that complain or make a claim • For returning customers **Types of recorded information includes:** • Vehicle details • Customer details • Technical information • Insurance company details • Work carried out and advisories **Recording information to include:** • Double-checking the information is accurate • The information is in the right place • The information is clear • The information is stored and secure	1.1, 1.2

UNIT REF: ELMV09	UNIT TITLE: INTRODUCTION TO MOTOR VEHICLE ASSOCIATED SKILLS

Level: Entry Level 3	GL: 14	TQT: 18
Overview: This unit will provide the learner with the knowledge and skills to use measurements and simple calculations to assist the accurate fitting of a small vehicle transfer/decal to an A4 sized, flat, painted panel.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to carry out simple measurements	1.1. Identify millimetres and centimetres 1.2. State how to find the central point of a small painted panel
2. Know the process of fitting a transfer to a painted panel	2.1. Identify the tools which are used to aid the fitting of a transfer to a painted panel 2.2. List the process of fitting a transfer to a painted panel
3. Know faults that can occur when fitting a transfer	3.1. Identify faults that may occur when fitting transfer / decal
4. Be able to apply a transfer to a painted panel	4.1. Locate the central point of the panel and the transfer/decal 4.2. Demonstrate how to fit a transfer/decal to a painted panel 4.3. Demonstrate how to rectify transfer / decal application faults, such as creases and air bubbles 4.4. Wear the correct PPE and work safely throughout the task

Evidence Requirements
You **must be observed by your assessor** carrying out **all** of the tasks listed below on **at least one occasion:**
accurately measuring and marking out the position of the decal / transfer
applying the decal / transfer to a panel
correcting any faults, such as air bubbles

Unit Content	Assessment Criteria
Carrying out simple measurements to include: • Using millimetres and centimetres • Techniques to find the centre of a flat, equal panel **Measuring /fitting tools to include:** • Rule • Chalk and chalk line • Water-based pencils • String • Squeegee • Water spray bottle • Cleaning cloth • Absorbent cloth	1.1,1.2
The transfer/decal fitting process to include: • Cleaning the panel • Marking out techniques • Dry and wet processes/techniques • Positioning • Backing removal • Application techniques – use of squeegees • Application tape removal	2.1, 2.2
Transfer/decal application faults to include: • Air bubbles • Adhesion problems • Creases • Basic causes of faults and minor rectifications	3.1

UNIT REF: ELMV10	UNIT TITLE: REDUCING THE EFFECTS OF VEHICLES ON THE ENVIRONMENT

Level: Entry Level 3	GL: 13	TQT: 17
Overview: This unit will provide knowledge, which will enable the learner to identify different methods of powering vehicles. They will recognise the advantages and disadvantages of different power sources, their environmental effects and ways to reduce pollution.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the meaning of 'pollution'	1.1. Define the word 'pollution' 1.2. List two forms of pollution
2. Know vehicle power sources and how 'environmentally friendly' they are	2.1. List the most environmentally friendly methods of powering a vehicle 2.2. State the advantages of an electric vehicle when compared to a petrol vehicle 2.3. State the disadvantages of an electric vehicle when compared to a petrol vehicle
3. Know the names of modern vehicle systems and components which are designed to reduce pollution	3.1. Identify modern vehicle components which are designed to reduce pollution 3.2. Outline the basic tasks of modern vehicle systems and components which are designed to reduce pollution
4. Know how to help reduce pollution	4.1. List simple everyday methods that will reduce pollution

Unit Content	Assessment Criteria
Pollution to include: • A basic definition **Types of pollution:** • Air quality • Noise	1.1,1.2
Vehicle power sources to include: • Petrol • Diesel • Hybrid • Electric • Putting the power sources in order, starting with the cleanest first. • Comparing a petrol power source to an electric power source • The advantages and disadvantages of vehicle power sources	2.1-2.3
Modern vehicle systems and technology which reduces pollution to include: • Low noise road surfaces • Low noise tyres • Start-stop technology • Catalytic convertor • Cleaner burning fuels • Exhaust filtration systems **Outline the task/function of the above systems and technology**	3.1-3.2

Unit Content	Assessment Criteria
Everyday methods that help reduce pollution to include: • Smaller vehicle • Buying a vehicle that is fit for purpose • Looking at emission figures • Using as few systems as possible – heated windows and air-conditioning • Turning the engine off when in a traffic queue (or use stop-start technology) • Sharing journeys • Keeping noise levels low • Driving gently • Taking unnecessary weight out of the vehicle • Avoiding short journeys • Servicing and maintain the vehicle • Reducing driving / acceleration speeds	4.1

UNIT REF: ELMV11	UNIT TITLE: PREPARING FOR AN INTERVIEW

Level: Entry Level 3	GL: 13	TQT: 17
Overview: The knowledge and skills in this unit will enable the learner to prepare for an interview and aid them in gaining entry to employment. Mock interviews will be used within this unit to build confidence and self-esteem.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the requirements of the job role	1.1. Identify the skills, knowledge and experience required for a job role
2. Know how to dress for an interview	2.1. Identify the appropriate clothing required for a formal interview
3. Know how to plan your journey to an interview	3.1. Identify the time and location of the interview 3.2. Identify the route and mode of transport 3.3. Identify how to arrive early
4. Know how to prepare for an interview	4.1. Identify key information about the company 4.2. Identify common questions which are asked during interviews 4.3. Practice answering questions which may be asked in an interview or mock interview
5. Be able to ask questions	5.1. Prepare questions to ask at the interview 5.2. Ask questions in a professional manner
6. Be able to provide a self-assessment after an interview/mock interview	6.1. Give examples of : a. strengths b. things that can be improved on

Evidence Requirements
You must be observed by your assessor on at least one occasion participating in a short mock interview

Unit Content	Assessment Criteria
Identifying skills and knowledge for job roles, to include: • Job description • Comparing personal skills and knowledge with job descriptions • Suitability • Planning to meet the job specification • How experience, interests and skills fit the organisation	1.1
Personal appearance to include: • Deciding what to wear • Checking specific dress code • Trying clothes on and preparing them the night before • Suits and business wear, options, comfort and suitable footwear • Personal presentation – company expectations	2.1
Plan your journey to an interview to include: • Checking and confirming times and location • Plan the day, journey, modes of transport and arriving early	3.1, 3.3
Preparing for the interview to include: • Things to take: Invitation/letter, certificates, note pad, pen, data storage. • Phone on silent mode • Research for the job role and the organisation • Plan how to demonstrate that skills and knowledge fit the job role and company mission • Identify and prepare for likely questions • Rehearse and practise answering the likely questions • Asking for feedback and advice • Practising mock interview situations • Techniques to control nerves: breathing, thinking time, cue cards, notes, relate experience to practical situations **Asking questions at interviews to include:** • Plan 'open' questions • Good and bad question examples • Asking questions about related topics • Asking questions that have a purpose • Using simple language • Linking/relating questions to the interview • Listening to answers **Assessing interview performance to include:** • Reviewing performance and the benefits • Reviewing strengths, developing and improving • Importance of self-assessment • Importance of feedback • Methods of building confidence and self-esteem	4.1, 4.3

UNIT REF: ELMV12	UNIT TITLE: CV WRITING SKILLS

Level: Entry Level 3	GL: 10	TQT: 15
Overview: The aim of this unit is to provide the learner with the knowledge and skills to complete a Curriculum Vitae in preparation for employment. The learner will produce the CV on a computer using a prepared template.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the purpose of a Curriculum Vitae (CV)	1.1. State the purpose of a CV
2. Know information required on a CV	2.1. List information required for a CV 2.2. Identify two suitable people to provide a reference
3. Be able to produce a CV using a prepared template	3.1. Use a computer to produce a CV on a prepared template 3.2. Use a computer to save the CV onto a secure Format 3.3. Demonstrate how to shut down the computer
4. Be able to work safely	4.1. Use the PC and associated equipment safely 4.2. Leave the work area in a clean and tidy condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
using appropriate computer programmes to produce a CV

Unit Content	Assessment Criteria
The purpose of a CV to include: To provide a brief account of your: • career • education/training • experience	1.1
CV information to include: • Personal details • Personal profile • Employment history and work experience • Education and training • Interests and achievement • Additional information • References • Define references and their suitability	2.1, 2.2

UNIT REF: ELMV13	UNIT TITLE: INTRODUCTION TO ENGINE COMPONENTS AND OPERATION

Level: Entry Level 3	GL: 16 Hours	TQT: 23 Hours
Overview: In this unit learners will investigate the main components of an engine and the operating principles of the four stroke internal combustion engine.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on engines
2. Know about four stroke internal combustion engines	2.1. Demonstrate simple understanding of the four stroke cycle 2.2. Identify the main engine components
3. Be able to remove and refit simple four stroke engine components	3.1. Demonstrate how to remove and refit a range of simple engine components from a (non-running) stand engine 3.2. Demonstrate the correct use of tools and equipment

Evidence Requirements
You must be observed by your assessor removing and refitting all of the components listed below on at least one occasion:
Rocker/Camshaft cover
Timing belt/chain cover
Sump
Alternator
Flywheel
Starter motor

Unit Content	Assessment Criteria
The four stroke cycle is • induction • compression • power • exhaust **The main engine components to include:** • crankshaft • connecting rods • pistons • crankcase • cylinder head • camshaft • valves • cambelt (or chain)	2.1, 2.2

UNIT REF: ELMV14	UNIT TITLE: INTRODUCTION TO LIGHT VEHICLE STEERING AND SUSPENSION SYSTEMS

Level: Entry Level 3	GL: 15 Hours	TQT: 19 Hours
Overview: In this unit the learner will find out about the principles of steering and suspension and how to carry out simple checks on these systems, following all relevant safety precautions.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on steering and suspension systems
2. Know about steering systems	2.1. State the function of the steering system 2.2. State in simple terms how the driver converts effort in to force to turn the wheels 2.3. Identify the main components of a light vehicle steering system to include: a. Steering wheel b. Steering column c. Steering gear d. Track rods
3. Be able to carry out simple checks to steering systems	3.1. Demonstrate how to check a steering rack bellows for damage 3.2. Demonstrate how to check and top-up power assisted steering fluid level 3.3. Demonstrate how to check the front wheel alignment of a light vehicle using simple equipment
4. Know about suspension systems	4.1. State the function of suspension systems 4.2. Identify the main components of light vehicle suspension systems
5. Be able to carry out simple checks on suspension systems	5.1. Demonstrate how to check suspension dampers for leakage 5.2. Demonstrate how to carry out a bump test to check the dampers condition

Evidence Requirements
You must be observed by your assessor performing all the checks identified below on a vehicle suspension system on at least one occasion:
Carry out a 'bump' test to check the dampers condition
Check the suspension system for leaks

Unit Content	Assessment Criteria
Functions of steering systems to include: • rotary movement at the steering wheel turned into linear movement at the wheels • be light and easy to operate **How the driver converts effort into force to turn the wheels to include:** • rotary movement at the steering wheel turned into linear movement at the wheels • how gearing is used to decrease drivers effort **The main components of a light vehicle steering system to include:** • steering wheel • steering column • steering gear • track rods	2.1, 2.2, 2.3
Functions of suspension systems to include • to provide a safe and pleasant ride for the car occupants • to provide positive steering and handling of the vehicle • to enable the driver to be in full control of the vehicle under all conditions **The main components of light vehicle suspension system to include:** • telescopic dampers • leaf springs • coil springs • torsion bars • McPherson strut • anti roll bars • suspension arms	4.1, 4.2

UNIT REF: ELMV15	UNIT TITLE: INTRODUCTION TO COMPONENT FITTING

Level: Entry Level 3	GL: 15	TQT: 20 hours
Overview: In this unit the learner will learn how to remove and replace mechanical, electrical and trim components which are often required as part of other work carried out on motor vehicles.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on removing and refitting body, electrical and trim components
2. Be able to correctly remove and refit basic body components	2.1. Demonstrate the removal and refitting of body components
3. Be able to correctly remove and refit basic trim components	3.1. Demonstrate the removal and refitting of trim components
4. Know how to correctly remove and replace simple electrical system components	4.1. State the correct methods to isolate electrical components before removal and refitting 4.2. State how to select the correct fuse for replacement 4.3. State the correct methods for disconnecting and reconnecting batteries
5. Be able to correctly remove and refit basic electrical components	5.1. Demonstrate the removal and refitting of electrical components.

Evidence Requirements
You must be observed by your assessor removing and refitting two of the following body components listed below on at least one occasion:
Seat
Front bumper
Rear bumper
Bonnet
Boot
Under tray
You must be observed by your assessor removing and refitting two of the following trim components listed below on at least one occasion:
Interior door trim
Glove box
Boot/ tailgate trim
Door aperture seals
Rear seat base

Evidence Requirements Contd.
You must be observed by your assessor removing and refitting two of the following electrical components listed below on at least one occasion:
Battery
Headlight
Rear light
Instrument cluster
Rear wiper motor
Front fog lamp

Unit Content	Assessment Criteria
Personal protection equipment (PPE) and safe procedures to include: • overalls • gloves • protective footwear • goggles • precautions when using equipment • disposal of waste materials	1.1
The removal and refitting of body components to include three from: • seat • front bumper • rear bumper • bonnet • boot • under tray	2.1
The removal and refitting of trim components to include three from: • interior door trim • glove box • boot/tailgate trim • door aperture seals • rear seat base	3.1
The correct methods to isolate electrical components before removal and refitting to include: • turn off switch for component • remove key from ignition • inform others of work being carried out **Selecting the correct fuse for replacement to include:** • identify inoperative circuit • identify fuse from panel cover • remove fuse and identify rating • replace fuse with same rating • check operation of circuit **State the correct methods for disconnecting and reconnecting batteries to include:** • turn off all electrical consumers • remove key from ignition • ensure all radio codes etc recorded • disconnect negative lead first, then positive • reconnect positive first, then negative • re-instate electrical codes	4.1, 4.2, 4.3

Unit Content Contd.	Assessment Criteria
The removal and refitting of electrical components to include three from: • battery • headlight • rear light • instrument cluster • rear wiper motor • front fog lamp	5.1

UNIT REF: ELMV16	UNIT TITLE: ROUTINE COOLING AND LUBRICATION SYSTEM CHECKS

Level: Entry Level 3	GL: 14	TQT: 17
Overview: In this unit learners will learn about cooling and lubrication systems and how to carry out simple checks on each type of system. Learners will all be required to observe the necessary Health and Safety requirements whilst working on each system.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1 Use appropriate PPE and methods when working on engine cooling and lubrication systems
2. Know about cooling systems	2.1. Identify the main liquid cooling system components
3. Be able to check a cooling system	3.1. Demonstrate how to correctly check coolant level and top up if required 3.2. Demonstrate how to check the freezing point of coolant with a hydrometer 3.3. Check a cooling system for leaks
4. Know about engine lubrication systems	4.1. State why lubrication systems are required 4.2. Identify two lubrication system components
5. Be able to check a lubrication system	5.1. Demonstrate how to correctly check oil levels and top up if required 5.2. Identify the correct specification of oil from technical specifications 5.3. Check a lubrication system for leaks

Evidence Requirements
You must be observed by your assessor completing all the activities listed below on at least one occasion:
Check a cooling system level and top up if required
Check the coolant for anti-freeze content
Check the cooling system for leaks
Check engine oil level (top up if required)
Identify the correct specification of oil for the engine
Check the lubrication system for leaks

Unit Content	Assessment Criteria
Personal protection equipment (PPE) and safe procedures to include: • overalls • gloves • protective footwear • goggles • precautions when using equipment • disposal of waste materials	1.1
Identify the main liquid cooling system components: • radiator • pipes and hoses • pump • thermostat	2.1
How to correctly check coolant level and top up if required to include: • checking coolant temperature • visual inspection of level • slow removal of cap • top up to correct level • refit cap **Demonstrate how to check the freezing point of coolant with a hydrometer (floating ball type recommended) to include:** • take sample of coolant • check freezing point **Check a cooling system for leaks (No pressure testing equipment to be used):** • visual inspection of all main components	3.1, 3.2, 3.3
Why lubrication systems are required to include: • reduces friction • reduces wear • carries away metal and carbon particles • cools the surface **Identify two lubrication system components to include:** • oil filler cap • oil filter • dipstick • oil pick up • oil pump	4.1, 4.2
How to correctly check oil levels and top up if required to include: • check vehicle position • this is just a check not checking level after oil change • remove dipstick and clean • dip oil and check level • top up to correct level • recheck **Identify the correct specification of oil from technical specifications:** • check vehicle details • select appropriate data source • select correct data including oil type and quantity **Check a lubrication system for leaks to include:** • visual inspection of all main areas- engine stationary • visual inspection of all main areas- engine running	5.1, 5.2, 5.3

UNIT REF: ELMV17	UNIT TITLE: ROUTINE BRAKING SYSTEM CHECKS

Level: Entry Level 3	GL: 13	TQT: 17
Overview: In this unit the learner will learn about basic braking systems and checks required, following all relevant safety precautions.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on braking systems
2. Know about braking systems	2.1. State the function of a vehicle braking system 2.2. Identify the main components of a vehicle braking system
3. Be able to remove and replace simple brake components and carry out simple checks	3.1. Remove and refit a set of disc pads 3.2. Check operation of brake lights 3.3. Check and top-up brake fluid reservoir
4. Know how to dispose of braking system components	4.1. State how to dispose of brake friction materials 4.2. State how to dispose of brake fluid

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Remove and refit a set of disc brake pads.
Check the operation of the brake lights
Check and top up a brake fluid reservoir

Unit Content	Assessment Criteria
Function of the braking system on a vehicle: • To convert kinetic energy in to heat energy • To slow down the vehicle **Braking system main components to include:** • discs • calipers • brake pads • drums • brake shoes • wheel cylinders • master cylinder • flexible brake hoses • metal pipes • hand brake/parking brake mechanisms	2.1, 2.2
State how to dispose of brake friction materials: • disposal of pads and shoes **State how to dispose of brake fluid:** • disposal of brake fluid • clearing up spillages and disposal of absorbent materials	4.1, 4.2

UNIT REF: ELMV18	UNIT TITLE: ROUTINE WHEEL AND TYRE CHECKS

Level: Entry Level 3	GL: 15 Hours	TQT: 18 Hours
Overview: This unit introduces learners to the principles of wheels and tyres. It includes the identification of the wheels used on light vehicles and the different tyre types. The learner also covers the wheel and tyre terminology and markings.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when removing and refitting wheels
2. Know how wheels are constructed	2.1. Identify the common types of wheel used on light vehicles
3. Know tyre terminology	3.1. Identify the main markings and terminology associated with vehicle tyres
4. Be able to safely and correctly remove and refit road wheels	4.1. Select the correct tools, equipment and technical data used for removing and refitting wheels 4.2. State the safety precautions when removing and refitting wheels
5. Be able to check tyre pressure and tread depth	5.1. Demonstrate the correct sequence to check and correct tyre pressures 5.2. Demonstrate the correct methods to record tyre depths

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Remove and refit a road wheel
Check and correct tyre pressures
Check tyres, measure and record tread depths

Unit Content	Assessment Criteria
The common types of wheel used on light vehicles to include: • alloy wheels • pressed steel wheels • wire wheels • space saver wheels	2.1
The main markings and terminology associated with vehicle wheels and tyres to include: • tyre type • tyre size • speed rating • wheel diameter	3.1

UNIT REF: ELMV19	UNIT TITLE: ROUTINE VEHICLE CHECKS

Level: Entry Level 3	GL: 15 Hours	TQT: 18 Hours
Overview: This unit introduces learners to the principles, requirements and procedures for carrying out weekly and monthly vehicle checks. It includes the location and identification of appropriate maintenance specifications and procedures. The unit also introduces learners to the principles of carrying-out fundamental vehicle maintenance tasks. The unit is only concerned with common tools and equipment that do not require detailed training and does not include specialist commercial equipment.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know vehicle systems and components that require routine checks	1.1. Identify the vehicle systems and components that require routine checks 1.2. Identify the basic maintenance requirements for vehicle systems
2. Know the information and equipment required for vehicle maintenance checks	2.1. Identify the information required for vehicle maintenance 2.2. Identify the tools and equipment required for vehicle maintenance
3. Be able to safely and correctly carry out vehicle checks	3.1. Use safe working practices and correct methods of working 3.2. Use the appropriate personal protection equipment (PPE) required for vehicle checks 3.3. Demonstrate the correct sequence and procedure when carrying out vehicle checks

Evidence Requirements
You must be observed by your assessor completing the task listed below on at least one occasion:
Carry out a basic routine maintenance check on a vehicle using a logical sequence

Unit Content	Assessment Criteria
Vehicle systems and components that require routine maintenance to include: • engine compartment; battery, engine oil, engine coolant, drive belts, fluid levels • wheels and tyres • lighting system • driver and passenger area; seating, seat belts, horn, instruments, warning lamps • external components; door hinges, locks, mirrors, bodywork, paintwork • transmission; inspect for leakage **The maintenance requirements for vehicle systems to include:** • check engine oil condition and level • check engine oil filter condition and for leakage • checking and top-up fluid levels; windscreen washer, battery, clutch and brake fluid • checking and adjusting drive belts (alternator and water pump) • tyre condition, pressures and tread depth • operation of vehicle lamps and indicators • operation and condition of seat belts and seats • operation of instruments, horn and warning lamps • lubrication of door hinges and locks • operation and condition of door mirrors • condition of bodywork and paintwork • checking and top-up transmission levels	1.1, 1.2
The information required for vehicle maintenance to include: • vehicle make, model and VIN number • correct engine oil specifications • engine coolant specifications • brake and clutch fluid specifications • specifications for new components or fluids, bulbs, transmission lubricants **The tools and equipment required for vehicle maintenance to include:** • tyre tread gauge • tyre inflator • tyre pressure gauge • car jack or trolley jack • disposable cloths	2.1, 2.2

UNIT REF: ELMV20	UNIT TITLE: ROUTINE VEHICLE MAINTENANCE PROCESSES AND PROCEDURES

Level: Entry Level 3	GL: 17	TQT: 22
Overview: This unit introduces learners to the principles of routine vehicle maintenance on vehicles with 4 wheels or more. It requires learners to know the tools and equipment that would be used during routine vehicle maintenance. It also covers the procedures and methods that must be used to ensure this is carried out effectively. The final outcome of the unit is concerned with the learner being able to safely and correctly carry out routine vehicle maintenance.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE when carrying out routine vehicle maintenance 1.2. Use appropriate and safe working practices when carrying out routine vehicle maintenance
2. Know vehicle components and systems that require routine maintenance	2.1. Identify the main components and systems found on a modern vehicle that require routine maintenance 2.2. Show use of a logical approach to carrying out a maintenance check
3. Know routine maintenance requirements for vehicle systems and components	3.1. Locate the correct and appropriate sources of information, tools and equipment required to carry out basic routine vehicle maintenance

Evidence Requirements
You must be observed by your assessor completing the task below on at least one occasion:
Carry out routine vehicle maintenance

Unit Content	Assessment Criteria
Components that require routine inspection to include: • tyres – wear and condition • wheels – damage, buckling • brakes – wear, adjustment, fluid leaks, fluid level, corrosion of pipes, condition of hoses • steering and suspension – security of components, wear of joints, suspension damper • electrical – battery, alternator, warning lamps, front and rear wipers, horn • lighting – function of side and rear lamps, number plate lamp, headlamps, dip and main beam control, boot lamp (on and off), interior lamps, indicators, hazard lamps, front and rear fog lamps • engine compartment – washer fluid, brake fluid level, coolant leaks and level, oil leaks and level, bonnet release, battery, drive belts • transmission – clutch operation and adjustment, drive shafts, joints, rubber boots, fluid leaks • vehicle exterior – bodywork, paintwork, trim, doors and door locks, wing mirror condition • vehicle interior – seats (condition & adjustment), seat belts, driver controls, warning lamps, wing mirror operation **Use a Logical approach to carrying out a vehicle check :** • Move round the vehicle in a logical approach • Check all items on a competent check sheet • Check sheet is completed within an acceptable time	2.1, 2.2
Information, tools and equipment to include: • vehicle specifications and data • vehicle manufacturer's inspection requirements • vehicle manuals • vehicle inspection check lists • trolley jack and axle stands • vehicle lifting equipment • spanners and sockets • torque wrench • screwdrivers • levers and bars • inspection lamps • tyre tread depth indicator • measurement tools	3.1

UNIT REF: ELMV21	UNIT TITLE: VEHICLE DRIVELINE MAINTENANCE

Level: Entry Level 3	GL: 17	TQT: 22
Overview: This unit introduces the learner to vehicle transmission systems and covers the basic identification of the major items of the unit and their function. It also allows the learner to use workshop manuals to locate specific data.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE when working on vehicle drivelines 1.2. Use appropriate and safe working practices when working on vehicle drivelines
2. Know about vehicle drivelines	2.1. Identify the different driveline system components fitted to a vehicle
3. Know about vehicle gearboxes	3.1. Identify a range of simple manual gearbox and clutch components
4. Be able to carry out routine maintenance checks on vehicle drivelines	4.1. Locate appropriate information and technical data for routine vehicle driveline maintenance 4.2. Demonstrate the correct procedures to check and top up the level in a manual gearbox 4.3. Check for fluid leaks on a vehicle driveline system

Evidence Requirements
You must be observed by your assessor completing all the tasks listed below on at least one occasion:
Check and top up the fluid levels in a manual gearbox.
Check for leaks on a vehicle driveline system

Unit Content	Assessment Criteria
The vehicle driveline includes : • drive shafts • gearbox • constant velocity joints • propeller shaft	2.1
The main components of a manual gearbox and clutch to include: • clutch plate • cover assembly • thrust bearing • casing • gears • selectors • flywheel • housing	3.1

UNIT REF: ELMV22	UNIT TITLE: SPARK IGNITION SYSTEM MAINTENANCE

Level: Entry Level 3	GL: 13 Hours	TQT: 18 Hours
Overview: In this unit the learner will find out about the main components of vehicle ignition systems, their construction and correct usage including the carrying out of practical activities regarding inspection and maintenance.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE when working on vehicle ignition systems 1.2. Use appropriate and safe working practices when working with high voltage vehicle ignition systems
2. Know about vehicle ignition systems	2.1. Identify the main components of a spark ignition system 2.2. Outline the purpose of each main component
3. Be able to replace vehicle ignition components	3.1. Remove and replace an ignition coil/coil pack 3.2. Select correct type of spark plugs for engine being worked on by using technical data 3.3. Set the spark plug electrode gaps to within manufacturer's tolerances 3.4. Remove and replace easily accessible spark plugs 3.5. Check correct engine operation and throttle response following the activity

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Removing and replacing an ignition coil
Select correct type of spark plugs for engine being worked on by using technical data
Set the spark plug electrode gaps to within manufacturer's tolerances
Remove and replace easily accessible spark plugs
Check correct engine operation and throttle response following the activity

Unit Content	Assessment Criteria
Main components of a vehicle ignition system to include: • ignition coils including coil on plug (COP), wasted spark coil packs • spark plugs • ECU • camshaft sensor • crankshaft sensor • knock sensor	2.1, 2.2, 2.3

UNIT REF: ELMV23	UNIT TITLE: VEHICLE LIGHTING SYSTEM MAINTENANCE

Level: Entry Level 3	GL: 15	TQT: 20
Overview: This unit introduces learners to the principles of vehicle lighting systems, components and operation. It covers identifying the main components used in vehicle lighting systems. The unit also introduces learners to the fundamental operating principles of vehicle lighting systems and components.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE when working on vehicle lighting systems 1.2. Use appropriate and safe working practices when working on vehicle lighting systems
2. Know vehicle lighting systems components	2.1. Identify different types of bulbs used on modern vehicles 2.2. State the colour of lamps that are legally required on a 4 wheeled vehicle
3. Be able to replace lighting system components	3.1. Demonstrate the correct method to replace a halogen headlamp 3.2. Demonstrate the correct method to replace a simple to access bulb 3.3. Carry out an operational test of all external lights 3.4. Locate a fuse size and bulb type using manufacturer's information

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Remove and replace a halogen headlamp bulb
Remove and replace a simple to access lighting bulb
Carry out an operational test of all vehicle external lights
Locate a fuse size and bulb type using manufacturer's information

Unit Content	Assessment Criteria
The main types of bulbs used on modern vehicles include: • cap less bulb • bayonet (capped) bulb • twin element • single element • LED	2.1
The colour of lamps that are legally required on a 4 wheeled vehicle include: • headlamp • side lamp • indicators • brake lights • rear lamps • reverse lamps • fog lamps • white • amber • Red • Yellow	2.2

UNIT REF: ELMV24	UNIT TITLE: INTRODUCTION TO SPARK IGNITION FUEL SYSTEMS

Level: Entry Level 3	GL: 12	TQT: 16
Overview: In this unit the learners will find out about the main components and the operating principles of vehicle fuel systems including routine maintenance procedures required for effective engine operation.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on spark ignition fuel systems
2. Know the components of spark ignition fuel systems	2.1. Identify the major parts of the spark ignition fuel system 2.2. State the precautions to be taken when working on spark ignition fuel systems
3. Be able to change air filters and visually check for fuel leaks	3.1. Change an engine air filter element 3.2. Perform visual check for fuel leakage
4. Know how to dispose of fuel system components and fluids	4.1. State how to clean up fuel spills 4.2. State how to dispose of fuel system components

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Changing an engine air filter element.
Performing a visual check for fuel leaks.

Unit Content	Assessment Criteria
The major parts of the fuel system of spark ignition engines to include: • fuel tank • fuel line • fuel filter • fuel pressurising system • fuel metering system • fuel delivery system • air intake and filtration	2.1
The safety factors to be considered when working with fuel systems to include: • fire precautions • exhaust fumes when running an engine in a workshop • handling and disposing of materials • preventing ingress of dirt, moisture and foreign matter	2.2
Appropriate ways to dispose of waste products in accordance with environmental guidance to include: • disposal of used air filters • disposal of contaminated or spilt fuel • clearing up spillages and disposal of absorbent materials	4.1

UNIT REF: ELMV25	UNIT TITLE: INTRODUCTION TO COMPRESSION IGNITION FUEL SYSTEMS

Level: Entry Level 3	GL: 13	TQT: 18
Overview: In this unit the learners will find out about the main components and the operating principles of vehicle fuel systems including routine maintenance procedures required for effective engine operation.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on compression ignition fuel systems
2. Know the components of compression ignition fuel systems	2.1. Identify the major parts of the compression ignition fuel system 2.2. State the precautions to be taken when working on compression ignition fuel systems
3. Be able to change air filters and visual check for fuel leaks	3.1. Change an engine air filter element 3.2. Remove and refit a compression ignition engine fuel filter cleaning up any spillages 3.3. Perform visual check for fuel leakage
4. Know how to dispose of fuel system components and fluids	4.1. State how to dispose of fuel system components

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Changing an engine air filter.
Removing and refitting a compression ignition engine fuel filter.
Performing a visual check for fuel leaks.

Unit Content	Assessment Criteria
The major parts of the fuel system of spark ignition engines to include: • fuel tank • fuel line • fuel filter • fuel pressurising system • fuel metering system • fuel delivery system • air intake and filtration The safety factors to be considered when working with fuel systems to include: • fire precautions • exhaust fumes when running an engine in a workshop • handling and disposing of materials • preventing ingress of dirt, moisture and foreign matter	2.1, 2.2
Appropriate ways to dispose of waste products in accordance with environmental guidance to include: • disposal of used air/fuel filters • disposal of contaminated or spilt fuel • clearing up spillages and disposal of absorbent materials	4.1

UNIT REF: ELMV31	UNIT TITLE: INTRODUCTION TO BODY FITTING (MET)

Level: Entry Level 3	GL:11	TQT: 14
Overview: This unit will provide the learners with the knowledge and skills to remove and refit an interior door card / trim and supporting systems from a training vehicle or rig. The learners will use simple diagrams and instruction sheets to identify the correct methods; they will recognise mechanical fixings and electrical connections which are part of interior door trims.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when carrying out body fitting tasks	1.1. Use appropriate PPE and work safely throughout the task
2. Know the process of removing and refitting a vehicle interior door card/trim and any system connections	2.1. Identify the process of removing and refitting a vehicle interior door card/trim and any system connections 2.2. Use diagrams and instructions to aid the process 2.3. State the importance of storing trims and fixings correctly
3. Know the correct tools for removing and refitting an interior door card/trim	3.1. Identify the tools required to remove and refit a range of fastenings on an interior door card/trim
4. Be able to remove and refit an interior door card/trim	4.1. Use the correct hand tools to remove and refit an interior door card/trim 4.2. Indicate when the trim and fittings are secure and aligned
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave in it a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Removing and refitting a vehicle interior door card / trim

Unit Content	Assessment Criteria
Process of removing and refitting an interior door card to include: • Instructions and sequence • Simple diagrams • Vehicle protection • Circuit isolation, disconnecting the battery • Keeping fixings safe • Cleanliness **Tools / equipment to include:** • Trim removal tools • Screwdrivers • Spanners • Ratchets and sockets • Pliers • Vehicle protection kits **Removal and refitting an interior door card/trim** • Techniques to remove mechanical fixings • Specific use of tools • Marking and labelling components, connections and wiring • Techniques in removing electrical connections and switches • Methods used to align interior door cards/trim • Techniques to minimise damage **Safe storage to include:** • Component protection • Storage boxes • Appropriate, organised storage areas	2.1, 2.3, 3.1

UNIT REF: ELMV32	UNIT TITLE: INTRODUCTION TO BODY AND PAINT MATERIALS

Level: Entry Level 3	Total Unit Hours: 15
Overview: This unit will enable the learners to identify a range of body and paint materials, which they will use within other body repair and paint refinishing units, throughout this qualification.	

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when using body and paint materials	1.1. Use appropriate PPE and work safely throughout the task
2. Know how to prepare body and paint materials for use	2.1. Identify a range of different body and paint materials / consumables 2.2. Give examples where the different materials are used
3. Be able to use body and paint materials	3.1. Demonstrate the use of body and paint materials
4. Be able to clean the work area and leave in it a safe condition	4.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor using all the body and paint materials listed below on at least one occasion:
Degreaser/panel wipe
Cleaning wipes
Polyester body filler
Body filler hardener
Common abrasives
Aerosol primers
Aerosol topcoats
Tack rag
Masking tape
Masking paper
Guide coat
Rubbing compound
Wax polish
Polishing cloths

Unit Content	Assessment Criteria
Body and paint materials identification: **Identify and state a use for :** • Degreaser/panel wipe • Cleaning wipes • Polyester body filler • Body filler hardener • Common abrasives • Aerosol primers • Aerosol topcoats • Tack rag • Masking tape • Masking paper • Guide coat • Rubbing compound • Wax polish • Polishing cloths • How to locate and interpret manufacturers' instructions and product information	2.1, 2.2

UNIT REF: ELMV33	UNIT TITLE: INTRODUCTION TO METAL PREPARATION

Level: Entry Level 3	GL: 10	TQT: 13
Overview: This unit will provide the learners with knowledge and skills to prepare an A4 sized, unpainted panel, to accept body filler and primers. Preparation of the steel surface will be achieved by using hand sanding methods.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when preparing metal panels	1.1. Use appropriate PPE and work safely throughout the task
2. Know the correct tools, equipment and consumables associated with metal preparation	2.1. Identify tools, equipment and consumables used in metal preparation 2.2. List the abrasive grades and type used in the preparation of metal
3. Know how to prepare a steel panel surface	3.1. State the methods which can be used to clean the panel surface 3.2. List the stages of preparation required for a steel panel to promote adhesion 3.3. State how to use tools, equipment and consumables to prepare the metal surface 3.4. Identify minor surface defects and damage
4. Be able to prepare the steel surface (by hand methods)	4.1. Demonstrate how to clean the panel surface 4.2. Demonstrate how to prepare a metal panel to promote adhesion 4.3. Use tools, equipment and consumables to prepare the metal surface 4.4. Demonstrate how to correct any minor surface defects and damage
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Using hand sanding methods to prepare the surface of an A4 size steel panel to accept body filler and primers

Unit Content	Assessment Criteria
Identification tools, equipment and consumables to include: • Degreaser • Hand pumps • Cleaning wipes • Scuff pads/scotchbrite • Sanding blocks • Common abrasive grades • Dust extraction **Consumable grades and types to include:** • P180 – P320 • Types – roll, sheeting, disc and pad ('Scotchbrite') **Metal preparation methods to include:** • Removal of dust and contaminants • Reasons for cleaning/degreasing • Degreasing techniques • Reasons for abrading bare metal • Abrasive selection • Preparation techniques • Use of tools, equipment and consumables • Types of surface defects and damage • Final cleaning and drying	2.1, 2.2, 3.1, 3.4

UNIT REF: ELMV34	UNIT TITLE: INTRODUCTION TO MINOR DENT REMOVAL

Level: Entry Level 3	GL: 10	TQT: 13
Overview: This unit will provide the learners with knowledge and skills to remove a minor dent in an A4 size, steel panel using basic hand tools.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when repairing dents	1.1. Use appropriate PPE and work safely throughout the task
2. Know how to identify the panel material	2.1. State simple methods to determine the panel material
3. Know the correct tools to repair dents	3.1. Identify the hand tools used to repair dents 3.2. State the purpose of and how to use a planishing hammer and dolly
4. Be able to use relevant tools and dent removal techniques	4.1. Demonstrate simple methods to determine the panel material 4.2. Demonstrate how to reshape the damage using suitable hand tools 4.3. Use techniques to prevent further damage
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Raising and reshaping a minor dent in a steel panel using the correct hand tools

Unit Content	Assessment Criteria
Material/Panel Identification to include: • Simple tests and inspection to identify steel panels, such as: appearance, evidence of rust, weight and proves magnetic	2.1
Purpose of and how to use a planishing hammer and dolly • Shaping metal • Supporting the panel • Removing minor damage • Raising the damaged area • Techniques in using the tools • Grip position and striking techniques	3.2

UNIT REF: ELMV35	UNIT TITLE: INTRODUCTION TO MIXING AND APPLYING BODY FILLER

Level: Entry Level 3	GL: 8	TQT: 11
Overview: This unit will provide the learners with knowledge and skills to be able to mix and apply body filler to a minor dent (5-10mm in diameter) on a flat, A4 size steel panel. The learner will use mixing tools, consumables and follow manufacturer's instructions.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when mixing and applying filler	1.1. Use appropriate PPE and work safely throughout the task
2. Know about body filling tools, equipment and consumables	2.1. Identify tools and equipment used in body filling 2.2. State the purpose of tools, equipment and consumables used in the body filling process
3. Know how to prepare before applying body filler	3.1. List the stages of surface preparation, before applying body filler 3.2. Identify the correct mixing ratio 3.3. State the importance of mixing body filler correctly
4. Be able to use Body filler:	4.1. Prepare a panel ready to accept body filler 4.2. Demonstrate how to mix body filler using suitable tools and equipment 4.3. Demonstrate how to apply body filler
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition 5.2. Dispose of waste materials correctly and safely

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Mixing and applying body filler to a minor dent

Unit Content	Assessment Criteria
Identification and the purpose of tools, equipment and consumables to include: • Spreader – applying body filler • Appropriate mixing board – a sound surface for mixing body filler and hardener • Polyester body filler – filling and shaping damaged and imperfections in vehicle panels • Hardener – mixes with the body filler and aids the chemical curing process • Protective sheeting – to cover panels, trim and the work surface	2.1, 2.2
Surface preparation • Cleaning methods • Abrasive selection and reasons for choices • Metal and preparation techniques • Sanding, abrasives and cleaning • Protecting surfaces	3.1

UNIT REF: ELMV36	UNIT TITLE: INTRODUCTION TO SHAPING BODY FILLER

Level: Entry Level 3	GL: 11	TQT: 15
Overview: This unit will provide the learners with the knowledge and skills to shape body filler, which has been applied to a minor dent (5-10mm in diameter) on a flat, A4 size, steel panel. The learners will perform hand sanding techniques, in conjunction with a small selection of abrasives.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when shaping body filler	1.1. Use appropriate PPE and work safely throughout the task
2. Know about tools and equipment associated with shaping body filler	2.1. Identify tools and equipment used when shaping body filler
3. Know how abrasives are graded and the order which they are used	3.1. Indicate how abrasives are graded 3.2. State the order that abrasives are used to achieve an acceptable repair
4. Know how to shape body filler	4.1. Identify appropriate techniques to use when shaping body filler
5. Be able to shape body filler	5.1. Use hand tools to abrade and reshape the filler to an acceptable finish 5.2. Demonstrate techniques which aid the shaping of body filler
6. Be able to clean the work area and leave it in a safe condition	6.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Using hand tools and appropriate techniques to reshape body filler to an acceptable finish

Unit Content	Assessment Criteria
Correct set up and selection of tools / equipment to include: • Selecting a suitable sanding block for the size of the repair • Connecting the extraction pipe correctly • Dust extraction unit, checks, operation and cleaning •	2.1
Correct abrasives to include: • Abrasive fixing methods • Knowing the difference between coarse abrasives and fine abrasives • Correct type of abrasive for use with extraction equipment • Order of use • Understanding the implications of using the incorrect abrasive • A selection of grades suitable for shaping body filler	3.1, 3.2
Shaping body filler to include: • Guide coats • Correct positioning of block to the panel surface • Correct motion / sanding technique • Sanding block selection • Checking the repair visually and by 'feel' • Determining high and low spots • Understanding when to apply more than one layer of body filler	4.1

UNIT REF: ELMV37	UNIT TITLE: INTRODUCTION TO JOINING MOTOR VEHICLE MATERIALS

Level: Entry Level 3	GL: 11	TQT: 16
Overview: This unit will provide the learners with the skills to join a selection of vehicle materials. Joining methods will include: adhesive and mechanical fixings. The learners will carry out joining methods on test pieces/coupons or tasks that meet the assessment criteria.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when joining motor vehicle materials	1.1. Use appropriate PPE and work safely throughout the task
2. Be able to join two pieces of steel using blind / 'pop' rivets	2.1. Select the tools and materials required to join two pieces of steel using blind/'pop' rivets 2.2. Demonstrate the joining of steel surfaces with blind/'pop' rivets
3. Be able to join two pieces of steel using self-tapping screws	3.1. Select the tools and materials required to join two pieces of steel using self-tapping screws 3.2. Demonstrate the joining of two pieces of steel using self-tapping screws
4. Be able to join two pieces of plastic using adhesive	4.1. Use and follow the manufacturer's adhesive instructions 4.2. Select the tools and materials required to prepare and join plastic materials using an adhesive 4.3. Demonstrate the joining of plastic materials using adhesive
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Using different methods to join steel and plastic materials (test pieces) to include: • blind 'pop' rivets • adhesive • self-tapping screws

UNIT REF: ELMV38	UNIT TITLE: INTRODUCTION TO APPLYING AEROSOL PRIMERS

Level: Entry Level 3	GL: 10	TQT: 15
Overview: This unit will provide the learners with the knowledge to identify etch and high-build primers. They will also be able to recognise their specific uses and develop the skills to apply them safely. The primer will be applied to an A4 sized steel panel in a vertical position.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when applying aerosol primers	1.1. Use appropriate PPE and work safely throughout the task
2. Know about primers	2.1. State the basic difference between etch primer and high-build primer 2.2. Identify vehicle materials that are suitable for different types of primer. 2.3. State where to find manufacturer's instructions
3. Know how to use aerosol primers	3.1. List the process of preparing and applying aerosol primers as stated in the manufacturers' instructions 3.2. State how to dispose of used aerosols
4. Be able to apply aerosol primers	4.1. Locate and follow paint manufacturer's instructions 4.2. Use aerosol primers as stated in the manufacturer's instructions 4.3. Use recommended drying equipment (if required)
5. Be able to clean the work area and leave it in a safe condition	5.1. Use the appropriate equipment and methods to clean the work area and leave it in a safe condition.

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Applying etch and high-build aerosol primers to an A4 size steel panel, in a vertical position

Unit Content	Assessment Criteria
Primers and their uses to include: • State the difference between high-build and etch primer. • Define where the two primers are used and where to locate application information.	2.1, 2.2
Preparing aerosols for use to include: • Consulting manufacturers' instructions • Mixing 'shaking' • Checking and locating the nozzle • Fan adjustment if applicable	3.1, 3.3

UNIT REF: ELMV39	UNIT TITLE: INTRODUCTION TO PREPARING PRIMER TO ACCEPT TOPCOAT

Level: Entry Level 3	GL: 9	TQT: 12
Overview: This unit will enable the learners to develop the skills and knowledge to prepare a high-build aerosol primer to accept topcoat. The area of preparation is an A4 sized, steel panel and will be prepared using hand sanding methods. The learners will follow manufactures' instructions and use appropriate abrasives, guide coats and cleaning materials during the preparation process.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when preparing primer to accept topcoats	1.1. Use appropriate PPE and work safely throughout the task
2. Know about the tools, equipment and consumables used in the preparation process	2.1. Identify tools, equipment and consumables used in preparing aerosol primer to accept topcoat 2.2. State the purpose of tools, equipment and consumables used in the preparation process
3. Know about abrasives that are appropriate for successful preparation	3.1. Identify wet and dry abrasives 3.2. List suitable abrasive grades for wet and dry sanding
4. Know about guide coats	4.1. Identify the purpose of a guide coat
5. Be able to prepare the primer to accept topcoats	5.1. Use a guide coat 5.2. Demonstrate the processes to prepare the primer for topcoats
6. Be able to clean the work area and leave it in a safe condition	6.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Preparing a high-build primer to accept topcoats

Unit Content	Assessment Criteria
(The content below is determined by the resources available) **State the purpose of:** **Tools:** • Sanding blocks - rubber and extracted **Equipment:** • Extraction equipment/units • Degreaser dispensers • Paper/towel dispensers **Consumables:** • Cleaning/degreaser materials • Wipes • Guide coat • Abrasives and their method of fixing	2.1, 2.2
Abrasive grades and types to include: • Wet and dry • Grades of abrasive suitable for this task • Paint manufacturers information / instructions	3.1, 3.2
Primer preparation to accept topcoat to include: • Paint manufacturers information / instructions • The purpose and use of guide coat • The preparation process of aerosol applied primer • Sanding techniques to aid the preparation process • Successful cleaning • Assessing the standard of the preparation	4.1, 4.2

UNIT REF: ELMV40	UNIT TITLE: INTRODUCTION TO MASKING MATERIALS AND TECHNIQUES

Level: Entry Level 3	GL: 10	TQT: 13
Overview: This unit will enable the learners to develop the skills and knowledge to use basic masking materials and techniques. On completion of this unit the learners will be able to mask out equal sections on an A4 sized steel panel.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when using masking materials	1.1. Use appropriate PPE and work safely throughout the task
2. Know about using masking tape and paper	2.1. List two reasons for using masking tape and paper 2.2. Give examples of how to use masking materials economically
3. Know the causes of masking faults	3.1. Identify the causes of Masking tape not sticking (adhesion problems) 3.2. Identify the causes of paint and primers 'creeping' underneath masking tape
4. Be able to use masking tapes and paper	4.1. Use masking tape and paper to cover equal sections of an A4 size steel panel 4.2. Demonstrate economical use of masking materials 4.3. Demonstrate the removal of masking tapes and papers
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Using masking materials to cover equal sections of an A4 size panel

Unit Content	Assessment Criteria
Reasons for masking to include: • Protecting areas from damage during preparation • Protecting areas from overspray **Use of masking materials to include:** • Economical use and how to avoid waste • Masking techniques: keeping the tape taut, smoothing out creases, sticking, pulling tape from the roll and lining up edges. • Techniques in the removal of masking tapes and paper • Care with uncured surfaces, removing masking tape at an angle to the surface, checking the surface during removal	2.1, 2.2
Simple masking faults to include: • Adhesion issues caused by a dirty or wet surface, incorrect tape storage • Paint / primer creep caused by the edges of the tape not being pressed to the surface, contaminated tape, contaminated panels and overheating of the tape	3.1

UNIT REF:ELMV41	UNIT TITLE: INTRODUCTION TO APPLYING AEROSOL TOPCOATS

Level: Entry Level 3	GL: 9	TQT: 13
Overview: This unit will enable the learners to develop the knowledge and skills to recognise direct gloss topcoat. The learners will be able to apply the topcoat to a small primed steel panel, no greater than an A4 sized area, in a vertical position. **The learners will follow manufactures' instructions to aid the completion of the unit.**		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when applying aerosol top coats	1.1. Use appropriate PPE and work safely throughout the task
2. Know how to clean surfaces before applying topcoat	2.1. State suitable cleaning products and techniques to clean the panel surface 2.2. Identify methods of removing dust from the surface prior to painting
3. Know how to apply aerosol direct gloss topcoat	3.1. List the 'spraying' techniques that prevent paint faults
4. Be able to apply an aerosol direct gloss topcoat	4.1. Use cleaning products and suitable methods to clean the panel surface 4.2. Use paint manufacturers' instructions to aid the process of applying topcoat 4.3. Demonstrate the process of applying aerosol topcoat 4.4. Use 'spraying' techniques that prevent paint faults 4.5. Use suitable methods to dry the topcoat
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Applying aerosol direct gloss topcoat to an A4 size steel panel, in a vertical position

Unit Content	Assessment Criteria
Cleaning products to include: • Water-based and solvent cleaners • Suitable wipes/cloth • Tack rags • Safe use of uncontaminated compressed air **Using cleaning materials prior to applying topcoats** • Techniques in cleaning, changing cloths before they are contaminated • How to apply cleaners • Cleaning agent dispensers • Removal of cleaning products from the panel surface • Tack rag use	2.1, 2.2
The process of applying aerosol topcoat to include: • Correct technique: paint thickness, number of coats, coverage, distance from the panel, overlap, spray pattern (if appropriate) and nozzle/cap pressure • Method of applying a first coat • Flash-off period • Method of applying second coat **Drying method aerosol topcoats to include:** • Air drying and appropriate force drying **Techniques to avoid paint faults during the application of aerosol topcoat to include:** • Locating manufacturers' instructions/guidelines • Nozzle/cap – cleanliness, cleaning and removal • Even nozzle/cap pressure • Distance from the panel • Number of coats • Amount of paint applied • Inconsistent overlap • 'Flash-off periods' **Possible common paint faults to include:** • Drips, runs, sags, dirt inclusions • 'Paint spatter' **Drying methods of aerosol topcoats to include:** • Air-drying • Consequences of force drying and overheating aerosol topcoats	3.1, 3.4

UNIT REF: ELMV42	UNIT TITLE: INTRODUCTION TO BASIC PAINT DEFECTS

Level: Entry Level 3	GL: 9	TQT: 12
Overview: This unit will enable the learners to develop the knowledge and skills to identify two minor paint application faults. The learners will be able to state the causes of the defects and rectify them both, using appropriate methods. Note: The paint defects are minor in terms of size and amounts and will be carried out on an A4 size, steel panel. The faults can be rectified in primer or topcoat finishes, however, any restoration of gloss levels or the application of compound must be carried out using hand methods.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when rectifying minor paint defects	1.1. Use appropriate PPE and work safely throughout the task
2. Know the cause and rectification process of minor paint defects	2.1. Identify runs, sags, and dirt inclusion defects and their causes 2.2. List appropriate techniques to rectify a small run/sag and minor dirt inclusions
3. Be able to rectify a small run/sag and minor dirt inclusions	3.1. Use the correct abrasives and techniques to rectify minor paint defects 3.2. Select and use the correct rubbing compound to restore gloss levels 3.3. Use suitable methods to leave the finish clean
4. Be able to clean the work area and leave it in a safe condition	4.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor rectifying two minor paint faults/defects to include the following on at least one occasion:
A run / sag
Dirt inclusions

Unit Content	Assessment Criteria
The cause of paint defects to include: **Runs/sags** • Excessive build-up/application of paint products • Insufficient flash-off period • Technique - distance from the surface **Dirt inclusions** • Insufficient surface cleaning • Contaminated clothing and environments **Rectification methods/techniques to include:** • Masking and protecting surrounding areas, • Sanding • Repainting • Compounding and restoration of gloss levels **Abrasives used to rectify minor paint faults to include:** **Runs/sags and dirt inclusions** • Wet and dry abrasive choices • Reasons for choice • Examples of grades: P1200, P1500, P2000, P3000 **Restoration of gloss levels to include:** • Rubbing compound grades and selection • Manufactures' instructions • Cloth types and selection • Application methods – by hand • Surface cleaning methods and techniques	2.1,2.2

UNIT REF: ELMV43	UNIT TITLE: INTRODUCTION TO IMPROVING THE FINAL FINISH

Level: Entry Level 3	GL: 7	TQT: 10
Overview: This unit will provide the learners with the knowledge and skills to use a rubbing compound and wax polish to enhance the finish of a direct gloss topcoat. **The learners will follow manufactures' instructions and work on an A4 sized, painted steel panel using hand methods only.**		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when improving the final finish	1.1. Use appropriate PPE and work safely throughout the task
2. Know the purpose of materials to improve paint finishes	2.1. Identify rubbing compound and wax polish 2.2. State the purpose of and how to use rubbing compound and wax polish 2.3. Identify where rubbing compounds and wax polish can be used
3. Be able to use materials to improve paint finishes	3.1. Locate and follow manufacturers' instructions 3.2. Demonstrate the application and removal of rubbing compound and wax polish
4. Be able to clean the work area and leave it in a safe condition	4.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion:
Using rubbing compounds and wax polishes to enhance (improve) a direct gloss topcoat

Unit Content	Assessment Criteria
The purpose of rubbing compound to include: • Restoring gloss after removing dirt inclusions • Restoring gloss on aged paint finishes **The purpose of wax polish to include:** • Improving shine • Protection • Cleaning **Preparation, application and removal of rubbing compound to include:** • Manufactures' guidelines for the specific product • Grades and suitability • Cloth types • Economic use / dispensing • Application and removal techniques (by hand) **Preparation, application and removal of wax polish to include:** • Manufactures' guidelines for the specific product • Cloth types • Economic use/ dispensing	2.1-2.2

UNIT REF: ELMV46	UNIT TITLE: INTRODUCTION TO MOTORCYCLE ENGINE COMPONENTS AND OPERATION

Level: Entry Level 3	GL: 16	TQT: 21
Overview: In this unit learners will investigate the main components of an engine and the operating principles of the four stroke internal combustion engine		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on engines
2. Know about four stroke internal combustion engines	2.1. Outline the sequence of operation in the four stroke cycle 2.2. Identify the main engine components
3. Be able to remove and refit simple four stroke engine components	3.1. Demonstrate how to remove and refit a range of simple engine components from a (non-running) engine 3.2. Demonstrate the correct use of tools and equipment

Evidence Requirements
You must be observed by your assessor removing and refitting all of the components listed below on at least one occasion:
Rocker / Camshaft cover
Timing belt / chain cover
Sump
Alternator
Flywheel
Starter motor

Unit Content	Assessment Criteria
The four stroke cycle is: • induction • compression • power • exhaust The main engine components to include: • crankshaft • connecting rods • pistons • crankcase • cylinder head • camshaft • valves • cambelt (or chain)	2.1, 2.2

UNIT REF: ELMV47	UNIT TITLE: INTRODUCTION TO MOTORCYCLE STEERING AND SUSPENSION SYSTEMS

Level: Entry Level 3	GL: 15	TQT: 18
Overview: In this unit the learner will find out about the principles of steering and suspension and how to carry out simple checks on these systems, following all relevant safety precautions.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on motorcycle steering and suspension systems
2. Know about steering systems	2.1. State the function of the steering system 2.2. Identify the main components of a motor cycle steering system
3. Know about suspension systems	3.1. State the function of suspension systems 3.2. Identify the main components of motorcycle suspension systems
4. Be able to carry out simple checks on suspension systems	4.1. Demonstrate how to check suspension dampers for leakage 4.2. Demonstrate how to carry out a bump test to check the dampers condition

Evidence Requirements
You must be observed by your assessor performing all the checks identified below on a motorcycle suspension system on at least one occasion:
Carry out a 'bump' test on the motorcycle's suspension
Check the suspension system for leaks

Unit Content	Assessment Criteria
Functions of steering systems to include: • enable the rider to control accurately the path of the motorcycle at all times • be light and easy to operate	2.1
The main components of a motorcycle steering system to include: • front forks • handle bars • bearings and headstock	2.2
Functions of the suspension systems to include: • to provide a safe and pleasant ride for the motorcycle rider/passenger • to provide positive steering and handling of the motorcycle • to enable the rider to be in full control of the motorcycle under all conditions	3.1
Identify the main components of motorcycle suspension systems to include: • front fork types • rear suspension systems • spring types • shock absorber types	3.2

UNIT REF: ELMV48	UNIT TITLE: INTRODUCTION TO MOTORCYCLE COMPONENT FITTING

Level: Entry Level 3	GL: 15	TQT: 19
Overview: In this unit the learner will learn how to remove and replace mechanical, electrical and trim components which are often required as part of other work carried out on motorcycles.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and safe working practices when removing and refitting motorcycle components
2. Be able to correctly remove and refit basic motorcycle components	2.1. Demonstrate the removal and refitting of basic motorcycle components.
3. Know how to correctly remove and replace simple electrical system components	3.1. State the correct methods to isolate electrical components before removal and refitting 3.2. State how to select the correct fuse for replacement 3.3. State the correct methods for disconnecting and reconnecting batteries
4. Be able to correctly remove and refit basic electrical components	4.1. Demonstrate the removal and refitting of electrical components.

Evidence Requirements
You must be observed by your assessor removing and refitting all of the body components listed below on at least one occasion:
Seat
Mudguard
Number plate
Side panel or fairing
Chain guard
You must be observed by your assessor removing and refitting all of the electrical components listed below on at least one occasion:
Battery
Rear light

Unit Content	Assessment Criteria
The correct methods to isolate electrical components before removal and refitting to include: • turn off switch for component • remove key from ignition • inform others of work being carried out	3.1
Selecting the correct fuse for replacement to include: • identify inoperative circuit • identify fuse from panel cover • remove fuse and identify rating • replace fuse with same rating • check operation of circuit	3.2
State the correct methods for disconnecting and reconnecting batteries to include: • turn off all electrical consumers • remove key from ignition • disconnect negative lead first, then positive • reconnect positive first, then negative	3.3

UNIT REF: ELMV49	UNIT TITLE: MOTORCYCLE ROUTINE COOLING AND LUBRICATION SYSTEM CHECKS

Level: Entry Level 3	GL: 14	TQT: 17
Overview: In this unit the learner will learn about cooling and lubrication systems and how to carry out simple checks on each type of system. Learners will all be required to observe the necessary Health and Safety requirements whilst working on each system.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely.	1.1. Use appropriate PPE and methods when working on engine cooling and lubrication systems.
2. Know about cooling systems.	2.1. State why cooling systems are required 2.2. Identify the main liquid cooling system components.
3. Be able to check a cooling system.	3.1. Demonstrate how to correctly check coolant level and top up if required. 3.2. Demonstrate how to check the freezing point of coolant with a hydrometer. 3.3. Check a cooling system for leaks.
4. Know about engine lubrication systems.	4.1. State why lubrication systems are required. 4.2. Identify two lubrication system components.
5. Be able to check a lubrication system.	5.1. Demonstrate how to correctly check oil levels and top up if required. 5.2. Identify the correct specification of oil from technical specifications. 5.3. Check a lubrication system for leaks.

Evidence Requirements
You must be observed by your assessor completing all of the activities listed below to a motorcycle cooling system on at least one occasion:
Checking a motorcycle cooling system level and topping up if required.
Checking the freezing point of coolant
Checking the cooling system for leaks.
You must be observed by your assessor completing all of the activities listed below to a motorcycle lubrication system on at least one occasion:
Checking an engine oil level and topping up if required.
Checking the lubrication system for leaks.

Unit Content	Assessment Criteria
Identify the main liquid cooling system components: • radiator • pipes and hoses • pump • thermostat • coolant • antifreeze	2.1
Why lubrication systems are required to include: • reduces friction • reduces wear • carries away metal and carbon particles • cools the surface	4.1
Identify two lubrication system components to include: • oil filler cap • oil filter • dipstick • oil pick up • oil pump	4.2

UNIT REF: ELMV50	UNIT TITLE: MOTORCYCLE ROUTINE BRAKING SYSTEM CHECKS

Level: Entry Level 3	GL: 15	TQT: 17
Overview: In this unit learners will learn about the main components of motorcycle braking systems and simple maintenance tasks.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely	1.1. Use appropriate PPE and methods when working on brake systems
2. Know about braking systems	2.1. State the location of braking components 2.2. Identify the main components of a motorcycle braking system
3. Be able to remove and replace simple brake system components and carry out simple checks	3.1. Remove and refit a set of disc pads 3.2. Check operation of brake lights 3.3. Check and top-up brake fluid reservoir
4. Know how to dispose of braking system components	4.1. State how to dispose of brake friction materials 4.2. State how to dispose of brake fluid

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Removing and refitting a set of disc brake pads.
Checking the operation of a brake light.
Checking and topping up a brake fluid reservoir.

Unit Content	Assessment Criteria
Location of main Braking components : • brake callipers • master cylinder • brake pedal and lever • hydraulic lines	2.1
Braking system components to include: • brake discs • brake calipers • brake pads • master cylinder • flexible brake hoses • metal pipes	2.2
State how to dispose of brake friction materials: • appropriate disposal methods of disc brake pads	4.1
State how to dispose of brake fluid: • appropriate disposal methods of brake fluid • clearing up spillages and disposal of absorbent materials	4.2

UNIT REF: ELMV51	UNIT TITLE: MOTORCYCLE ROUTINE WHEEL AND TYRE CHECKS

Level: Entry Level 3	GL: 15	TQT: 18
Overview: In this unit learners will learn about the common terms and construction methods associated with wheels and tyres, removal and replacement methods of motorcycle wheels and how to complete basic maintenance checks using appropriate tools and equipment.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely.	1.1. Use appropriate PPE and methods when removing and refitting wheels.
2. Know the motorcycle wheel types	2.1. Identify the common types of wheel used on motorcycles.
3. Know the motorcycle tyre terminology.	3.1. Identify the main markings and terminology associated with motorcycle tyres.
4. Be able to safely and correctly remove and refit motorcycle road wheels.	4.1. Select the correct tools, equipment and technical data used for removing and refitting wheels. 4.2. State the safety precautions when removing and refitting wheels. 4.3. Demonstrate the correct sequence and procedure for removing and refitting a wheel.
5. Be able to check tyre pressures and tread depths.	5.1. Demonstrate the correct sequence to check and correct tyre pressures. 5.2. Demonstrate the correct methods to check and record tyre tread depths.

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Removing and refitting front and rear road wheels.
Checking and correcting tyre pressures.
Checking tyres, measuring and recording tread depths.

Unit Content	Assessment Criteria
The common types of wheel used on motorcycles to include: • alloy wheels • pressed steel wheels • wire wheels	2.1
The main markings and terminology associated with motorcycle wheels and tyres to include: • tyre type • tyre size • tread depth • speed rating • wheel diameter • load index • tread wear indicators	3.1

UNIT REF: ELMV52	UNIT TITLE: INTRODUCTION TO MOTORCYCLE CONSTRUCTION

Level: Entry Level 3	GL: 11	TQT: 15
Overview: In this unit the learner will learn about motorcycle construction and their control systems.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know about the types of motorcycles available.	1.1. Identify a range of motorcycle types.
2. Know the names of the main parts found on motorcycles.	2.1. State the names of the main parts found on naked motorcycles. 2.2. State the names of the main panels found on faired motorcycles.
3. Know the purpose and position of the control systems used on scooter and conventional motorcycles.	3.1. Identify the purpose and position of the various controls found on a range of motorcycles.

Unit Content	Assessment Criteria
The range of motorcycle types to include: • scooter • moped • sports • tourer • naked • faired • moto cross • super moto • trials	1.1
The names of the main parts found on naked motorcycles to include: • front suspension and forks • handlebars and steering yokes • rear suspension and swing arm • wheels and tyres • frame • braking components • chain and sprockets • engine and gearbox • seat unit • tank unit	2.1
The names of the main panels found on faired motorcycles to include: • top fairing • tower fairing • belly pan • screen • tail unit • side panels	2.2

Unit Content Contd.	Assessment Criteria
The purpose and position of the various controls found on a range of motorcycles to include: • front brake lever • rear brake lever • gear change lever • clutch lever • throttle assembly • side/headlight switch • dip switch • indicator switch • engine kill switch • ignition switch (and positions)	3.1

UNIT REF: ELMV53	UNIT TITLE: ROUTINE MOTORCYCLE CHECKS

Level: Entry Level 3	GL: 14	TQT: 17
Overview: This unit introduces learners to the principles of routine motorcycle maintenance checks. The learner will also perform routine motorcycle maintenance checks using a range of tools and equipment associated with the task.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when carrying out routine motorcycle maintenance checks	1.1. Use appropriate PPE and methods when carrying out routine motorcycle maintenance checks
2. Know the motorcycle systems and components that require routine maintenance checks.	2.1. Identify the motorcycle systems and components that require routine motorcycle maintenance checks. 2.2. Identify the basic routine maintenance requirements for motorcycle systems.
3. Know the information and equipment required for routine motorcycle maintenance checks.	3.1. Identify the information required for routine motorcycle maintenance checks. 3.2. Identify the tools and equipment required for routine motorcycle maintenance checks.
4. Be able to carry out routine motorcycle maintenance checks.	4.1. Demonstrate the correct sequence and procedure when carrying out routine motorcycle maintenance checks.

Evidence Requirements
You must be observed by your assessor completing the task listed below on at least one occasion:
Carrying out a basic routine maintenance check to a motorcycle using a logical sequence.

Unit Content	Assessment Criteria
Motorcycle systems and components that require routine maintenance to include: • battery, engine oil, engine coolant, fluid levels • wheels and tyres • lighting system • horn, instruments, warning lamps • external components; mirrors, panels, paintwork • chain tension and lubrication • centre stand • controls, throttle, brake levers, footbrake, handlebars	2.1
The maintenance requirements for motorcycle systems to include: • check engine oil condition and level • check engine oil filter condition and for leakage • checking and top-up fluid levels; battery, clutch and brake fluid • tyre condition, pressures and tread depths • operation of lamps and indicators • operation of instruments, horn and warning lamps • operation and condition of mirrors • condition of panels and paintwork • chain tension and lubrication • centre stand lubrication	2.2
The information required for motorcycle maintenance to include: • motorcycle make, model and VIN number • correct engine oil specifications • engine coolant specifications • brake and clutch fluid specifications • tyre pressures • specifications for new components or fluids, bulbs, transmission lubricants	3.1
The tools and equipment required for motorcycle maintenance to include: • tyre tread gauge • tyre inflator • tyre pressure gauge • disposable cloths	3.2

UNIT REF: ELMV44	UNIT TITLE: CLEANING A VEHICLE EXTERIOR

Level: Entry Level 3	GL: 9	TQT: 12
Overview: This unit will enable the learner to develop their knowledge and skills in recognising products, tools and equipment used in cleaning the exterior of a vehicle. The learner will be able to hand wash and dry a vehicle using the appropriate methods. **Note: Use of pressure washing equipment is not required for the completion of this unit.**		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when cleaning a vehicle exterior	1.1. Use appropriate PPE and work safely throughout the task
2. Know the importance of prewashing vehicles prior to using hand washing methods	2.1. State the importance of prewashing a vehicle prior to using hand washing methods 2.2. Identify an area of a vehicle that retains dirt
3. Know precautions to be taken when using exterior cleaning products	3.1. Identify where safety information may be located when using cleaning products 3.2. State what precautions should be taken to avoid contact with chemicals 3.3. State what to do in the event of accidental contact with harmful chemicals
4. Be able to wash and dry the exterior of a vehicle	4.1. Demonstrate methods involved in prewashing a vehicle 4.2. Demonstrate how to mix shampoo and water to the correct ratio 4.3. Demonstrate the correct sequence of washing a vehicle exterior 4.4. Use cleaning materials and equipment safely and economically 4.5. Demonstrate the drying of the vehicle including door apertures
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor carrying out the task below on at least one occasion:
Hand washing and drying a vehicle exterior

Unit Content	Assessment Criteria
Prewashing vehicle bodywork to include: • Reasons for prewashing – removal of dirt that will scratch vehicle paint work • Special attention to window seals, panel gaps, grills, inner wheel arches and low areas of the vehicle that retain dirt. • Caution near air intakes and induction vents • Hose pipe pressure, nozzle/spray settings – relate hose settings to areas of the vehicle (Jet setting under wheel arches)	2.1, 2.2
Tools, equipment, and products associated with washing a vehicle exterior to include: • Hot and cold water • Shampoo/wash and wax • Hose pipe • Brushes • Sponge • Squeegee • Wash leather • Bucket • Wheel cleaning products	3.1

UNIT REF: ELMV45	UNIT TITLE: CLEANING A VEHICLE INTERIOR

Level: Entry Level 3	GL: 11	TQT: 15
Overview: This unit introduces learners to the principles of interior vehicle valeting. It includes the safe use of tools and equipment and cleaning materials for the internal surfaces of vehicles. The unit is only concerned with simple valeting tools and equipment that do not require detailed training and does not include specialist commercial equipment. Similarly, only common cleaning materials are covered and the unit does not include specialised cleaning products often used by commercial valeting businesses. The aim of this unit is to develop the learners understanding of simple valeting processes and the use of common cleaning equipment and materials associated with Interior cleaning vehicles.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when cleaning a vehicle interior	1.1. Use appropriate PPE and work safely throughout the task
2. Know commonly used interior valeting materials, tools and equipment and how they are used correctly and safely	2.1. Identify the commonly used materials, tools and equipment for valeting a vehicle's Interior. 2.2. Identify the tasks that are necessary to prepare and use valeting tools and equipment safely and correctly.
3. Know precautions to be taken when using interior cleaning products	3.1. Identify where safety information may be located when using cleaning products 3.2 State what precautions should be taken to avoid contact with chemicals 3.3 State what to do in the event of accidental contact with harmful chemicals
4. Be able to demonstrate the correct procedures for valeting motor vehicles safely and effectively	4.1. Demonstrate the correct sequence and procedure for valeting a vehicle's Interior. 4.2. Use cleaning materials and equipment safely and economically
5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor carrying out all of the following tasks on at least one occasion:
Identify common tools used to clean a vehicle interior and be able to use them to clean a vehicle interior
Recognise different types cleaning materials and use these to clean a vehicle interior
Using the correct sequence and procedure for valeting a vehicle's Interior
Using cleaning materials and equipment safely and economically

Unit Content	Assessment Criteria
The commonly used tools and equipment for valeting a vehicle's <u>interior</u> to include • sponges and buckets • cleaning cloth • upholstery brush • vacuum cleaner • polishing cloth	2.1-2.2

UNIT REF: ELMV59	UNIT TITLE: CLEANING A MOTORCYCLE

Level: Entry Level 3	GL: 9	TQT: 13
Overview: This unit introduces learners to the basic principles of motorcycle valeting. It includes the safe use of common tools, equipment, cleaning materials and techniques that are used for all surfaces of a motorcycle.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when cleaning a motorcycle	1.1. Use appropriate PPE and work safely when cleaning motorcycles
2. Know the commonly used valeting tools and equipment and how they are used correctly and safely.	2.1. Identify the commonly used tools and equipment for valeting a motorcycle. 2.2. Identify the tasks that are necessary to prepare and use valeting tools safely and correctly.
3. Know the commonly used cleaning materials and how they are used correctly and safely.	3.1. Identify the cleaning materials used for valeting a motorcycle. 3.2. Identify the tasks and precautions for correctly using cleaning materials.
4. Be able to demonstrate the correct procedures for valeting motorcycle safely and effectively.	4.1. Demonstrate the correct sequence and procedure for valeting a motorcycle.

Evidence Requirements
You must be observed by your assessor completing all of the tasks listed below on at least one occasion:
Selecting appropriate cleaning materials for valeting a motorcycle
Safely cleaning a motorcycle in a logical sequence

Unit Content	Assessment Criteria
The cleaning materials used for valeting a motorcycle to include: • shampoo • polish • tyre blackener • glass cleaner • tar remover • chrome cleaner • alloy wheel cleaner **The tasks and precautions for correctly using cleaning materials to include:** • following motorcycle manufacturer's recommendations • following instructions for correct use of cleaning materials • selecting appropriate cleaning materials for surface • avoiding contamination or splashing of other surfaces • avoiding the use of previously contaminated cloths	2.1, 2.2
Personal protection equipment (PPE) and safe valeting procedures to include: • overalls • gloves • rubber boots • goggles • removal and storage of property from motorcycle • immobilising motorcycle – removal of ignition key • ensuring stand is applied • precautions when using electrical equipment • disposal of waste materials • cleaning work area after valeting • correct storage of cleaning equipment **The sequence that should be used when cleaning a motorcycle:** • Starting point for cleaning • Washing loose dirt off first • correct process for using shampoo • correct process for polishing a motorcycle	3.1, 3.2

UNIT REF: ELMV26	UNIT TITLE: INTRODUCTION TO WORKSHOP EQUIPMENT

Level: Entry Level 3	GL: 14	TQT: 18
Overview: This unit introduces learners to motor vehicle workshop equipment. It includes general workshop equipment that would be used in light vehicle, heavy vehicle or motor cycle workshops. It encompasses the identification of the equipment and its specific use. It is only concerned with equipment that does not require detailed training to operate. **The aim of this unit is to develop the learners understanding of fundamental use of workshop equipment, their identification and their safe use and handling. Learners can then apply their understanding to all aspects of working within a motor vehicle workshop.**		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the common motor vehicle workshop equipment	1.1. Identify the common equipment found in a motor vehicle workshop
2. Be able to use motor vehicle workshop equipment correctly and safely	2.1. Demonstrate the safe use of common equipment found in a motor vehicle workshop
3. Know the examples of measuring equipment used in a motor vehicle workshop	3.1. Name the types of measuring equipment commonly used in a motor vehicle workshop

Evidence Requirements
You **must be observed by your assessor** completing **all** of the tasks listed below **on at least one occasion:**
Safely using common measuring equipment found in a motor vehicle workshop
Safely using lifting equipment found in a motor vehicle workshop
Safely using mains electrical equipment found in a motor vehicle workshop

Unit Content	Assessment Criteria
Identify common equipment found in a motor vehicle workshop • lifting equipment e.g jacks, ramps and axle stands • air lines and attachments e.g wrenches, blow guns, tyre inflator/gauge • mains electrical apparatus e.g drills; extension leads; parts cleaner • task specific specialist tools e.g tracking gauges (simple optical), filter straps, waste oil drainers	1.1
Name the types of measuring equipment commonly used in a motor vehicle workshop to include: • tape measure • steel rule • feeler blades • steel rules • micrometers • tread depth gauges	3.1

UNIT REF: ELMV27	UNIT TITLE: INTRODUCTION TO VEHICLE CONSTRUCTION AND BODY SHAPES

Level: Entry Level 3	GL: 14	TQT: 18
Overview This unit will provide the knowledge to recognise light vehicles, their construction, layouts and body types		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know about engine arrangements and drive line configurations	1.1. Identify the engine arrangements found in a range of light vehicles 1.2. Identify the drive layout configurations for a range of vehicles
2. Know about body types for a range of vehicles	2.1. Identify the body types for a range of vehicles
3. Know the names of the main body parts found on light vehicles	3.1. State the names of the basic non-structural body panels found on light vehicles 3.2. State the names of the main trim components found on light vehicles
4. Know the common types of materials used in vehicle construction	4.1. Identify common materials used in body construction

Unit Content	Assessment Criteria
The engine arrangement for a range of vehicles to include: • front engine • rear engine • mid-engine	1.1
The drive layout configurations for a range of vehicles to include: • front wheel drive • rear wheel drive • four wheel drive	1.2
The body types for a range of vehicles to include: • saloon • estate • hatchback • coupe • convertible • MPV • 4x4	2.1
Non-structural body panels • bonnet • front wings • tailgate • boot lid • door	3.1

Unit Content contd.	Assessment Criteria
Trim components • bumper • headlamp unit • rear light unit • dash board • seat belts • door mouldings • head lining	3.2
The names of materials used in vehicle construction : • Alloy • Carbon fibre • Steel • Fiberglass	4.1

UNIT REF: ELMV28	UNIT TITLE: INTRODUCTION TO RECOGNISING VEHICLE MATERIALS

Level: Entry Level 3	GL: 9	TQT: 12
Overview This will provide the knowledge to recognise common materials used in the manufacture of vehicles. The learner will identify different materials and be able to state the advantages and disadvantages of the materials.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the advantages and disadvantages of materials used in vehicle construction	1.1. List advantages and disadvantages of steel and plastic materials
2. Know how to identify vehicle interior and exterior panel and trim materials	2.1. State different methods of identifying vehicle interior and exterior panel and trim materials 2.2. List vehicle interior and exterior materials
3. Be able to identify vehicle exterior panel materials	3.1. Use suitable methods to identify vehicle plastic and steel exterior panels and trim 3.2. Locate vehicle exterior steel and plastic panels and trim
4. Be able to identify vehicle interior trim materials	4.1. Use suitable methods to identify vehicle interior materials 4.2. Locate different vehicle materials

Evidence Requirements
You must be observed by your assessor carrying out all the tasks listed below on at least one occasion:
Identifying vehicle plastic panels and trims
Identifying vehicle steel panels and trims

Unit Content	Assessment Criteria
Advantages and disadvantages of materials to include: • Weight • Corrosion • Strength • Joining • Ease of shaping • Cost	1.1
Methods of identifying vehicle exterior plastic and steel to include: • Magnetic tests • Plastic identification codes • Material weights • Textures • Appearance **Materials used in vehicle interiors to include:** • Rubber • Leather • Cloth/fabric • Plastic • Glass • Metals • Fibre Glass	2.1, 2.2

UNIT REF: ELMV29	UNIT TITLE: INTRODUCTION TO BODY REPAIR TOOLS AND EQUIPMENT

Level: Entry Level 3	GL: 11	TQT: 15
Overview: This unit will enable the learners to identify a range of body repair tools and equipment, which will be used within other body repair units, throughout this qualification.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when using body repair tools	1.1. Use appropriate PPE and work safely throughout the task
2. Know how to prepare body repair tools and equipment for use	2.1. Identify body repair tools and equipment 2.2. Outline how to carry out checks and prepare body repair tools and equipment for use
3. Be able to use body repair tools and equipment	3.1. Demonstrate the preparation of body repair tools and equipment 3.2. Demonstrate the safe use of body repair tools and equipment

Evidence Requirements
You must be observed by your assessor in an automotive environment on at one occasion using at least five of the tools /equipment listed below:
Trim removal tools
Screwdrivers
Spanners
Ratchets and sockets
Pliers
Planishing hammer
Toe dolly
Spreader
'Onion'/ mixing board
MAG welder
Self-locking clamps
Pneumatic drill / hole punch
Riveter
Adhesive applicator gun
Sanding blocks
Degreaser dispenser

Unit Content	Assessment Criteria
Body repair tools and equipment identification: **Identify and state the purpose of:** • Trim removal tools • Screwdrivers • Spanners • Ratchets and sockets • Pliers • Planishing hammer • Toe dolly • Spreader • Onion board • MAG welder • Self-locking clamps • Pneumatic drill/hole punch • Riveter • Adhesive applicator gun • Sanding blocks • Degreaser dispenser • Dust extraction equipment **How to check, prepare and use:** • How to prepare body repair tools in the list • Checks for safe use • Kitemarks • Examine and inspect for faults • Techniques and tips for using tools • Holding, gripping and securing whilst working • Consulting manufacturers information and guidance	2.1, 2.2

UNIT REF: ELMV30	UNIT TITLE: INTRODUCTION TO PAINT REFINISHING TOOLS AND EQUIPMENT

Level: Entry Level 3	GL:11	TQT: 16
Overview: This unit will enable the learners to identify a range of paint refinishing tools and equipment, which they will use within other paint refinishing units, throughout this qualification.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Be able to work safely when using paint refinishing tools and equipment	1.1. Use appropriate PPE and work safely throughout the task
2. Know how to prepare and use paint refinishing tools and equipment for use	2.1. Identify the listed tools and equipment 2.2. Outline how to carry out checks and prepare paint refinishing tools and equipment for use 2.3. State how to use paint refinishing tools and equipment
3. Be able to use the paint refinishing equipment	3.1. Demonstrate the preparation of paint refinishing tools and equipment 3.2. Demonstrate the safe use of paint refinishing tools and equipment
4. Be able to clean the paint refinishing equipment and work area and leave it in a safe condition	4.1. Use appropriate equipment and methods to clean paint refinishing equipment and work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor in an automotive environment on at least one occasion using five of the tools listed below:
An aerosol can
Aerosol can trigger applicator
Sanding blocks (rubber block and blocks incorporating dust extraction)
Degreaser dispenser
Masking paper dispenser
Dust extraction equipment

Unit Content	Assessment Criteria
Paint refinishing tools and equipment identification to include: **Identification, preparation and how to use** • An aerosol can • Aerosol can trigger applicator • Sanding blocks (rubber block and blocks incorporating dust extraction) • Degreaser dispenser • Masking paper dispenser • Dust extraction equipment **State how to check, prepare and use paint refinishing tools and equipment to include:** • Checks for safe use • Kitemarks • Examine and inspect for faults • Techniques and tips for using tools • Holding, gripping and securing whilst working • Consulting manufacturers information and guidance	2.1-2.3

UNIT REF: L1MV19	UNIT TITLE: SPARK IGNITION ENGINE SYSTEM COMPONENTS AND OPERATION

Level: 1	GL: 22 Hours	TQT: 30 Hours
Overview: This unit introduces learners to the principles of Spark Ignition (SI) engine system components and operation and includes the requirements for carrying out routine engine maintenance. The learner also has to carry out practical activities of removing and refitting a cylinder head to an SI engine.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know spark ignition engine systems and components	1.1 Identify the main components used in SI engines 1.2 State the purpose of the main components used in SI engines 1.3 Outline the purpose of the main systems used in SI engines
2. Know how spark ignition engines operate	2.1 State the operating cycle of the 2 and 4 stroke SI engines 2.2 Give examples of the valve and ignition timing requirements for 4 stroke SI engines 2.3 State the correct air/fuel mixture for SI engines during different situations 2.4 Identify the constituents of SI exhaust gas emissions and their effects on health and the environment.
3. Be able to safely and correctly carry out routine spark ignition engine maintenance	3.1 Work safely on SI engine systems 3.2 Select and use the correct technical data, tools and equipment for SI engine maintenance 3.3 Demonstrate the correct procedures when removing and refitting an SI engine cylinder head from a fully equipped non running stand engine 3.4 Demonstrate the correct procedures for reinstating the engine and vehicle after SI engine maintenance
4. Be able to clean the work area and leave in a safe condition	4.1 Use appropriate equipment and methods to clean the work area and leave in a safe condition

Evidence Requirements
You **must be observed by your assessor** completing **all** of the following activities listed below on **at least one occasion**:
Removing and refitting an SI cylinder head from an engine
Using correct procedures for reinstating the engine and vehicle after SI maintenance

Unit Content	Assessment Criteria
The main engine components to include: • cylinder block • cylinder head • engine sump • crankshaft • connecting rods • pistons and rings • camshaft • valves • inlet and exhaust manifolds • flywheel • front drive pulley • gaskets and seals **Purpose and function of main components to include:** • cylinder block • cylinder head • engine sump • crankshaft • piston and rings • connecting rod • flywheel • camshaft • inlet and exhaust valves • inlet and exhaust manifolds • gaskets and seals **Purpose of main SI engine systems include:** • induction and fuel system • exhaust system • lubrication system • cooling system • ignition system • starting system • charging system	1.1-1.3
The operating cycles for 2 and 4 stroke engines to include to include: • stages of operation - induction, compression, power and exhaust • piston position and movement • firing orders for 4 cylinder engine • engine terminology – bore, stroke, capacity, TDC, BDC, compression ratio • mixing of fuel and air **Valve and ignition timing to include:** • piston position when opening and closing valves • piston position for timing of spark • need to vary ignition timing with increase in engine speed **Air fuel mixture to include:** • stoichiometric air/fuel ratio • weak mixture • rich mixture • lambda **Exhaust emission to include:** • environmental and health concerns for exhaust emissions • exhaust gas emissions – H2O, N, CO2, CO, HC, NOx	2.1-2.4

UNIT REF: L1MV20	UNIT TITLE: COMPRESSION IGNITION ENGINE SYSTEM COMPONENTS AND OPERATION

Level: 1	GL: 22 Hours	TQT: 30 Hours
Overview: This unit introduces learners to Compression Ignition system (CI) engine components and operation. It also covers identifying the main engine components and requires learners to carry out routine engine maintenance procedures.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know compression ignition engine systems and components	1.1 Identify the main components used in CI engines 1.2 State the purpose and function of the main components used in CI engines 1.3 Outline the purpose of the systems used in CI engines
2. Know how compression ignition engines operate	2.1 State the operating cycles of the 4 stroke CI engine 2.2 Give examples of the valve and injection timing requirements for 4 stroke CI engines 2.3 State how air to fuel ratios differ from SI engines during different situations 2.4 Identify the constituents of CI exhaust gas emissions
3. Be able to remove and refit a compression ignition engine cylinder head	3.1 Work safely on CI engine systems 3.2 Select and use the correct technical data, tools and equipment for routine maintenance of CI engines 3.3 Demonstrate the correct procedures when removing and refitting an CI engine cylinder head
4. Be able to clean the work area and leave in a safe condition	4.1 Use appropriate equipment and methods to clean the work area and leave in a safe condition

Evidence Requirements
You must be observed by your assessor carrying out the task below on at least one occasion:
Remove and refit a compression ignition cylinder head (non-running stand engine)

Unit Content	Assessment Criteria
The main engine components to include: • cylinder block • cylinder head • engine sump • crankshaft • connecting rods • pistons and rings • camshaft • valves • inlet and exhaust manifolds • turbocharger • flywheel • front drive pulley • gaskets and seals **Purpose and function of main components to include:** • cylinder block • cylinder head • engine sump • crankshaft • piston and rings • connecting rod • flywheel • camshaft • inlet and exhaust valves • inlet and exhaust manifolds • turbocharger • gaskets and seals **Function of main CI engine systems include:** • induction system and turbocharger • low and high pressure fuel system (Fuel pumps, Injectors, filters, fuel lines) • exhaust system • lubrication system • cooling system • starting system • charging system	1.1-1.3
The operating cycles for 4 stroke CI engines to include to include: • stages of operation - induction, compression, power and exhaust • piston position and movement • firing orders for 4 cylinder engine • engine terminology – bore, stroke, capacity, TDC, BDC, compression ratio, direct injection, indirect injection • mixing of fuel and air **Valve and injection timing to include:** • piston position when opening and closing valves • piston position for timing of injection **Air to fuel ratios differ from SI engine to include:** • Compression of air only • Point of fuel injection (CI- near end of compression stroke, SI- on induction stroke) • Benefits of pressure charging CI Engines compared to SI engines- less chance of detonation as no fuel during CI compression • wider range of air/fuel ratios **Exhaust emissions to include:** • exhaust gas emissions – H2O, O, N, CO2, CO, HC, NOx, particulates	2.1-2.4

UNIT REF: L1MV44	UNIT TITLE: MOTORCYCLE FUEL SYSTEM MAINTENANCE

Level: 1	GL: 21 Hours	TQT: 29 Hours
Overview: This unit provides the learner with an introduction to the knowledge and skills in motorcycle fuel system components, their operation and associated maintenance tasks.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know about the hazards connected with working on motorcycle fuel systems.	1.1. Know the hazards associated with motorcycle fuel systems. 1.2. State the safety precautions to be taken when working on motorcycle fuel systems.
2. Know the main components of motorcycle fuel systems.	2.1. Identify the main components used in the fuel system. 2.2. State the functions of the main components
3. Be able to remove, inspect and replace motorcycle fuel system components.	3.1. Work safely on motorcycle fuel systems 3.2. Select and use appropriate technical data, tools and equipment for fuel system maintenance 3.3. Demonstrate how to remove, inspect and replace fuel system components to include: a. fuel filter b. carburettor or fuel injector. 3.4. Demonstrate how to check and adjust engine idle and air fuel mixture
4. Be able to clean the work area and leave in a safe condition	4.1. Use appropriate equipment and methods to clean the work area and leave in a safe condition.

Evidence Requirements
You must be observed by your assessor completing all of the activities listed below on at least one occasion:
Working safely on motorcycle fuel systems
Removing, inspecting and replacing a fuel filter.
Removing, inspecting and replacing a carburettor or fuel injector
Checking engine idle speed and air / fuel mixture.
Using appropriate equipment and methods to clean the work area and leaving it in a safe condition

Unit Content	Assessment Criteria
Hazards associated with fuel systems • Fire risks due to flammable vapours / liquids, safe systems of work • Inhaling fumes from fuels, ensure fuel containers are sealed • Skin irritation / diseases from contact with fuels, correct use of PPE • Inhalation of harmful exhaust gases, suitable use of exhaust extraction **Safety precautions to follow include:** • Safe conduct of individuals in workshops • Correct use of PPE • Use tools and equipment in correct manor • Report defects in tools and equipment to appropriate person • Follow COSHH instructions and guidance	1.1, 1.2
The main components of the fuel system are: • Fuel • Fuel tank • Fuel tap • Fuel pipes and filters • Carburettor system main components • Fuel injection system main components • Air filter and housing • Throttle twist grip **The function of the main fuel system components are:** • Fuel: hydrocarbon fuels over view. • Fuel tank: safe storage of fuel. • Fuel tap: on / off / reserve, filter. • Fuel pipes and filter: connects fuel tank to carburettor, removes dirt particles from the fuel. • Carburettor system: throttle slide and needle, mixing and float chambers, jets, adjustment screws, choke system • Injector system: injector, regulator, pump, temperature and position sensors, ECU, idle speed control. • Air filter and housing: removes dirt particles from the air, acts as a silencer. • Throttle twist grip: provides the rider a method of regulating the engines power.	2.1, 2.2

UNIT REF: L1MV47	UNIT TITLE: ELECTRICAL FOUNDATION SKILLS

Level: 1	GL: 21 Hours	TQT: 29 Hours
Overview: This unit introduces learners to the principles of vehicle electrical systems, components and operation. It covers identifying the main components used in vehicle systems and the main electrical principles and terminology. The unit also introduces learners to the fundamental operating principles of vehicle electrical systems and components. Learning outcome 3 requires the learner to be able to interpret simple electrical circuits and to create their own simple vehicle lighting circuit.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know about vehicle electrical systems and electrical principles	1.1. Identify the main electrical systems and components on a modern vehicle 1.2. Outline simple vehicle electrical component operational principles and laws 1.3. State the main electrical units of measurement 1.4. Identify common electrical symbols
2. Be able to make simple electrical circuits	2.1. Work safely whilst constructing vehicle electric lighting circuits 2.2 Select and use the correct tools, equipment, cable size and fuse to construct a vehicle lighting circuit. 2.3. Demonstrate the ability to accurately read and interpret a simple wiring diagram 2.4 Demonstrate the correct procedures to make a simple 12 volt lighting circuit using cable, switches, fuses, a relay and bulbs 2.5. Demonstrate the correct use of a voltmeter when checking electrical circuit operation
3. Be able to clean the work area and leave in it a safe condition	3.1. Use appropriate equipment and methods to clean the work area and leave in a safe condition

Evidence Requirements
You **must be observed by your assessor** completing **all** of the activities listed below on **at least one occasion:**
Working safely whilst constructing vehicle electric lighting circuits
Selecting and use the correct tools, equipment, cable size and fuse to construct a vehicle lighting circuit.
Accurately reading and interpreting a simple wiring diagram.
Making a simple 12 volt lighting circuit using cable, switches, fuses, a relay and bulbs
Correctly using a voltmeter to check electrical circuit operation

Unit Content	Assessment Criteria
The electrical systems include: • charging system – alternator, battery • starting system – battery, starter • lighting system – side and rear lamps, headlamps, stop lamps, fog lamps, indicators, hazard lamps • auxiliary systems – front and rear windscreen wipers, windscreen heater, horn, central door locking, immobiliser • in car entertainment – radio, CD player **Electrical principles and terminology include:** • magnet effect of electrical current – application to motors and generators • heating effect of electrical current – application to lamps, windscreen heater • chemical effect – storage and discharge of electrical energy by the battery • types of circuit – series and parallel • ratings of bulbs, lamps and fuses **Electrical units to include:** • volt • ampere • ohm • watt **Common electrical symbols to include:** • battery • switches • motors • fuses • lamps • earth • diode • transistor • relay	1.1-1.4

UNIT REF: L1MV51	UNIT TITLE: VEHICLE PAINT PREPARATION

Level: 1	GL: 13 Hours	TQT: 18 Hours
Overview: This unit will provide the learner with the knowledge and skills to prepare a previously painted steel surface using hand and machine sanding methods.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to clean previously painted panels, before, during and after the preparation process	1.1. Outline the appropriate methods of cleaning apreviously painted vehicle panel: a. before starting the paint preparation b. during the paint preparation process c. after completing the preparation of the surface 1.2. Identify different cleaning agents and the types of consumables used in the cleaning process
2. Know how to prepare a previously painted surface for the next stage of the repair process	2.1. Identify different methods which can used to determine that the panel is made of steel 2.2. Define how the preparation process may vary depending on the condition of the painted surface and the type of paint 2.3. State the tools and equipment which are required to prepare painted vehicle panels 2.4. Give examples of how to protect vehicle panels and trim which are not being prepared 2.5. Define different sanding methods and paint preparation techniques 2.6. State a selection of abrasives which are required to prepare previously painted panels and minor damage
3. Be able to clean previously painted panels before, during and after the preparation process	3.1. Demonstrate how to clean previously painted panels before, during and after the preparation process
4. Be able to prepare a previously painted surface for the next stage of the repair process	4.1. Use different methods to determine that the panel is made of steel 4.2. Select the appropriate tools and equipment which are suitable to prepare the painted panel 4.3. Demonstrate different methods of protecting vehicle panels, which are not part of the preparation process 4.4. Use the appropriate tools to prepare vehicle paintwork 4.5. Select and use a variety of abrasives suitable for the preparation process 4.6. Demonstrate different sanding and preparation techniques 4.7. Check the quality of the preparation and confirm that the job can progress to the next stages

5. Be able to clean the work area and leave it in a safe condition	5.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor on at least one occasion preparing a previously painted panel, to include:
Cleaning previously painted panels before, during and after the preparation process
Selecting and using the appropriate abrasives
Using hand and machine sanding methods

Unit Content	Assessment Criteria
The appropriate methods of cleaning a previously painted vehicle panel may include: • a vehicle prewash and cleaning areas which hold dirt. • methods of drying the vehicle and removing water ingress from behind trims • the use of water and solvent-based degreasers • removing dust with: an air duster, static removal gun and tack cloths **Different cleaning agents and the types of consumables used in the cleaning processes may include:** • traffic film removers • degreasers • clay bar • tar removers • shampoos • wheel cleaners • bird droppings remover or wipes	1.1, 1.2
The different methods used to determine that the panel is made of steel • consulting vehicle researched repair methods • simple magnet test **The preparation process may vary depending on the condition of the painted surface and the type of paint. This may include:** • minor paint defects and damage may be present • preparation for a blending process • the paint may be aged and / or affected by the environment • there may be paint reactions or degrading of the surface **The tools and equipment which is required to prepare painted vehicle panels:** • cleaning cloth and degreaser dispensers • extraction unit • sanding blocks • machine sanders • masking material dispensers • an air duster or static removal gun • an air line and compressor **Examples of how to protect panels and trim which are not being prepared include:** • masking sheeting and paper • covers • vehicle protection kits • tapes	2.1, 2.6

Unit Content contd.	Assessment Criteria
Define sanding and paint preparation techniques to include: • machine sanding • the use of sanding blocks • feather edge techniques • preparing awkward areas • how the sanding machine selection depends on the size of the repair and the appropriate size of the sanding orbit • when to use interface pads and different shaped and sized blocks • variations on different sanding blocks • methods to prepare awkward areas, tight corners and panel creases (under swages and panel lines) **Abrasives which are required to prepare previously painted panels and minor chips or scratches may include:** • scuff pads / 'scotchbrite' • liquid abrasives • P240 - P500 abrasives • foam-backed abrasives • methods of extraction incorporated in the abrasive material • types: roll, sheet and discs	2.1, 2.6

UNIT REF: L1MV68	UNIT TITLE: REMOVE AND REPLACE INTERIOR AND EXTERIOR TRIM

Level: 1	GL: 18 Hours	TQT: 26 Hours
Overview: This unit will provide the learner with the knowledge and skills to remove and replace vehicle interior and exterior trims.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know a range of vehicle interior and exterior trims	1.1. Identify interior and exterior vehicle trims
2. Know the methods which are used to secure vehicle interior and exterior trims	2.1. Identify a range of methods which are used to secure vehicle interior and exterior trims
3. Know how to remove and refit vehicle interior and exterior trims	3.1. Identify different types of information which will support the removal and refitting of interior and exterior trims 3.2. Outline how to remove and refit vehicle interior and exterior trims 3.3. Outline how to store vehicle interior and exterior trims
4. Be able to remove and refit vehicle interior and exterior trims	4.1. Demonstrate how to protect the vehicle from Damage 4.2. Demonstrate how to remove and refit vehicle interior and exterior trims (including replacing damaged fastenings) 4.3. Demonstrate how to protect and store the remove trims
5. Be able to check the quality of the work	5.1. Demonstrate how to check the quality of the work

Evidence Requirements
You must be observed by your assessor removing and refitting at least two of the interior trim components listed below on at least one occasion:
• Interior door card • Front seat (with limited electrical connections) • Rear seat • Glovebox • Luggage area side trims
You must be observed by your assessor removing and refitting at least two of the exterior trim components listed below on at least one occasion:
• Scuttle panel trim • Door mirror • Door moulding • Exterior wheel arch cover • Badge/emblem

Unit Content	Assessment Criteria
Interior trims to include: • interior door card • seats • glovebox • luggage area side trims • consoles • headlining • carpets / upholstery **Exterior vehicle trims to include:** • scuttle panel trim • door mirror • door moulding • tread plates • sill covers • exterior wheel arch covers / trim • badges/emblems	1.1
A range of methods which are used to secure vehicle interior and exterior trims to include: (select fastenings which relate to the interior and exterior trims listed in the above content) • metal and plastic trim fixings / retainers • screws • nuts and bolts • locking devices - mechanical and chemical • grommets • metal and plastic rivets • rivet nuts • moulding trim clips • adhesive tapes • adhesive • cable clips and ties	2.1
Different types of information which will support the removal and refitting of interior and exterior trims: • researched repair methods • workshop manuals • vehicle manufacturers' online manuals **How to remove and refit vehicle interior and exterior trims to include:** • methods of protecting the vehicle • electrical circuit isolation • selecting the tools required for the type of fastenings • planning the sequence of removal and refitting • the process (give examples) • storing fastenings • noting any differences in the type or length of the fastenings and their specific location • recognising and replacing unserviceable fastenings • replacing gaskets and sealants • how to assess the quality of work, such as the 'fit' and alignment **How to store vehicle interior and exterior trims to include:** • suitable protection, for example covers, bubble wrap and storage boxes • store in a suitable, secure, organised, clean and dry area	3.1, 3.3

UNIT REF: L1MV73	UNIT TITLE: INTRODUCTION TO MAG WELDING

Level: 1	GL: 18 Hours	TQT: 22 Hours
Overview: This unit provides the learner with the knowledge and skills to set up MAG welding equipment and carry out a welded lap joint on steel test pieces. The recommended test piece size is: 100 x 50mm (0.8-1.0mm steel)		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the correct PPE relating to MAG welding	1.1. Identify the PPE required when MAG welding
2. Know the main components of MAG welding equipment and their functions	2.1. Identify the main components of MAG welding equipment 2.2. State the function of the main components
3. Know how to check and set up MAG welding equipment	3.1. State how to check MAG welding equipment prior to use 3.2. Outline how to remove and replace the MAG welding wire and the torch contact tip 3.3. State how to set up MAG welding equipment for automotive material thicknesses
4. Know the different types of MAG welded joints used in automotive repair	4.1. Identify the different types of MAG welded joints used in automotive repair
5. Know how to carry out a seam welded lap joint and assess and the quality of the joint	5.1. State how to prepare the weld test pieces 5.2. Define how to use corrosion protection materials prior to carrying out MAG welding 5.3. Define the meaning of MAG welding techniques which are used to produce a lap welded joint 5.4. Define methods which are used to assess the quality of the lap welded joint
6. Be able to perform checks and set up MAG welding equipment	6.1. Demonstrate how to carry out checks to MAG welding equipment prior to use 6.2. Demonstrate how to set up MAG welding equipment 6.3. Demonstrate how to remove and replace the MAG welding wire and the torch contact tip
7. Be able to carry out a seam welded lap joint and assess the quality of the joint	7.1. Demonstrate how to prepare the weld test pieces 7.2. Use corrosion protection materials prior to carrying out MAG welding 7.3. Demonstrate MAG welding techniques to produce a lap welded joint 7.4. Use appropriate methods to assess the quality of the lap welded joint
8. Be able to clean the work area and leave in it a safe condition	8.1. Use appropriate equipment and methods to clean the work area and leave it in a safe condition

Evidence Requirements
You must be observed by your assessor completing all of the task listed below on at least one occasion:
Removing and replacing the torch contact tip and the wire spool
Applying corrosion protection material
Producing a MAG welded lap joint
Visually assessing the quality of the lap welded joint

Unit Content	Assessment Criteria
1.PPE for the workshop: • overalls • boots • skin protection • eye protection • ear protection • suitable respirator **Include all safe working practices specific to this unit**	1.1
2. The main components of MAG welding equipment: • gas bottle • pressure gauge and gas flowmeter • controls and settings panel • wire feed control unit and drive rollers • wire spool • torch **The function of the main components:** • the gas bottle stores the shielding gas • the gas flowmeter regulates the amount of shielding gas • the controls and settings panel houses the voltage selection, wire feed speed control and welding functions • the wire feed control unit and drive rollers provide a guide for the wire and a controlled supply of welding wire to torch and the point to be welded • the wire spool contains the welding wire and locates on the wire feed control unit • the torch incorporates the trigger and / or controls which provide a method of delivering the wire to the material being welded	2.1-2.2
3. Checks to MAG welding equipment prior to use includes: • equipment safety and condition checks • tested information - for example PAT tested stickers • equipment location and stability • wire type for the thickness of the material • gas selection / type • gas leak detection • amounts of consumables - gas and wire • the condition of the contact tip and shroud / gas nozzle • settings and controls	3.1, 3.3

Unit Content contd.	Assessment Criteria
How to remove and replace MAG welding wire and a contact tip to include: • safety factors • logical processes and procedures • manufacturer's instructions and manuals • methods of removal and replacement • appropriate tools • methods to prevent the wire from unravelling • wire tension settings • pushing / pulling the wire through to the torch • methods to prevent the 'cross-threading' of components and fastenings **Setting up MAG welding equipment for automotive material thicknesses to include:** • manufacturer's instructions • output control (voltage selection, wire feed speed control and polarity) • earth connections • gas flow and selection • wire diameter and type • workspace - room to manoeuvre	3.1, 3.3
Identify the different types of MAG welded joints used in automotive repair • butt • fillet - slot and plug welded joints • lap joint	4.1
How to prepare the weld test pieces: • cleaning • deburring • aligning • clamping and securing • earth connection points **How to use corrosion protection materials prior to carrying out MAG welding:** • types of protection, weld-though primers and conductive primers • application of corrosion protection materials **Define the meaning of MAG welding techniques which are used to produce a seam welded lap joint:** • direction of welding • speed of travel • length of the wire 'stick out' • angle of the torch **Methods which are used to assess the quality of the lap welded joint:** • visual • use of penetrants • identification of common faults	5.1,-5.4