IMI QUALIFICATION

QUALIFICATION SPECIFICATION Part B:

Assessment Criteria

For

IMI Level 1 Diploma in Vehicle Accident Repair

QUALIFICATION NO.:

601/8871/6 (BR)
601/8871/6 (RF)
601/8871/6 (Multi-S)

To be used in conjunction with learner guidance and candidate assessment summary

For assessor only: Assessor and Verifier Guidance

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

Qualification Structure

This qualification consists of three pathways;

- **Body**
- **Refinishing**
- **Multi-Skilled**

The individual pathway structures are listed below:

IMI Level 1 Diploma in Vehicle Accident Repair-Body

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

Body Pathway:

Group A – All units
Group B – Minimum 4 units to be selected
Group C – Minimum 2 units to be selected
Group D – Minimum 2 units to be selected
Group E – Minimum 1 unit to be selected
Group F – Additional Units – Not required
Group G – Minimum 6 units to be selected
Group H – Minimum 1 unit to be selected

TQT: 365
GL: 274-347 Hours

IMI Level 1 Diploma in Vehicle Accident Repair-Refinishing

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

Refinishing Pathway
Group A – All units
Group B – Minimum 4 units to be selected
Group C – Minimum 2 units to be selected
Group D – Minimum 2 units to be selected
Group E – Additional Units – Not required
Group F – Minimum 8 units to be selected
Group G – Additional Units – Not required
Group H – Minimum 1 unit to be selected

TQT: 385
GL: 292-362 Hours

IMI Level 1 Diploma in Vehicle Accident Repair-Multi-Skilled

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

Multi-Skilled Pathway
Group A – All units
Group B – Minimum 4 units to be selected
Group C – Minimum 2 units to be selected
Group D – Minimum 2 units to be selected
Group E – Minimum 2 units to be selected
Group F – Minimum 3 units to be selected
Group G – Minimum 3 units to be selected
Group H – Minimum 1 unit to be selected

TQT: 365
GL: 274-380 Hours

Group A – Mandatory Units

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV01	Health and Safety in the Workplace (F/508/3612)	1	29	21
L1MV02	Locating, Interpreting and Using Technical Information (J/508/3613)	1	17	12
L1MV03	Applying Engineering Techniques in an Automotive Environment (L/508/3614)	1	17	13
L1MV87	Knowledge Relating to Corrosion Protection (J/508/3658)	1	12	10

Group B – Foundation Skills

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV04	Knowledge Relating to Automotive Foundation Skills (R/508/3615)	1	25	17
ET133	Introduction to Low Carbon Technologies in the Automotive Industry (K/505/4248)	1	28	20
L1MV66	Moving Loads and Vehicle Lifting (R/508/3646)	1	22	15
L1MV50	Accident Repair Core Knowledge and Skills (H/508/4610)	1	25	20
L1MV85	Vehicle Materials and Joining Methods (A/508/3656)	1	21	17
L1MV86	The Retail Motor Industry (F/508/3657)	1	14	13

Group C – PSD

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV06	Preparation to Become a Vehicle Driver (Y/508/3616)	1	10	9
L1MV07	Preparation for Riding a Motorcycle or Moped (D/508/3617)	1	10	7
L1MV08	Reducing Risks When Driving Vehicles (H/508/3618)	1	17	14
L1MV09	Introduction to Mobile Automotive Repair Trades (K/508/3619)	1	11	10
L1MV10	Introduction to Business Enterprise (D/508/3620)	1	20	12

Group D – Health, Safety, Tools and Equipment

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV13	Health and Safety in an Accident Repair Environment (K/508/4611)	1	12	11
L1MV14	Tools, Equipment and Materials for Accident Repair (A/508/4628)	1	23	19
L1MV15	Health and Safety Practices in a Valeting and Detailing Environment (M/508/3623)	1	18	13
L1MV16	Tools, Equipment and Consumable Materials Used for Valeting and Detailing (T/508/3624)	1	21	15

Group E – Mechanical Electrical Trim (MET)

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV21	Air & Liquid Cooling System Components and Operation (J/508/3627)	1	20	15
L1MV27	Vehicle Steering and Suspension System Components and Maintenance (4 wheels or more) (J/508/3630)	1	30	22
L1MV28	Light Vehicle Braking System Components and Maintenance (L/508/3631)	1	30	21
L1MV68	Remove and Replace Interior and Exterior Trim (L/507/9403)	1	26	18
L1MV47	Electrical Foundation Skills (J/507/9402)	1	29	21
L1MV48	Lighting System Maintenance (L/508/3645)	1	30	20
ET136	Electric Vehicle Awareness (M/505/4249)	1	8	4

Group F – Refinishing

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV51	Vehicle Paint Preparation (H/507/8709)	1	18	13
L1MV52	Application of a Topcoat and Minor Defect Rectification (J/508/4695)	1	26	19
L1MV53	Spray guns and Their Components (F/508/4629)	1	22	18
L1MV54	Spraying Techniques (T/508/4630)	1	24	19
L1MV55	Primers and Sealers (A/508/4631)	1	24	19
L1MV56	Applying Primers and Sealers (J/508/4633)	1	21	13
L1MV57	Surface Preparation (L/508/4634)	1	26	21
L1MV58	Vehicle Masking (Y/508/4636)	1	31	23
L1MV59	Cleaning and Maintaining a Spray Gun (K/508/4639)	1	21	16
L1MV60	Interior Cosmetic Repair Techniques (T/508/4644)	1	28	22
L1MV61	Panel Joint Sealing (A/508/4645)	1	16	13
L1MV62	Removing and Applying Graphics and Lettering (F/508/4646)	1	17	13

Group G – Body

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV63	Vehicle Damage Assessment (L/508/4648)	1	26	22
L1MV64	Metalwork and Panel Fabrication (J/508/4650)	1	30	22
L1MV65	Panel Removal and Refitting (R/508/4652)	1	24	16
L1MV69	Metal Preparation (D/508/4654)	1	21	16
L1MV70	Reshaping Minor Panel Damage (H/508/4655)	1	21	16
L1MV71	Application of Body Fillers (K/508/4656)	1	27	22
L1MV72	Resistance Spot Welding (M/508/4657)	1	23	17
L1MV73	Introduction to MAG Welding (Y/507/8710)	1	22	18
L1MV74	Paintless Dent Removal Techniques (T/508/4658)	1	24	19
L1MV75	Adhesive Bonding and Mechanical Fastening (A/508/4659)	1	28	21

Group H – Valeting

Unit Ref	Unit Title and ID Number	Level	TQT	GL
L1MV76	Vehicle Exterior Valeting and Detailing (Y/508/3647)	1	20	15
L1MV77	Engine Bay Valeting and Detailing (D/508/3648)	1	20	15
L1MV78	Vehicle Interior Valeting and Detailing (H/508/3649)	1	20	15
L1MV79	Cleaning and Maintenance of Folding Roofs (Y/508/3650)	1	15	10

UNIT REF: L1MV01	UNIT TITLE: HEALTH AND SAFETY IN THE WORKPLACE

Level: 1	GL: 21 Hours	TQT: 29 Hours
Overview: This unit introduces learners to the health and safety knowledge requirements when carrying out simple maintenance and repair tasks in the workplace. This unit covers the general requirements of health and safety in the workplace including personal responsibilities, common hazards and risks, manual handling, health and safety information, fire prevention and emergency evacuation procedures. Learners are required to complete a plan of the workplace highlighting the Health and Safety information, equipment and notices.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know health and safety requirements and information used in the workplace	1.1 State their personal responsibilities for health and safety in the workplace 1.2 Identify common hazards and risks when working in the workplace 1.3 Identify the need to be aware of the actions of others in the working environment 1.4 Locate the main health and safety information and notices provided in the workplace
2. Know the safe manual handling techniques to be used in the workplace	2.1 State safe manual handling practices and procedures 2.2 Identify common manual handling equipment used in the workplace
3. Know the local legislation procedures associated with working in the workplace	3.1 Identify the main substances hazardous to health in the workplace 3.2 State the appropriate methods to dispose of waste materials in the workplace
4. Know about fire prevention and emergency procedures	4.1 Identify the three elements that produce a fire 4.2 Identify different types of fire extinguisher and their uses 4.3 State the procedures to follow in an emergency and the evacuation of the premises
5. Be able to identify the main health and safety information, equipment and notices in the workplace	5.1 Identify the main health and safety information in the workplace 5.2 Identify the main health and safety equipment in the workplace 5.3 Identify the main health and safety notices in the workplace

Evidence Requirements
You must be observed by your assessor completing all of the activities listed below on at least one occasion:
Locating and recording the location of the main health and safety information in the workplace
Locating and recording the location of the main health and safety equipment in the workplace
Locating and recording the location of the main health and safety notices in the workplace

Unit Content	Assessment Criteria
Personal responsibilities to include: • following health and safety notices and instructions • complying with instructions and procedures • using PPE and VPE equipment • behaving responsibly and safely • being aware of others **Common hazards and risks associated with:** • electrical equipment and trailing leads • airlines and air powered tools • hazardous substances such as: fuels, de greasers, cleaners, thinners • movement of vehicles • waste materials • loose tools and equipment • lifting, jacking and supporting vehicles • inappropriate behaviour • failing to use appropriate PPE and VPE **Awareness of others to include:** • the risk posed by the action and conduct of colleagues in immediate vicinity • the possible risks to others posed by your own actions and conduct • the risks posed by the type of work being carried out by colleagues **Main health and safety information and notices to include:** • fire and emergency exits • actions in the event of a fire or emergency • health and safety instructions • use of health and safety equipment	1.1, 1.2, 1.3, 1.4
Safe manual handling practices and procedures to include: • use of PPE • correct lifting technique • carrying technique • how to find current manual handling information **Manual handling equipment to include:** • jacking equipment • cranes • hoists • chains, slings, chains and wire ropes • vehicle lifts and stands • skates and dollies • trollies and sack trucks	2.1, 2.2
Common hazardous substances include: • liquids – petrol, diesel, oil, brake fluid, cleaners, paint, thinners • gases – exhaust, welding and heating equipment • solids – used and contaminated components **Procedures for disposing of waste materials to include:** • waste oil and filters • old units and components • cleaning materials • volatile materials – petrol filters, petrol engine components • used vehicle body materials, paint, thinners	3.1, 3.2

Fire prevention and emergency procedures to include: **THREE elements necessary for a fire** • Oxygen • Fuel • Ignition source **Fire extinguishers to include:** • water • powder • gas – CO2 **Procedures to follow in an emergency to include:** • in the event of a colleague suffering an electric shock • in the event of a serious accident • sounding alarm • use of appropriate fire extinguisher • evacuation of premises	4.1, 4.2, 4.3

UNIT REF: L1MV02	UNIT TITLE: LOCATING, INTERPRETING & USING TECHNICAL INFORMATION

Level: 1	GL: 12 Hours	TQT: 17 Hours
Overview: This unit provides the learners with the basic knowledge in how to identify and access the technical information required to complete maintenance and repair activities. Learners will be expected to locate, interpret and use the technical information required for effective maintenance and repair procedures and activities.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know where to find technical information	1.1 State the reasons for accessing technical information used in maintenance and repair 1.2 State the reasons for using technical information used in maintenance and repair
2. Know the different types and location of technical information	2.1 Identify the range of technical information types available for maintenance and repair 2.2 Locate and interpret technical information required for maintenance and repair
3. Know how to locate identification numbers on vehicles and components	3.1 Identify the vehicle registration number 3.2 Identify the location of the chassis/frame number 3.3 Identify the location of the engine number 3.4 Identify component part numbers
4. Be able to access, interpret and use technical information	4.1 Access and use technical information to locate identification and component numbers 4.2 Interpret and use technical information to carry out maintenance and repair activities

Evidence Requirements
You **must be observed by your assessor** completing **all** of the tasks below on **at least one** occasion: (Note: the tasks can be referenced to other appropriate units within the qualification)
Accessing and using technical information to locate identification numbers.
Interpreting and using technical information to carry out maintenance and repair activities

Unit Content	Assessment Criteria
Reasons for accessing technical information could include: • Manufacturers updates • Service and maintenance information and procedure's • Technical details • Component manufacturers information • Service and repair times **Reasons for using technical information to include:** • Service and repair times • Settings and capacities • Service routines • Diagnostic information • Wiring diagrams • Service and repair information	1.1, 1.2
Identifying, locating and interpreting the range of technical information sources to include: • Manufacturer online facilities • Component manufacturers information, including Web site information • Parts books and references • Service recalls • Computer-based service and repair information • Service manuals • Different types of service publications • Wall charts	2.1, 2.2
Location of identification numbers could include: • Vehicle registration number • Vehicle Identification Numbers (VIN) • Identification numbers • Engine • Transmission • Chassis/frame plates • Part numbers • Paint codes • Component part numbers	3.1-3.4

UNIT REF: L1MV03	UNIT TITLE: APPLYING ENGINEERING TECHNIQUES IN AN AUTOMOTIVE ENVIRONMENT

Level: 1	Total Unit Hours: 17
Overview: This unit will provide the learner with the knowledge and skills to use engineering techniques to include: measuring, marking out, and drilling. The learner will use a variety of fixing methods to accurately fit vehicle number plates.	

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know how to select and wear the correct PPE and work safely	1.1 Identify and wear the correct PPE and work safely throughout the task
2 Know about vehicle materials	2.1 Use suitable methods to identify vehicle materials to include: a. Steels b Aluminium c Plastics
3 Know how to use templates, and automotive/engineering tools	3.1 List tools for: a. Measuring b. Marking out c. Drilling d. Fixing and securing mechanical fastenings 3.2 State the advantages of preparing and using templates, prior to fitting vehicle number plates.
4 Know a variety of mechanical and adhesive fixings and fastenings	4.1 List different types of fixings and fastenings, which are suitable to secure vehicle number plates to include: a. Mechanical b. Adhesive
5 Be able to use templates, and automotive / engineering tools to fit vehicle number plates	5.1 Demonstrate how to carry out checks to tools prior to their use 5.2 Demonstrate how to clean and prepare surfaces prior to fitting vehicle number plates 5.3 Demonstrate the use of templates and automotive/engineering tools
6 Be able to clean the work area and leave in it 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** completing the task listed below on **at least one** occasion:
measuring, marking out and drilling
fitting a set of vehicle number plates

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
Vehicle material to include: • identification of materials – visual, identification codes and technical data / repair research method information • materials – vehicle steels, thermoplastic, thermoset plastic and aluminium	2.1-2.2
Know and use of templates, and automotive / engineering tools to include: • tools and equipment to include- Tape measure, ruler, masking tape, marking equipment, hand drill (electric, air, battery) screwdrivers, rivet gun • techniques to avoid damage to vehicle paintwork, components and trim • quality checks • ensure all tools are in good condition and suitable for the job • the use of prepared templates to aid accurate fitting • legal requirements • alignment • securing	3.1-3.2
Fixings and fastenings to include: • suitable fixing tapes and adhesives • plastic screws, nuts, security fastenings and rivets / rivet nuts	4.1

UNIT REF: L1MV87	UNIT TITLE: KNOWLEDGE RELATING TO CORROSION PROTECTION

Level: 1	GL: 10 Hours	TQT: 12 Hours
Overview: This unit will provide the learner with the knowledge of how to protect vehicle bodies from corrosion by applying suitable products to areas such as: the backside of panels and vehicle body cavities.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know the purpose of the corrosion protection process.	1.1 State the reasons for applying corrosion protection materials 1.2 Identify areas where corrosion protection materials are used
2 Know the tools and equipment which are used to apply corrosion protection materials.	2.1 Identify tools and equipment which are used to apply corrosion protection materials 2.2 State the uses for tools and application equipment 2.3 Outline how to set up corrosion protection application equipment
3 Know how to apply corrosion protection materials.	3.1 Identify information which supports the application of corrosion protection materials 3.2 Identify corrosion protection materials and their appropriate uses 3.3 Outline different methods of applying corrosion protection materials
4 Know how to prevent damage to corrosion protection materials.	4.1 Give examples of how corrosion protection materials may become damaged 4.2 Outline how to prevent corrosion protection materials from becoming damaged

Unit Content	Assessment Criteria
Reasons for applying corrosion protection materials to include: • protecting vehicle body cavities • repelling water and moisture • replacing the original protection after completing body repairs • maintain manufacturers warranties • protecting the underbody of the vehicle **Areas where corrosion protection materials are used to include:** • vehicle body cavities • internal sill sections • the backside of body panels, such as doors and tailgates • the underbody of the vehicle • under the wheel arches • welded seams • under the bonnet	1.1, 1.2
Tools and equipment which are used to apply corrosion protection materials to include: • different types of compressed air spray gun • a selection of interchangeable lances • attachments	2.1, 2.2, 2.3

• paint brushes **Uses for tools and application equipment to include:** • applying the corrosion protection materials • lances providing 360º spraying and long reach capabilities • accessing internal and restricted areas **How to set up application equipment to include:** • setting the spraying pressure • adjusting the fan • fitting the attachments • attaching the lances • adjusting the flow of the material • testing prior to use	
Information which supports the application of corrosion protection materials to include: • material safety data sheets • technical data sheet • manufacturers guidance and instructions • researched repair methods **Corrosion protection materials and their appropriate uses to include:** • underbody seal types ('Schutz') • cavity wax types • suitability and where to use different materials • different coloured and clear materials • vehicle manufactures recommendations and material specifications **Different methods of applying corrosion protection materials to include:** • paint brush • spray gun • aerosol	3.1, 3.2, 3.3
Examples of how corrosion protection materials may become damaged to include: • stones and rough ground • collision damage • jacking a vehicle • raising a vehicle on a lift / ramp • using 'wheel free' lift arrangements • during panel repair and replacement **How to prevent corrosion protection materials from becoming damaged to include:** • carrying out checks to ensure lifting and jacking equipment has suitable pads and protection • using protection between the underbody panels and 'wheel free' lifting arrangements • protecting the coatings from intense heat • protecting the surrounding areas during repair • removing the minimum amount of the protective coating during repairs	4.1, 4.2

UNIT REF: L1MV04	UNIT TITLE: KNOWLEDGE RELATING TO AUTOMOTIVE FOUNDATION SKILLS

Level: 1	GL: 17 Hours	TQT: 25 Hours
Overview: This unit will enable the learner to develop the knowledge for tools, equipment, measuring devices and materials used in simple repair, servicing, maintenance activities and the materials used in vehicle construction: Learning outcome 1 relates to the knowledge required when using a range of mechanical measuring and electrical equipment, locking and securing devices, hand tools and workshop equipment used within a workplace environment. Learning outcome 2 introduces the learners to the range of materials and their applications used in vehicle construction.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the basic tools, equipment and measuring devices used within a workplace environment	1.1 State the main units of measurement related to automotive repair 1.2 Identify the main measuring equipment used in an automotive environment 1.3 State the basic principles of electrical circuits and components 1.4 Identify electrical measurement equipment used in an automotive environment 1.5 Identify locking and securing devices used in an automotive environment 1.6 Identify common hand tools used in an automotive environment 1.7 Identify common workshop equipment used in the automotive environment
2. Know the materials used in vehicle construction	2.1 Identify the ferrous, non-ferrous and non-metallic materials used in vehicle construction 2.2 Identify the applications of ferrous and non-ferrous materials used in vehicle construction 2.3 State the common terms applied to the materials used in vehicle construction

Unit Content	Assessment Criteria
The main units of measurement related to vehicle repair include: • Length, Area, Volume, Mass, Force, Velocity, Pressure, Temperature, Torque **Measuring equipment include:** • Rule/Tape, Calliper, Feeler Gauge, Volume Measures, Vernier Calliper, Micrometer, Dial Gauges, Torque Wrenches, Multimeter, Pressure gauge **The basic principles of electricity and electrical circuits include:** • Basic electrical units; volts, amps, ohms, watts • The basic principle of alternating and direct current. • Ohms law to resolve simple electrical problems. • Series and parallel circuits. • The main electrical symbols; battery, switch, fuse, lamp, cables joined, cables crossed, relay, resistor • Simple electrical wiring diagrams. • Electrical conductors e.g. gold, silver, copper, brass • Electrical insulators e.g. rubber, Bakelite, plastic, paper, air **Electrical measurement equipment include:** • The difference between analogue and digital electrical meters. • The advantage and uses of digital and analogue meters. • The use of ammeter, voltmeter, ohmmeter and multi-meter. • Multi-meters for simple electrical measurements; voltage, volt drop, current flow, circuit/component resistance **Locking devices and securing devices include:** • Fixing devices; nuts, bolts and screws, • Locking and securing devices; lock nuts, split pins, locking wire, tab washers, chemical thread locking • Screw threads, types and applications. **Common hand tools to include:** • Files, hacksaw, hammers, screwdrivers, pliers, types of spanner, sockets, torque wrenches, feeler gauge, micrometer, punches, air drill, electrical hand drill, drill bits, vices, taps and dies, broken stud removers, • The use and care of common hand tools **Workshop equipment include:** • Common workshop equipment: hydraulic jacks /scissor jacks, axle stands / paddock stands, pillar drills, air tools, vehicle lifts, cranes, hoists, dollies, skates • The preparation and use of workshop equipment.	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7
Materials and applications used in light vehicle construction include: **Ferrous and non-ferrous metals:** • carbon steel, steel alloys, cast iron, aluminium, brass, copper, lead **Non- metallic materials:** • Glass, safety glass, reinforced plastic, Kevlar, rubber **Applications of materials in vehicle construction include:** • Vehicle bodies, bumpers, wheels, interior components, steering and suspension components **Terms relating to metals:** • Hardness, toughness, ductility, elasticity, tenacity, malleability, plasticity **Terms relating to vehicle components:** • tensile stress, compressive stress, yield stress, shear force	2.1, 2.2, 2.3

UNIT REF: ET133	UNIT TITLE: INTRODUCTION TO LOW CARBON TECHNOLOGIES IN THE AUTOMOTIVE INDUSTRY

Level: 1	GL: 20 Hours	TQT: 28
Mapping: Based on IMI SSC Electric vehicle NOS 2011		
Overview: This unit aims to encourage learners to realise how their actions in driving vehicles can impact the environment and some of the measures vehicle manufacturers are taking to reduce carbon outputs.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner should be taught:
1 Know how their own actions can affect the environment	1.1 Examples of driving styles that harm the environment to include: a excessive acceleration b excessive deceleration c driving at high speed d idling engine whilst stopped e incorrect gear selection f use of auxiliary equipment e.g. air conditioning 1.2 Examples how they can reduce carbon emissions when travelling to include: a carefully planned routes b use motor transport less- walk, cycle c car sharing d use public transport e more efficient vehicles- lower engine size, alternative fuel vehicles f correctly inflated tyres g properly serviced and maintained vehicles h do not carry excessive loads e.g. empty boot i keep windows closed to reduce drag
2 Know the impact that a conventional vehicle has on the environment	2.1. The exhaust emissions that a conventional vehicle produces to include: a carbon monoxide b carbon dioxide c oxides of nitrogen d sulphur dioxide e soot particles f hydrocarbons 2.2 The impact of exhaust emissions on people and the environment to include: a carbon monoxide – colourless, odourless, poisonous to animal life b carbon dioxide – greenhouse gas that contributes to global warming c oxides of nitrogen – can cause respiratory conditions, smog and acid rain d sulphur dioxide – pollution and acid rain e soot particles – causes respiratory problems and cancers f hydrocarbons - causes respiratory problems, liver damage and cancers 2.3 The meaning of 'carbon footprint' to include: a the amount of greenhouse gases b most commonly carbon dioxide c produced over the life time of a vehicle d during the manufacture, running and disposal of the vehicle at the end of its working life.

3 Know some of the actions vehicle manufacturers' are taking to reduce carbon emissions	3.1 The common vehicle parts that may be recycled to include: a metals b plastics c oils d other fluids e.g. brake fluid and antifreeze e batteries f refrigerant from air conditioning systems g glass h tyres 3.2 The new types of propulsion available in modern and future vehicles to include: a low emission conventional engine b alternative fuels including LPG and bio-fuel engines c hybrid d electric e hydrogen powered vehicles 3.3. The benefits of alternative fuel types and propulsion methods for the user and environment to include: a low emission conventional engine, e.g. lean burn- improvement on normal engines, but not vastly b alternative fuels including LPG and bio-fuel engines - normally uses a mixture of normal fuels and gas, or fuels produced from vegetable or plant extracts resulting in reduced engine emissions, renewable, and less processing required than crude oil c hybrid vehicles using a combination of power sources such as conventional engine and electric motors - resulting in reduced emissions, improved fuel consumption d electric vehicles using solely electric motors to propel the vehicle. Benefits are zero emissions and low running cost, but expensive at present and limited range - expected to increase in numbers considerably over the next few years e hydrogen powered vehicles- zero emissions but limited availability and hazardous 3.4 How bio-fuels can reduce carbon emissions to include: a potential to reduce greenhouse gases because the carbon in the plant matter from which the fuel is produced comes from the carbon dioxide absorbed by the plants over the course of its life, unlike fossil fuels where the carbon has been locked up under ground for millions of years and then released to the atmosphere as carbon dioxide when burnt during combustion. b impact on land being used for growing fuel crops instead of food crops.

No Content or Evidence Requirements

UNIT REF: L1MV66	UNIT TITLE: MOVING LOADS AND VEHICLE LIFTING

Level: 1	GL: 15 Hours	TQT: 22 Hours
Overview: This unit introduces the learner to the knowledge and skills essential for the safe working operations when manually lifting, moving loads and when using manual handling equipment. The unit also covers the use of vehicle lifting and securing equipment, learners are required to use effective and safe working practices whilst using this equipment.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the risks of manual handling and moving loads.	1.1 Identify the PPE to be used when using moving and lifting equipment 1.2 Outline local manual handling guidelines and regulations. 1.3 Identify personal hazards and risks associated with lifting and moving heavy objects and loads. 1.4 Identify hazards and risks with lifting and moving heavy objects and loads using appropriate equipment.
2 Know appropriate methods of lifting, moving and securing heavy loads.	2.1 Identify a range of equipment for lifting, moving and securing loads. 2.2 State the purpose of different types of equipment for lifting, moving and securing loads. 2.3 State the safe use of lifting and moving load equipment. 2.4 Identify the visual checks to be made on lifting, moving and securing equipment prior to use..
3 Know safe manual handling procedures.	3.1 Outline the methods and precautions to be taken when lifting, moving and securing loads manually. 3.2 Outline the methods and precautions to be taken when lifting, moving and securing loads using lifting/moving equipment. 3.3 Outline the methods and precautions to be taken when lifting and supporting a vehicle.
4 Be able to use safe manual handling procedures.	4.1 Locate the information to lift and secure the vehicle safely. 4.2 Demonstrate the methods to manually lift, move and secure an engine / transmission component. 4.3 Demonstrate the methods to lift, move and secure an engine / transmission using lifting/moving equipment. 4.4 Use appropriate lifting and supporting equipment to raise and secure a vehicle safely.
5 Be able to clean the work area and leave in a safe condition.	5.1 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 the following tasks below on **at least one** occasion: (Note: this tasks can be referenced to other appropriate units within the qualification.)
Locating the information to lift and secure the vehicle safely
Lifting, moving and securing an engine / transmission component using safe manual handling guidelines.
Lifting, moving and securing an engine / transmission using lifting/moving equipment safely.
Lifting and supporting a vehicle using appropriate equipment safely.

Unit Content	Assessment Criteria
PPE to include: • **Safety boots, safety hat, overalls, safety gloves, reflective jacket/tabard** **Manual handling guidelines to include:** • Local manual handling operating regulations and guidelines that individuals and employers need to follow. Risk assessments. **The risks of lifting and moving heavy objects including pain and injury to:** • Arms, legs and joints, slips, trips, and repetitive strain injuries of various sorts. **The risks of lifting and moving heavy objects using mechanical equipment include:** • Using equipment in a safe manor • Not putting others at risk whilst moving heavy objects • Maintaining mechanical equipment used for moving loads • No unauthorised use of mechanical equipment	1.1, 1.2, 1.3, 1.4
Range and purpose of equipment to lift, move and secure loads include: • trolley • engine hoist • jacks • crane • hoists • sack and pallet truck • axle stands • vehicle lifts • dollies and skates • air jacks • chains, slings and wire ropes **Safe use of equipment for lifting and moving loads to include:** • use of PPE • safe working loads (SWL) lifting capacity • care when moving loads over uneven surfaces • appropriate selection of equipment for the task • avoiding obstructions and floor based obstacles- cables and leads • safe working environment for equipment being used • stability of loads whilst being moved • condition and well maintained equipment **Visual checks include:** • leaks and mechanical condition • physical damage • seized or broken components • correct operation of components • damaged wiring • cuts and frayed straps • cracks and bent structures • certificates of conformity (insurance)	2.1, 2.2, 2.3, 2.4

Unit Content Contd.	Assessment Criteria
Moving loads manually to include: • safe personal lifting limits • use of PPE • planning the lift • adopting a safe position • feet position • where is the load going to • will I need help with lifting the load • removal of obstructions from packaging • will I need to change grip in moving the load **Lifting and moving loads using mechanical equipment to include:** • working within the Safe Working Limits (SWL) of the equipment • training and authorised to use mechanical equipment • equipment condition • follow safe procedures when using mechanical equipment • informing others • reporting of faults of equipment to authorised persons • safe, secure and level ground loads will be transported across • using equipment risk assessments **Lifting and supporting a vehicle to include:** • inspect the floor jack or lift for fluid leaks before use • using vehicle manufacturer specifications for vehicle weight. • using manufacturer specifications for axle stand capacity. • following correct procedure when using floor jacks and vehicle lifts • ensure the vehicle is placed on a hard, level surface • raising the vehicle using manufacturer specified lifting points • when the vehicle is raised, it must be supported • chock wheels before removing the jack • use vehicle manufacturer specifications for vehicle weight.	3.1, 3.2, 3.3

UNIT REF: L1MV50	UNIT TITLE: ACCIDENT REPAIR CORE KNOWLEDGE AND SKILLS

Level: 1	GL: 20 Hours	TQT: 25 Hours
Overview: This unit will provide the learner with the knowledge and skills to locate and interpret vehicle and technical information. In addition to this, the learner will be able to identify and use different forms of measurements which are used in the accident repair environment.		

KNOWLEDGE LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to find and interpret information	1.1. Identify vehicle information 1.2. Interpret vehicle information
2. Know how to isolate vehicle electrical circuits	2.1. Identify the hazards involved with isolating vehicle electrical systems 2.2. Outline the process involved in isolating vehicle electrical system
3. Know a range of vehicle body shapes	3.1. Identify a range of vehicle body shapes 3.2. Identify the names of vehicle panels and their location
4. Know the types of measurements which are used in accident repair environment	4.1. Identify units of measurements which are used in accident repair environment 4.2. Give examples of how measurements relate to vehicle accident repair tasks
5. Be able to locate and use vehicle information	5.1. Locate and use vehicle information
6. Be able to use measurements within accident repair tasks	6.1. Demonstrate how to use different measurements when carrying out accident repair tasks

Evidence Requirements
You **must be observed by your assessor** completing all of the following tasks on **at least one** occasion.(The evidence requirements can be referenced to other units)
Locating and interpreting vehicle information
Carrying out tasks which incorporates the use of **all** the forms of measurement below.
• length • volume • pressure • temperature • torque • weight
These tasks may be referenced to other units within the qualification.

Unit Content	Assessment Criteria
Identify vehicle information to include: • the vehicle identification number • paint type and codes • year of registration **Interpret vehicle information to include:** • referencing information such as: • registration plates to the year of the vehicle, colour codes to the paint name and paint type, vehicle body type and trim types	1.1,1.2
The risks involved with isolating vehicle electrical systems to include: • electric shock • burns • fire **The processes involved with isolating vehicle electrical systems to include:** • variations in different manufacturers methods • safety • following instructions and repair methods • recognising own limitations and knowing when to refer the process to someone who is specialised or more experienced • how to recognise of high voltage systems	2.1, 2.2
A range of vehicle body shapes will include: • two and four door saloon • three and five door hatchback • estate • coupe • convertible / cabriolet • sport Utility Vehicle (SUV) • multi-purpose vehicles (MPV) • 4x4 • car based van • pickup • wheelchair accessible vehicles **Vehicle panel names and their location will include:** • floor • sill • A, B, C & D posts • cant rail • roof • chassis • bonnet • boot lid • tailgate • doors • wings • quarter panel • bumper	3.1, 3.2

Units of measurements which are used in accident repair environment include: • meters and millimeters • volume • pressure • temperature • torque • weight **Examples of how measurements relate to vehicle accident repair tasks to include:** • panel gaps, panel cuts and vehicle body measurements • foundation material and topcoat amounts • mixing ratios • spraying pressure and setting up air operated tools and equipment • flash off and curing temperatures of accident repair materials • spray booth clearance times • the tightening of fastenings to secure vehicle panels and trim • safe working loads on lifting equipment • marking out panel designs	4.1, 4.2

UNIT REF: L1MV85	UNIT TITLE: VEHICLE MATERIALS AND JOINING METHODS

Level: 1	GL: 17Hours	TQT: 21 Hours
Overview: This unit will provide the learner with the knowledge and skills to identify and locate a range of vehicle materials, joining methods and chassis layouts.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know different vehicle construction materials and their applications	1.1 Identify vehicle construction materials 1.2 State applications for different vehicle construction materials
2 Know different methods of constructing vehicles	2.1 Identify different methods of assembling vehicles 2.2 Identify methods of joining vehicle panels and structures
3 Know the properties of vehicle construction materials	3.1 State the properties of vehicle construction materials
4 Know different types of chassis design	4.1 Identify types of vehicle chassis
5 Be able to use researched repair methods to identify different construction materials	5.1 Demonstrate how to use researched repair methods to identify vehicle materials

Evidence Requirements
You **must be observed by your assessor** completing all of the following tasks on **at least one** occasion.
Using research repair methods to identify the:
body panel material
type of plastic used for the bumpers
the joining methods used on the rear quarter panel

Unit Content	Assessment Criteria
Identify vehicle construction materials to include: • glass • plastic • mild steel • high strength steel • aluminium • carbon fibre • fibreglass / glass reinforced plastic **Applications for different vehicle construction materials to include:** • glass - vehicle windscreens, roofs and side windows, rear quarter light window • plastic - bumpers and trims • mild steel - body panels and chassis • high strength and ultra-high strength steel - passenger cell, structural panels, and body panels • aluminium - body panels and trim • carbon fibre - body panels and trims • SMC / fibreglass / glass reinforced plastic - vehicle bodies, panels and aftermarket spoilers and body kits	1.1-1.2
Different methods of assembling vehicles to include: • vehicle manufactures - assembly lines and factories • handmade **Methods of joining vehicle panels and structures:** • welding • brazing • a range of mechanical fastenings which are appropriate to secure vehicle panels • clinching, and folded edges • structural adhesives (single and 2 pack)	2.1-2.2
The properties of vehicle construction materials to include: • lightweight • corrosion resistance • strength • joining • moulding • flexibility • behaviour when involves in a collision	3.1
Identify vehicle chassis types to include: • separate chassis / ladder chassis • monocoque	4.1

UNIT REF: L1MV86	UNIT TITLE: THE RETAIL MOTOR INDUSTRY

Level: 1	GL: 13 Hours	TQT: 14 Hours
Overview: This unit will provide the learner with the knowledge of organisations within the retail motor industry, in addition to this, the learner will identify trade associations and how to qualify for professional registers.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know vehicle repair organisations within the retail motor industry	1.1 Identify the different types of vehicle repair organisations 1.2 Outline the basic structure of a typical vehicle repair business 1.3 Outline the function of a franchised dealership compared with an independent workshop 1.4 State the main procedures which are involved when receiving a vehicle for repair 1.5. Give examples of communication methods in a workshop / dealership and when they may be appropriate 1.6 Indicate sources of information used in vehicle repair
2 Know different trade associations	2.1 Identify a range of trade associations 2.2 State the benefits of trade associations
3 Know the benefits of automotive professional registers	3.1 Identify the purpose of automotive professional registers 3.2 State how to qualify for professional registers 3.3 Outline the benefits of professional registers

Unit Content	Assessment Criteria
Different types of vehicle repair organisations • franchise dealer • Independent repairer • fast fit • fleet operator • specialist repairers - SMART repair, automatic transmissions • body repairer • vehicle valeting • breakdown services - AA, RAC **Definition of terms to include :** • approved repairer • multi-franchise dealer • aftersales **The basic structure of a typical vehicle repair business to include:** • manger • assistant manager	1.1-1.6

- quality control
- reception staff
- vehicle damage assessor
- technician
- valeter
- driver
- parts person
- service staff
- administration
- sales
- cleaners
- supervisors
- security staff

The functions of the main sections of a typical vehicle repair business to include:

- service reception
- bodyshop
- vehicle repair workshop
- MOT bay
- SMART repair
- vehicle recovery
- vehicle valeting
- parts department
- main office
- vehicle sales
- warranty
- how these areas must connect to provide service to the customer

The function and benefits of a Franchise Dealership to include:

- differences between a franchise dealership and independent repairer
- expert staff answering the customers questions
- support from a manufacturer for repairs and warranty work
- experts on a particular brand
- latest deals
- part-exchange deals
- a range of demonstrators models
- finance
- leasing facility / deals

The main procedures when receiving a vehicle for repair to include:

- carrying out pre and post work checks
- organising, issuing and monitoring courtesy vehicles
- locating and using correct documentation and information
- specific procedures for carrying out repairs and servicing
- identifying vehicle specifications and component specifications
- identifying oil and fluid specifications
- identifying and locating specialist equipment and tools
- referencing vehicle and component identification codes
- recording vehicle repairs and maintenance – job cards, completion of service books

Identify procedures for:

- the referral of problems
- the reporting of delays
- authorising additional work which has been identified during repair or maintenance
- accessing help or assistance

Workshop procedures which promote:

- care of the customer's vehicle
- care of the customer's personal possessions
- the vehicle presentation when returning it to the customer

Methods of communication in a workshop/dealership to include: • word of mouth • discussions • passing on information • carrying out instructions • drawings/sketches and repair methods • telephone • vehicle job cards • posted communication (i.e. notice boards) • vehicle manufacturer's bulletins • email • internet • text • video conferencing • internet communication -Skype, FaceTime • online manufacturers data / subscriptions, for example repair methods **The effectiveness of each of the above forms of communication in terms: conveying information**: • accurately • enough information • promptly **Include how distance, location or job responsibility can determine lines of communication** **How communication of information may change when given to informed and un-informed people** **Outline the importance of:** • listening skills • asking questions • requesting assistance or advice • developing relationships with colleagues • courtesy • politeness • listening skills • tone and attitude **Sources of information used in vehicle repair to include:** • vehicle and equipment manuals • parts lists • diagnostic - scopes and graphs • internet based • technical data sheets • health and safety data sheets • repair methods • drawings • printouts - emissions • job cards • checklists	
Identify and provide examples of trade associations which represent the motor industry **Benefits of trade associations** to **include:** • the representation of franchised car and commercial vehicle dealers, independent garages, bodyshops, motorcycle dealers and providers of sales and services to motorists and businesses • their influence on motor trade matters • their focus on raising quality and standards throughout the industry • how they guide and support members • how they aid in promoting best practice	2.1-2.2

• their campaigning for the retail motor industry, and includes lobbying parliament / government • how they help and provide advice on customer or employee problems, legal issues, compliance and trading standards • how they assist members with finance, insurance, warranties, energy, tools etc.	
Identify the purpose of automotive professional registers • professional registers identifies individuals in the automotive industry who have been recognised for their experience, professionalism and commitment to ethical working practices and for continually keeping their knowledge and skills up to date with industry training **State how to qualify for professional registers by:** • levels of qualification / achievements • being employed in the motor industry and have a certain amount of industry experience • application • providing evidence of continual learning and development activities to remain on the register • industry professional body membership (post nominal letters) **The benefits of professional registers:** • assists in raising standards within the motor trade • displays professional knowledge, skills and competence • provides assurance to customers of a quality service • increases public and consumer confidence in the industry	3.1-3.3

UNIT REF: L1MV06	UNIT TITLE: PREPARATION TO BECOME A VEHICLE DRIVER

Level: 1	GL: 9 Hours	TQT: 10 Hours
Overview: This unit will provide the learner with the knowledge which learner drivers need to know before they begin to drive. This includes applying for their first driving licence, becoming familiar with the Highway Code, arranging driving lessons and the booking a driving test.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the process of applying for their first driving licence	1.1. State the name given to a 'first' driving licence 1.2. Identify an organisation that deals with driving licence applications 1.3. Identified the age of which a person can apply for their first driving licence 1.4. List reasons why a person may be refused a first licence
2. Know the purpose of the Highway Code	2.1. Outline the purpose of the Highway Code 2.2. Give examples of the content in the Highway Code 2.3. List various formats of the Highway Code
3. Know the meaning of a sample of road safety signs	3.1. State the meaning of a sample of common road signs
4. Know how to identify an approved driving school and instructors	4.1. Give examples of things to consider when choosing a driving school and instructor 4.2. State who to contact regarding poor service or behaviour from: a. A driving school b. Driving instructor
5. Know the content of both the theory and practical driving tests	5.1. Use simple research methods to identify the content and timescale of the: a. Driving theory test b. Practical driving test 5.2. Locate a driving test centre 5.3. List different methods of booking a driving test 5.4. State what documents must be produced at the driving test 5.5. Identify vehicle problems and faults that may prevent it being used for the driving test

'Please note: This unit is intended for those individuals that have not yet applied for a driving licence. If a learner has already obtained a full driving licence this cannot be used as evidence to meet the learning outcomes of this unit'.

The content below is a guide, therefore, the latest driving standards must be consulted to ensure the information delivered to the learners is accurate and up to date.

Unit Content	Assessment Criteria
Applying for your first driving licence to include: • how to apply – various stages / process • provisional licence – restrictions, use of red L plates, supervision when driving (include requirements of the person supervising) and motorways etc. • requirements to qualify for a provisional licence – reasons for being prevented from driving • where to apply for a provisional licence • methods of application – post, online etc. • when / age to apply	1.1-1.4
Recognise the Highway Code and its content to include: • why it is essential – help reduce road casualties • who it applies to - road users and pedestrians • legal implications in the Highway Code – may be prosecuted if disobeyed and used in evidence • content – information for road users, pedestrians, and road signs • formats: audiobook, app, paperback book, etc. **Know a range of road signs to include:** • shapes • colours • meanings • mandatory • warning • regulatory • speed limits	2.1- 3.1
Driving lessons and learning to drive to include: • driver and Vehicle Standards Agency • L plates rules – colour and positioning • finding driving lessons and instructors – display badges, pricing, offers, reputation and courses. • complaints about an approved instructor - Trading Standards Office and Citizens Advice Bureau (for poor service) Driver and Vehicle Standards Agency (for unacceptable behaviour and illegal instructors) • rules for practising with family and friends - see current rules for supervising learner drivers	4.1, 4.2
The driving test to include: **The theory test:** • how to book a driving test – indicate any additional needs or requirements prior to the test, for example dyslexia. • content of the test – timescale, format and practise material • how to locate a theory test centre – research methods, Government websites **The driving test**: • booking the test – highlight any additional needs or requirements before the test • the purpose of the test – dive safely in different road and traffic conditions, know the Highway Code and meet the standard required. • documents to take to the test – theory test certificate and driving licence • what happens during the test – timescale, manoeuvres, types of instruction, routes and know current driving standards • car rules and suitability if used during a driving test – correct documentation, meet the required speed limits, correctly fitted L plates, no warning lights illuminated (e.g., airbag warning light permanently illuminated), check current requirements	5.1- 5.5

UNIT REF: L1MV07	UNIT TITLE: PREPARATION FOR RIDING A MOTORCYCLE OR MOPED

Level: 1	GL: 7 Hours	TQT: 10 Hours
Overview: This unit will provide the learner with the knowledge which learner riders will need to know before they begin to ride a motorcycle on a public highway. This includes applying for their first driving licence, becoming familiar with the Highway Code, arranging riding lessons and booking the riding test.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the process of applying for their first driving licence	1.1 State the name given to a 'first' driving license 1.2 Identify an organisation that deals with driving license applications 1.3 Identified the age of which a person can apply for their first driving license 1.4 List reasons why a person may be refused a first license
2. Know the purpose of the Highway Code	2.1 Outline the purpose of the Highway Code 2.2 Give examples of the content in the Highway Code 2.3 List various formats of the Highway Code
3. Know the meaning of a sample of road safety signs	3.1 State the meaning of a sample of common road signs
4. Know how to identify an approved training body school and instructors	4.1 Give examples of things to consider when choosing an approved training body school and instructor 4.2 State who to contact regarding poor service or behaviour from: a. An approved training body school b. Riding instructor
5. Know the content of both the theory and practical riding tests	5.1 Use simple research methods to identify the content and timescale of the: a. Riding theory test b. Practical riding test 5.2 Locate an approved training body test centre 5.3 List different methods of booking a riding test 5.4 State what documents must be produced at the riding test 5.5 Identify motorcycle problems and faults that may prevent it being used for the riding test

The content below is a guide, therefore, the latest driving standards must be consulted to ensure the information delivered to the learners is accurate and up to date.

Unit Content	Assessment Criteria
Applying for your first driving licence to include: • how to apply – various stages / process • provisional licence – restrictions, use of red L plates, no carrying of unqualified passengers and motorways etc. • requirements to qualify for a provisional licence – reasons for being prevented from riding • where to apply for a provisional licence • methods of application – post, online etc. • when / age to apply	1.1-1.4
Recognise the Highway Code and its content to include: • why it is essential – help reduce road casualties • who it applies to - road users and pedestrians • legal implications in the Highway Code – may be prosecuted if disobeyed and used in evidence • content – information for road users, pedestrians, and road signs • formats: audiobook, app, paperback book, etc.	2.1- 3.1
Know a range of road signs to include: • shapes • colours • meanings • mandatory • warning • regulatory • speed limits	3.1
Riding lessons and learning to ride to include: • legal safety equipment for riding a motorcycle, crash helmet, visors and goggle safety standards approval • suggested PPE for riding a motorcycle • Compulsory Basic Training (CBT) , valid duration of CBT • CBT limits of engine capacity and power output restrictions (DL196) • driver and Vehicle Standards Agency • L plates rules – colour and positioning • finding riding lessons and instructors – display badges, pricing, offers, reputation and courses. • complaints about an approved instructor - Trading Standards Office and Citizens Advice Bureau (for poor service) Driver and Vehicle Standards Agency (for unacceptable behaviour and illegal instructors) • rules for practising with family and friends - see current rules for supervising learner riders	4.1, 4.2
The riding test to include: **The theory test:** • how to book a riding test – indicate any additional needs or requirements prior to the test, for example dyslexia. • content of the test – timescale, format and practise material • how to locate a theory test centre – research methods, Government websites **The riding test**: • booking the test – highlight any additional needs or requirements before the test • purpose of the test – ride safely in different road and traffic conditions, know the Highway Code and meet the standard required. • documents to take to the test – theory test certificate and driving licence • what happens during the test – timescale, manoeuvres, types of instruction, routes and know current riding standards • motorcycle rules and suitability if used during a riding test – correct documentation, meet the required speed limits, correctly fitted L plates, no warning lights permanently illuminated - check current requirements	5.1- 5.5

UNIT REF: L1MV08	UNIT TITLE: REDUCING RISKS WHEN DRIVING VEHICLES

Level: 1	GL: 14 Hours	TQT: 17 Hours
Overview: This unit is aimed at pre-learner drivers and novice drivers. The unit content will provide the learner with the knowledge and skills, which will aid in them in reducing risks by preparing the vehicle and taking responsibility for their behaviour when planning to learn to drive and driving vehicles.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know different types of vehicle pre-use checks	1.1 Identify pre-use vehicle checks 1.2 State the different types of fluid and coolant level checks
2 Know the consequences of failing to carryout pre-use vehicle checks	2.1 Give examples of the consequences of failing to carry out pre-use vehicle checks
3 Know the how to reduce risks when driving vehicles	3.1 Outline how to reduce risks when driving vehicles
4 Be able carryout pre-use vehicle checks	4.1 Demonstrate how to carry out pre-use vehicle checks
5 Be able to check and adjust vehicle fluid and coolant levels	5.1 Demonstrate how to check and adjust vehicle fluid and coolant levels

Evidence Requirements
You **must be observed by your assessor** completing the task listed below on **at least one** occasion:
Carrying out vehicle pre-use checks and reporting any faults
Checking and adjusting the vehicle fluid and coolant levels

Unit Content	Assessment Criteria
Daily pre-use vehicle checks to include checking the vehicle: • is checked in one direction • is sitting square and not leaning • for leaks • panels and trims are secure • exhaust is secure and no excessive noise and smoke • number plates • fuel cap • wiper blades • vehicle loads and loading • restraint systems • lights, indicators, hazard lights and reflectors • windows and mirrors • tyres • fluids • access - doors and locks • instruments, dashboard warning lights and controls • interior - controls, obstructions or loose items • tools, spare wheel and high-visibility vest • breakdown services information **Different types of fluid and coolant level checks which are required:** • power steering • windscreen washers and screen wash • cooling system • engine oil	1.1 -1.2
Examples of the consequences of failing to carryout vehicle pre-use checks will include: • component failure • vehicle breakdowns • poor vision • accidents / collisions • fines and convictions • fatality • leaks • unpredictable vehicle handling • be unnoticed by other road users and pedestrians • being stranded with no breakdown cover and a spare wheel • impact from insecure objects within the vehicle interior	2.1
How to reduce risks when driving vehicles to include: • maintain a calm and appropriate attitude • do not let peer pressure affect driving style • recognising a lack of experience and driving limitations • do not drive after consuming alcohol or drugs • check if any prescribed medication is permitted while driving • avoid distractions such as: mobile phones, loud audio, constant communication with passengers, eating and drinking • overloading with passengers, weight and luggage • taking further training • driving within legal limits • building confidence and anticipation skills when driving in the dark, negotiating bends and overtaking • how to ensure the car is in a safe condition. • learning how to carry out vehicle checks. • planning routes in advance • start with short and less demanding drives • rest when tried to prevent losing concentration • adjust all vehicle mirrors	3.1

UNIT REF: L1MV09	UNIT TITLE: INTRODUCTION TO MOBILE AUTOMOTIVE REPAIR TRADES

Level: 1	GL: 10 Hours	TQT: 11 Hours
Overview: This unit will provide the learner with the knowledge of different types of mobile vehicle repair services and their role within the automotive industry.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know a range of automotive trades which carry out mobile repairs	1.1 Identify a range of automotive trades which carry out mobile repairs 1.2 Give examples of the services which each of the trades provide
2 Know the benefits of mobile repair trades	2.1 State the advantages of mobile repair services
3 Know the limitations of mobile repair trades	3.1 Outline instances where a mobile repair service may not recommended

Unit Content	Assessment Criteria
Automotive trades which provide mobile repairs include: • tyre fitters • paintless dent removal • accident repair services (body and paint) • mechanical, electrical and trim • valeting, detailing and vehicle interior repairs • autoglazing • breakdown services and recovery services / mechanical work **Examples of the services which each trade provides:** • tyre fitters - repair punctures, wheel balancing, remove and replace vehicle tyres. • paintless dent removal - repair panel minor damage without damaging the paint. • accident repair services (body and paint) - remove and refit body panels, repair panel damage and refinish vehicle panels. • MET - removal and replacement of mechanical, electrical and trim components. • valeting, detailing and vehicle interior repairs - clean and enhance the interior and exterior of vehicle surfaces, repair and refinish minor damage to interior upholstery, carpets and trims. • autoglazing - repair vehicle glass, remove and replace vehicle glass and calibrate advanced driver assistance systems. • breakdown services and recovery services / mechanical work - carry out mechanical repairs, tow and recover vehicles from the roadside.	1.1-1.2
State the advantages of mobile repair services • the customer can see the repair taking place • the customer can communicate directly with the Technician • the repair is carried out at a place convenient to the customer • save the customer time and effort	2.1
Instances where a mobile repair service may not recommended • size and extent of the repair • the working environment • working space / area • legal implications • power sources • equipment • timescales • types of products used • vehicle construction materials • specialist vehicles	3.1

UNIT REF: L1MV10	UNIT TITLE: INTRODUCTION TO BUSINESS ENTERPRISE

Level: 1	GL: 12 Hours	TQT: 22 Hours
Overview: This unit will provide learners with the knowledge and skills required to develop business and enterprise ideas.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know the behavioural characteristics and qualities that define an entrepreneur	1.1 Outline the common qualities associated with an entrepreneur 1.2 Outline the common behaviours associated with being an entrepreneur
2 Know how to recognise and resource a business idea	2.1 Give examples of business opportunities 2.2 List the types of resources required to develop a business opportunity 2.3 List the advantages of completing a project plan 2.4 List the types of costs associated with a project
3 Be able to develop a project or business idea	3.1 Discuss and agree a business service or product to develop 3.2 Develop the business idea into a simple project plan 3.3 Discuss the costs and resources associated with the project plan 3.4 Develop the agreed business service or product

Evidence Requirements
You **must be observed by your assessor** completing **all** of the activities listed below:
Discussing and agreeing a product or service with possible costs
Developing a simple project plan
Developing a service or product

Unit Content	Assessment Criteria
Qualities include: • Business focused • Confident • Creative thinking • Delegation skills • Determination • Independent • Risk taker **Behaviours include:** • Positive attitude • Purpose driven • Influencer • Planner • Evaluator • Leader • Objectiveness • Calculating • Self-imposed standards Enthusiastic	1.1, 1.2
Identifying business demand and opportunities from, to include: • Local and National newspapers • Radio • TV • Internet and social media • Market research • Friends and family • Post office and newsagents • Tendering • Local and regional maps • Scanning economic and social scenes **Resources required to develop a business include:** • human • finances • environment • tools and equipment • results of market research **Advantages of project plans to include estimates of:** • business demand • income • expenditure • profit • time frames for individual elements of plan • staffing needs • workplace needs • training needs of staff • tracking progress **Costs associated with a project to include:** • income • expenditure • profit • marketing • staffing needs • workplace needs	2.1, 2.2, 2.3, 2.4

Guidance To Assessors:
Due to the diverse nature of individual projects completed by learners undertaking this unit, the assessor is required to develop the assessment documentation materials to meet with the Assessment Criteria.

Examples Of Projects That May Be Undertaken To Meet With The Assessment Criteria, Learners Produce Plans To Carry Out:

- Winter vehicle inspection in a workshop environment.
- Pre-holiday vehicle inspection in a workshop
- Vehicle exterior / interior valet
- Minor vehicle service
- Paint defect repair
- Supplying vehicle spare parts

Scenario:
Learners work individually or in small groups to identify and agree the activity. Learners discuss and develop plans of the individuals responsibility completing the project including; resources, tools, equipment and materials required to provide the service or product.
Learners produce marketing materials with services or products offered and contact details which are then placed in prominent places to advertise their services or products.
Learners deal with customer enquiries efficiently and effectively, recording the services or products required accurately by the customer.
Learners deal with the customer professionally when the service or product, confirming services or products required and personal contact details. **(vehicle is checked by both learner and customer regarding a pre-work inspection)**.
Learners complete the services or provide the products and appropriate documentation as per customer directions to a good standard of work.
Learners are polite and courteous when the customer is provided with the service or product, **(a post work check is carried out by both parties, and any queries are dealt with effectively).**

A Selection Of The Following Assessment Types May Be Used To Meet The Evidence Requirement's:

- Direct assessor observations
- Products of work completed by the learner: job cards, inspection check lists
- Professional discussions with assessor / customer
- Knowledge questions produced by the assessor
- Group work activity reports completed by learners
- Witness testimonies completed by customers

Please Note:
The assessor will need to ensure the evidence provided in the learner's portfolio for this unit meets all of the Assessment Criteria, the evidence must be cross referenced to the Assessment Criteria.

AC	Guidance	Examples of Evidence Generated
3.1	Learner makes a questionnaire to gauge interest in the service activity, includes: type of service required, price prepared to pay, day and time they would like the service, the type of service required.	• Completed questionnaires.
3.2	Learner develops the business solution in response to the questionnaire, service required, potential: volumes of potential customers, day and time to provide the service, income expected, costs per service incurred, profit from the activities. Learner develops the marketing materials and promotes the service activities to the potential audience. Materials include contact details of how to make an appointment.	• Learners analysis of results of the questionnaire • Leaflet the learner has produced
3.3	The learners plans highlight the services required, the number of customers requiring the service, associated costs and resources needed to plan for the demand	• Learner calculates the basic forecasted income, expenditure and profit; and the resources from the enquiries resulting from the marketing activity
3.4	The learner develops the agreed business service or product, liaises with the relevant assessor to discuss AC3.2, once the plans are agreed the learner confirms the resources required and contacts the customers to confirm the service or product required. Learner completes the service activity / provides the product. On completion of the activities, the learner analyses the results of the activity and produces a basic report.	• Copies of the workshop booking system. • Lists of products supplied • Pre and Post vehicle inspections. • Assessor observation report • Learner analysis of the tasks completed. • Witness testimony from the customer

UNIT REF: L1MV13	UNIT TITLE: HEALTH AND SAFETY IN AN ACCIDENT REPAIR ENVIRONMENT

Level: 1	GL: 11 Hours	TQT: 12 Hours
Overview: This unit will provide the learner with the knowledge of how to remain safe in an accident repair environment and precautions to take while repairing accident damaged vehicles.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to remain safe in an accident repair environment	1.1. Identify the PPE specific to the accident repair environment 1.2. State what health and safety information is available for the accident repair industry 1.3. Give examples of how to access health and safety information
2. Know how the health of individuals is monitored when working in an accident repair environment	2.1. Outline a method of monitoring the health of individuals, who are repairing accident damaged vehicles 2.2. Identify different types of health screening
3. Know the health and safety precautions, when carrying out accident repair processes	3.1. State the processes involved in repairing accident damaged vehicles 3.2. Identify the health and safety precautions to be taken when repairing accident damaged vehicles
4. Know how to remain up to date with accident repair health and safety legislation	4.1. State how to access accident repair health and safety legislation updates

Unit Content	Assessment Criteria
PPE for the workshop to include different types of: • overalls • boots • skin protection • eye protection • ear protection • respiratory protection and fit testing **Health and safety information** • safety data sheets • symbols • researched repair methods • online government information **Examples of how to access health and safety information** • online access through the manufacturers website • on the accident repair products • electronic and paper based information supplied by the manufacturer **Include safe working practices specific to this unit**	1.1, 1.2, 1.3
Monitoring the health of individuals to include: • regular health surveillance • types of health screening, for example, lung function and hearing assessments etc.	2.1, 2.2

The processes involved in repairing accident damaged vehicles will include: • vehicle damage assessment • pre-cleaning and valeting • removing and replacing mechanical, electrical and trim components / fastenings • using lubricants, vehicle fluids and coolants • body / panel repair and replacement • vehicle panel and paint preparation • colour matching and paint mixing • applying adhesives, sealers, foundation materials, topcoats, anti-corrosion materials, waxes and compounds • working on high voltage systems - electric and hybrid vehicles **Highlight the precautions to be taken for each of the above processes** **Additional precautions which will aid in reducing risks and promote safe working to include:** • participate in training and development • working within limitations • using researched repair methods	3.1, 3.2
Accessing accident repair health and safety legislation updates: • subscriptions to recognised health and safety websites • joining trade associations • subscribing to vehicle researched repair methods • liaising with product manufacturers and accessing their websites • attending industry conferences and working groups	4.1

UNIT REF: L1MV14	UNIT TITLE: TOOLS, EQUIPMENT AND MATERIALS FOR ACCIDENT REPAIR

Level: 1	GL: 19	TQT: 23 Hours
Overview: This unit will provide the learners with the knowledge and skills to select, check and use the appropriate tools, equipment and materials when repairing damaged vehicle bodies.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know a range of accident repair tools and equipment	1.1. Identify a range of accident repair tools and equipment
2. Know how to check tools and equipment prior to use	2.1. State how to access the manufacturers' information for the tools and equipment 2.2. Outline the type of checks which are carried on the tools and equipment prior to use
3. Know a range of accident repair materials / consumables	3.1. Identify a range of accident repair materials /consumables
4. Know how to use a range accident repair materials /consumable	4.1. Identify how to access information relating to accident repair materials 4.2. Outline how to use a range accident repair materials / consumables
5. Be able to select and check a range of accident repair tools and equipment	5.1. Demonstrate how to select and check a range of accident repair tools and equipment 5.2. Demonstrate how to use a range of accident repair tools and equipment
6. Be able to use a range of accident repair materials / consumables	6.1. Demonstrate the use of a range of accident repair materials/consumables

Evidence Requirements
Your assessor must observe you completing the following tasks on one occasion: (Note: the tasks can be referenced to other units within the qualification)
Carrying out checks and using **three** of the following tools:
• ball-peen hammer • sockets • ratchet • panel hammer • torque wrench • clamps / grips • masking dispenser • sanders • polisher • spray gun • pressure washer
Carrying out checks and using **two** of the following pieces of equipment:
• spray booth • infrared drying equipment • spray gun cleaner • air regulator / filter • lifting equipment • panel stands • battery pack or charger • MAG welding equipment • parts cleaner • axel stands • compressor • dust extraction units

Evidence Requirements Cont.
Using **two** of the following materials / consumables **(use of product data sheets must be observed where relevant)**
• panel / paint degreasing agents • lubricants • vehicle fluids and/or coolants • masking materials • body filler or stopper • weld through primers • seam sealers • paint foundation materials • paint topcoats • anti-corrosion materials • cleaning and valeting products

Unit Content	Assessment Criteria
Identify a range of accident repair tools and equipment to include: **Tools:** • ball-peen hammer • a range of appropriate hand tools (level 1) • sockets • dollies • panel hammers • torque wrench • clamps / grips • ratchet • masking dispenser • sanders • polisher • spray gun • pressure washer • panel gap gauges • cutters and grinders **Equipment:** • spray booth • infrared drying equipment • spray gun cleaner • air regulator / filter • lifting equipment • panel stands • battery pack or charger • MAG welding equipment • parts cleaner • axel stands • compressor • dust extraction units	1.1
State how to access the tools and equipment manufacturers' information to include: • online access • manuals • technical helplines • sales and service representatives **Outline the type of checks which are carried on tools and equipment prior to use to include:** • secure and on even ground • leaks • damage to pipes, cables or connections	2.1-2.2

• evidence of damage or abuse • the equipment is appropriate for the task • certification / 'tested' stickers are visible • filters are serviceable / clean • guards are in place • service records are up to date • stop / emergency cut off buttons or devices are working and within the operators reach • tools are lubricated where necessary	
Identify a range of accident repair materials /consumables to include: • panel / paint degreasing agents • lubricants • vehicle fluids and/or coolants • masking materials • body filler and/or stopper • weld through primers • seam sealers • paint foundation materials • paint topcoats • anti-corrosion materials • cleaning and valeting products	3.1
Identify how to access information relating to accident repair materials / consumables to include: • product manufacturers websites • manufacturers' representatives • manufacturers' online training videos • technical helplines • promotional brochures • product catalogues • trade shows • product demonstrations **Use product and safety data sheets to outline how to use a range of accident repair materials / consumables to include:** • the purpose and limitations of the materials / consumables • the safe use of the materials / consumables • how to prepare the materials / consumables • tools and techniques for successful use and application • the clean-up processes • drying processes • waste disposal procedures	4.1-4.2

UNIT REF: L1MV15	UNIT TITLE: HEALTH AND SAFETY PRACTICES IN A VALETING AND DETAILING ENVIRONMENT

Level: 1	GL: 13 Hours	TQT: 18 Hours
Overview: This unit further develops the learner's awareness of Health and Safety in the workplace by putting into practice the knowledge gained from unit L1MV01. Learners will further develop the knowledge in identifying hazards and risks, and be able to: demonstrate safe working practices using a variety of tools, equipment and consumable materials whilst carrying out vehicle valeting and detailing tasks.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know the hazards and risks associated with working in a valeting and detailing environment.	1.1 List the typical hazards and risks associated with: a. vehicle valeting and detailing b. using cleaning materials 1.2 Identify where to find the health and safety information relating to cleaning products 1.3 State good housekeeping routines associated with vehicle valeting and detailing tasks
2 Know how to work safely in the valeting and detailing environment	2.1 Identify the PPE and VPE used in the valeting and detailing environment 2.2 Identify the safe working practices to be used when carrying out valeting and detailing.
3 Be able to use appropriate health and safety practices	3.1 Use appropriate safe and healthy working practices when carrying out vehicle valeting and detailing. 3.2 Demonstrate good housekeeping practices when working in valeting and detailing environment
4 Be able to use appropriate equipment and consumable materials in line with health and safety guidelines	4.1 Use vehicle valeting equipment in line with health and safety practices and manufactures instructions 4.2 Use valeting and detailing materials following relevant health and safety guidelines and manufactures instructions
5 Be able to work safely when carrying out vehicle valeting and detailing tasks.	5.1 Use appropriate PPE and VPE when carrying out vehicle valeting and detailing tasks 5.2 Use appropriate and safe working practices when carrying out vehicle valeting and detailing tasks.

Evidence Requirements
You **must be observed by your assessor** completing **all** of the activities listed below on **at least one** occasion: (Note: evidence for this unit can be referenced to other appropriate units within the qualification)
Using safe and healthy working practices when carrying out vehicle valeting and detailing tasks.
Demonstrating good housekeeping practices when carrying out vehicle valeting and detailing tasks.
Using valeting tools and equipment in line with health and safety practices and manufactures instructions.
Using appropriate valeting materials following relevant health and safety guidelines and manufactures instructions.
Using appropriate PPE and VPE when carrying out vehicle valeting and detailing tasks.
Using appropriate and safe working practices when carrying out vehicle valeting and detailing tasks.

Unit Content	Assessment Criteria
Common hazards and risks associated with vehicle valeting and detailing tasks, include: • slip and trip hazards, hazardous substances, electric shock, poor ventilation, battery charging, falling objects, movement of heavy loads **Common hazards and risks associated with cleaners to include:** • flammable liquids, skin irritation, chemical burns, swallowing fluids, fluid in eyes, fire hazards **Know where to find Health and Safety information to include:** • on packaging of chemicals • manufactures websites • notices issued by local authority's • Health and Safety Executive Web site (HSE) • risk assessments **Good housekeeping practices to include:** • keeping work area clean of debris • floors cleaned • chemicals stored correctly • bins emptied • correct disposal of waste material • prompt disposal and storage of waste materials • prompt cleaning of spillages • regular cleaning of work area • storage of tools and equipment • correct storage of flammable liquids	1.1, 1.2, 1.3
PPE and VPE for the valeting and detailing environment include: • overalls • safety boots • skin protection • eye protection • ear protection • dust masks • steering wheel covers • floor mats • seat covers **Health and safety practices to include:** • use of PPE and VPE • location of fire extinguishers • following safety instructions • correct use of tools and equipment **Checking appropriate tools and equipment to include:** • electrical equipment – blown fuses, damaged cables • identifying unsafe hand tools - damaged hand tools • identifying unsafe equipment – broken / missing components	2.1, 2.2

UNIT REF: L1MV16	UNIT TITLE: TOOLS, EQUIPMENT AND CONSUMABLE MATERIALS USED FOR VALETING AND DETAILING

Level: 1	GL: 15 Hours	TQT: 21 Hours
Overview: This unit will provide learners with the knowledge and skills to be able to select, check and use tools and equipment used for valeting and detailing, the unit also covers the appropriate selection and use of consumable materials used valeting and detailing activities.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know a range of tools and equipment used in valeting and detailing	1.1 Identify a range of valeting and detailing tools and equipment 1.2 Outline how to check valeting and detailing tools and equipment prior to use 1.3 State how to use valeting and detailing tools and equipment correctly
2 Know a range of consumable materials used in valeting and detailing	2.1 Identify consumable materials used in valeting and detailing 2.2 Locate information relating consumable materials used in valeting and detailing 2.3 State how to use consumable materials used in valeting and detailing
3 Be able to select, check and use tools and equipment used in valeting and detailing	3.1 Demonstrate how to select and check valeting and detailing tools and equipment prior to use 3.2 Demonstrate how to use valeting and detailing tools and equipment safely
4 Be able to select and use consumable materials used in valeting and detailing	4.1 Select and use consumable materials to valet and detail vehicles

Evidence Requirements
You **must be observed by your assessor** completing **all** of the activities listed below on **at least one** occasion: (Note: the tasks can be referenced to other appropriate units within the qualification)
Selecting and checking valeting and detailing tools and equipment prior to use.
Using valeting and detailing tools and equipment safely.
Selecting and using consumable materials used in valeting and detailing.

Unit Content	Assessment Criteria
Tools and equipment for valeting and detailing include: • water hose (mains pressure) • cleaning brushes for paintwork • wheel brushes or scrubbers • sponges and buckets • chamois leather • polishing cloth • pressure washer • air lines and tools – blow guns • portable electric tools – vacuum cleaners, machine polishers, extension leads, component cleaner • select appropriate and necessary equipment for task • steps and ladders **Outline the type of checks which are carried on tools and equipment prior to use to include:** • secure and on even ground • leaks • damage to pipes, cables or connections • evidence of damage or abuse • the equipment is appropriate for the task • certification / 'tested' stickers are visible • guards are in place • service records are up to date • stop / emergency cut off buttons or devices are working and within the operators reach **Using tools and equipment to include:** • using manufacturer's instructions • safe working procedures • safe working limits • specialist training requirements • legal requirements • reporting of defects	1.1, 1.2, 1.3
Identify a range of consumable materials used in valeting and detailing to include: • shampoo • polish • tyre blackener • glass cleaner • tar remover • chrome cleaner • alloy wheel cleaner • upholstery cleaner • shampoo • glass cleaner • dashboard cleaner • carpet shampoo **Locating information relating to consumable materials used in valeting and detailing include:** • product manufacturers websites • manufacturers' representatives • manufacturers' online training videos • technical helplines • promotional brochures • product catalogues • trade shows • product demonstrations **Using consumable materials used in valeting and detailing to include:** • access and use of product safety information • the purpose and limitations of the materials and consumables • how to prepare the materials and consumables • the safe use of the materials and consumables • tools and techniques for safe use • the clean-up processes • waste disposal procedures	2.1, 2.2, 2.3

UNIT REF: L1MV21	UNIT TITLE: AIR AND LIQUID COOLING SYSTEM COMPONENTS AND OPERATION

Level: 1	GL: 15 Hours	TQT: 20 Hours
Overview: This unit introduces learners to the principles of engine liquid cooling and air-cooling components and operation. It covers identifying the main components used in liquid cooling and air- cooling systems and the purpose and function of these components. The learner also has to carry out practical activities of removing and refitting liquid cooling system components and testing it for leaks.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know about engine liquid cooling and air-cooled systems	1.1 Identify the main components used in engine liquid cooling systems 1.2 State the purpose of the main components used in engine liquid cooling systems
2 Know how engine cooling systems operate	2.1 State the operating principles of engine liquid cooling systems
3 Be able to carry out routine maintenance on engine liquid cooling systems	3.1 Work safely on cooling systems 3.2 Select and use the correct technical data, tools and equipment for routine maintenance of liquid cooling systems 3.3 Demonstrating the correct procedures when removing and refitting a radiator and thermostat and refilling the cooling system 3.4 Demonstrating the correct procedures for tensioning the coolant drive belts 3.5 Demonstrating the correct procedures for pressure testing the cooling system and checking for leaks
4 Know about environmental considerations when disposing of waste materials	4.1 Identify appropriate ways to dispose of waste products in accordance with environmental guidance
5 Be able to clean the work area and leave in a safe condition	5.1 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:**
Removing and refitting a radiator, thermostat and refilling the cooling system
Using the correct procedures for tensioning the coolant drive belts
Using the correct procedures for pressure testing the cooling system and checking for leaks

Unit Content	Assessment Criteria
The main components in engine liquid cooling systems to include: • coolant – water and antifreeze mixture • radiator and radiator cap • thermostat • expansion tank • pipes and hoses • gaskets and sealing rings • water pump and drive belt • cooling fan – mechanical and electric • vehicle heater **Purpose and function of main liquid cooling system components to include:** • coolant • radiator and radiator cap • thermostat • expansion tank • pipes and hoses • gaskets and sealing rings • water pump and drive belt • cooling fan – mechanical and electric • vehicle heater	1.1, 1.2
The operating principle of engine liquid and air cooling systems and components to include: • conduction, convection and radiation principles • thermo-siphon principle • pressurised systems • radiator • radiator pressure cap • expansion tank • thermostat • mechanical and electric fans • fan • heat exchangers • air flow ducting • cooling fins	2.1
Disposal of waste products in accordance with environmental guidance include: • safe collection and storage of used components and liquids • legal and local disposal methods	4.1

UNIT REF: L1MV27	UNIT TITLE: VEHICLE STEERING AND SUSPENSION SYSTEM COMPONENTS AND MAINTENANCE (4 WHEELS OR MORE)

Level: 1	GL: 22 Hours	TQT: 30 Hours
Overview: This unit introduces learners to the principles of vehicle steering and suspension system components and operation. It covers identifying the main components used in steering and suspension systems and the purpose and function of these components. It also requires the learner to remove and replace steering and suspension components.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know about non-assisted and assisted steering and suspension components	1.1 Identify the main components used in non-assisted and assisted steering systems 1.2 State the purpose of the main components used in non-assisted and assisted steering systems 1.3 Identify the main components used in common suspension systems 1.4 State the purpose of the main components used in common suspension systems
2 Know how non-assisted and assisted steering and suspension systems operate	2.1 State the operating principles of non-assisted and assisted steering systems and components 2.2 State the operating principles of suspension systems and components
3 Be able to carry out routine maintenance on steering systems	3.1 Work safely on steering systems 3.2 Select and use the correct technical data, tools and equipment for routine maintenance of steering systems 3.3 Demonstrate the correct procedure when removing and refitting a steering component 3.4 Demonstrate the correct procedures for adjusting front wheel alignment (toe) to within manufacturer's tolerance 3.5 Demonstrate the correct procedures for checking and topping up power steering fluid levels
4 Be able to carry out routine maintenance on suspension systems	4.1 Work safely on suspension systems 4.2 Select and use the correct technical data, tools and equipment for routine maintenance of suspension systems 4.3 Demonstrate the correct procedures when checking suspension systems for leaks and visually obvious defects 4.4 Demonstrate the correct procedures when removing and refitting a complete suspension unit
5 Be able to clean the work area and leave in a safe condition.	5.1 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:
Removing and replacing a steering component
Correctly adjusting front wheel alignment within manufacturer's specification
Checking and topping up power steering fluid levels
Visually inspecting a suspension system
Removing and refitting a suspension unit

Unit Content	Assessment Criteria
The main components in steering systems to include: • steering wheel • steering column • steering joints and couplings • steering gearbox – rack and pinion system and conventional steering box types • manual and power steering • drag link • track rods • steering arms • track control arm • track rod ends • rubber gaitors • swivel pin and front hub assembly **Purpose of steering system components to include:** • steering column – including impact absorbing and telescopic aspects • steering joints and couplings • steering gearbox – rack and pinion system and conventional steering box type • function of drag link, track rods, steering arms, track control arm, track rod ends, rubber gaiters • ball joints and front hub assembly • manual and power steering (Pump, Fluid lines, Drive belts) **The main components in suspension systems to include:** • springing methods – metal, rubber, fluid, air • spring types – leaf, coil, torsion bar, rubber, fluid, air • suspension damper • beam axle arrangement • independent suspension • Independent Suspension types – Macpherson strut, wishbone, trailing arm • anti-roll bars **Purpose of suspension components to include:** • action of springs – leaf, coil, torsion bar • function of suspension damper	1.1, 1.2, 1.3, 1.4
The operating principles of steering system to include: • Ackermann layout • Camber • Castor • Swivel Axis Inclination (formerly KPI) • front wheel alignment (toe) • steering gearbox – rack and pinion system and conventional steering box types • front hubs **The operating principle of suspension systems to include:** • IFS • IRS • beam axle arrangement – layout, disadvantages • independent suspension – layouts, advantages • action of suspension – Macpherson strut, wishbone, trailing arm, anti-roll bar • bump and rebound (including methods of damping)	2.1, 2.2

UNIT REF: L1MV28	UNIT TITLE: LIGHT VEHICLE BRAKING SYSTEM COMPONENTS AND MAINTENANCE

Level: 1	GL: 21 Hours	TQT: 30 Hours
Overview: This unit introduces learners to the principles of vehicle braking system components and operation. It covers identifying the main components used in the mechanical and hydraulic braking systems and the purpose and function of these components. The learner also has to carryout practical routine maintenance on light vehicle braking systems.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know non-ABS vehicle braking system components	1.1 Identify the main mechanical components used in vehicle braking systems 1.2 Identify the main hydraulic components in non-ABS vehicle braking systems
2 Know how basic vehicle braking systems operate	2.1 State the operating principles of mechanical vehicle braking systems and components 2.2 State the operating principles of non-ABS hydraulic braking systems and components
3 Be able to carry out routine maintenance on vehicle braking systems	3.1 Work safely on vehicle braking systems 3.2 Select and use the correct technical data, tools and equipment for routine maintenance of vehicle braking systems 3.3 Demonstrate the correct procedures when removing and replacing brake pads and brake shoes 3.4 Demonstrate the correct procedures when adjusting handbrake mechanisms 3.5 Demonstrate the correct procedures for bleeding brakes during routine maintenance on vehicle braking systems
4 Know about environmental considerations when disposing of waste materials	4.1 Identify appropriate ways to dispose of waste products in accordance with environmental guidance
5 Be able to clean the work area and leave in a safe condition.	5.1 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:
Removing and replacing brake pads and brake shoes
Using the correct procedure to adjust a handbrake mechanism
Bleeding a braking system using the correct procedures

Unit Content	Assessment Criteria
The mechanical components in vehicle braking systems to include: • drum brakes – brake pedal, brake shoes, leading shoe, trailing shoe, adjusters, return springs, backing plate, parking brake mechanism • disc brakes – front disc brake system, disc pads, brake calliper, brake disc, parking brake system **The hydraulic components in vehicle braking systems to include:** • single and dual line layout • master cylinders • wheel cylinders • disc brake caliper & pistons • brake lines and flexible pipes • brake servo • requirements and hazards of brake fluid – boiling point, hygroscopic action, potential to damage paint surfaces • manufacturer's change periods for brake fluid	1.1, 1.2
The operating principles of mechanical braking systems to include: • fundamental braking principles – converting kinetic energy to heat energy • coefficient of friction – between tyres and road, between brake shoes and brake drum, brake pad and brake disc • advantages / disadvantages of drum brakes and disc brakes • action of drum brakes, leading and trailing brake shoes, self-servo action • action of disc brakes, brake calliper, pad retraction • terms associated with braking systems, braking efficiency, brake fade, brake balance, ABS **The operating principle of hydraulic braking systems to include:** • action of brake fluid – incompressible, equalising force, absorption of moisture, effect of air in system, requirement to change fluid, need to bleed system • action of master cylinders and wheel cylinders, brake calliper's, brake pad retraction, equalising valves • action of brake servo • split braking systems	2.1, 2.2

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 straightforward electrical connections) • rear seat • glovebox • luggage area 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 cover • door moulding • exterior wheel arch cover • badge/emblem

Unit Content	Assessment Criteria
Interior trims to include: • interior door card • seats • glovebox • luggage area trims • consoles • sun visor • headlining • carpets / upholstery • parcel shelf • luggage compartment cover **Exterior vehicle trims to include:** • scuttle panel trim • door mirror cover • 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 • 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: 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: L1MV48	UNIT TITLE: LIGHTING SYSTEM MAINTENANCE

Level: 1	GL: 20 Hours	TQT: 30 Hours
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. Learners also have to complete. Learners are also to complete practical activities by replacing a range of vehicle lighting circuit components and aligning a vehicle headlamp.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know vehicle lighting systems components	1.1 Identify the main types of bulbs used on modern vehicles 1.2 Identify examples of the types of headlamp units available 1.3 State the colour of lamps that are legally required on a 4 wheeled vehicle
2 Know how vehicle lighting systems operate	2.1 Interpret a simple lighting circuit wiring diagram 2.2 State how light is emitted from a conventional bulb 2.3 State how a brake light circuit operates
3 Be able to replace lighting system components	3.1 Work safely on vehicle lighting systems 3.2 Demonstrate the correct method to replace a halogen headlamp bulb 3.3 Demonstrate the correct method to replace a headlamp unit 3.4 Demonstrate the correct method to align a headlamp to within legal requirements 3.5 Use a wiring diagram to locate the main beam light circuit relay and check its operation
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 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:
Removing and replacing a halogen headlamp bulb
Removing and replacing a head lamp unit including realignment to legal requirements
Checking the operation of the main beam light circuit relay

Unit Content	Assessment Criteria
The main types of bulbs used on modern vehicles include: • conventional- vacuum, inert • Halogen • HID - Xenon • LED **Examples of the types of headlamp units available include:** • low beam units • high beam units • combined units • European lens • American lens • projector type • HID-xenon • LED unit **The colour of lamps that are legally required on a 4 wheeled vehicle include:** • headlamp • sidelamp • indicators • brakelights • rear lamps • reverse lamps • fog lamps • white • amber • red • yellow	1.1, 1.2, 1.3
The ability to accurately read and interpret a simple lighting circuit wiring diagram to include: • battery symbols • switch symbols • wire colours • fuse symbols • lamp symbols • earth symbols • relay symbols **How light is emitted from a conventional bulb to include:** • conversion of electrical energy to heat energy • filament temperature **How a main beam light circuit operates to include** • power and earth connections • switch • fuse • lamp units	2.1, 2.2, 2.3

UNIT REF: ET136	UNIT TITLE: ELECTRIC VEHICLE AWARENESS

Level: 1	GL: 4	TQT: 8
Mapping: Based on IMI SSC Electric Vehicle NOS 2011		
Rationale: This unit is designed for those people who may encounter electric/hybrid vehicles and require safety awareness. It is suitable for non-technical people such as managers, valeters, parts, sales staff; and electric vehicle drivers. It contains the ***knowledge*** of the dangers surrounding electric/hybrid vehicles and the precautions to avoid potential injury. **Note:** *This is a knowledge unit only and does not deem someone competent to work on the high energy electrical system.*		

LEARNING OUTCOMES The Learner will:	CONTENT: The Learner should be taught:
1. Know about the types of electric vehicles available	1.1 How to identify electric vehicles to include: a. construction b. badging 1.2 Examples of the electrically propelled vehicles that are currently available to include: a. hybrid incl. plug in b. electric c. two wheel moped/scooters d. commercial vehicles e. passenger transport f. car 1.3 The main differences between hybrid and electric vehicles to include: a. layouts b. components c. batteries d. motors 1.4 Examples of the typical voltages used for a range of electrical vehicles to include: a. 100-650V
2. Understand the hazards around high energy electrical systems	2.1 The basic hazards associated with high energy electricity to include: a. electric shock b. burns c. arc flash d. arc blast e. fire f. explosion g. chemicals h. gases/fumes

	2.1 The hazards that may be present in the event of an accident or suspected overcharging to include: a. electric shock b. burns c. arc flash d. arc blast e. fire f. explosion g. chemicals h. gases/fumes 2.4 Potential hazards when making connections for charging electric vehicles
3. Know how to work safely around electric vehicles	3.1 Safety precautions to be taken before approaching and working on or around electric vehicles to include: a. risk assessment b. awareness of damaged components c. dealing with leakage d. isolation of high energy electrical system e. safe connection when charging 3.2 How to identify high energy cabling and associated components to include: a. colouring b. warning symbols 3.3 How the vehicle may be safely charged using an external source.

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: L1MV52	UNIT TITLE: APPLICATION OF A TOPCOAT AND MINOR DEFECT RECTIFICATION

Level: 1	GL: 19 Hours	TQT: 26 Hours
Overview: The unit will provide the learner with the knowledge and skills to apply a two-pack direct gloss topcoat. The paint will be applied to a small vehicle panel in a vertical position and in addition to this; the learner will rectify any minor defects which are present in the final finish.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to set up spraying equipment	1.1. Identify information which will aid the setting up of spraying equipment 1.2. State the checks which are required when setting up spraying equipment 1.3. Outline how to make adjustments to spraying equipment
2. Know how to apply a direct gloss topcoat	2.1. Identify information which will support the application of a direct gloss topcoat 2.2. State how to mix a direct gloss topcoat 2.3. Outline how to apply a direct gloss topcoat
3. Know how to rectify minor paint defects	3.1. Identify a range of paint defects 3.2. State how to rectify minor paint defects
4. Be able to set up spraying equipment	4.1. Use information which will aid the setting up of spraying equipment 4.2. Carry out checks to spraying equipment prior to use 4.3. Adjust the spraying equipment to achieve an acceptable finish
5. Be able to apply a direct gloss topcoat	5.1. Use information to support the application of a direct gloss topcoat 5.2. Mix the topcoat in accordance with the manufacturers recommendations 5.3. Apply a direct gloss topcoat to a small vehicle panel
6. Be able to rectify minor paint defects	6.1. Rectify minor paint defects without causing permanent damage to the final finish

Evidence Requirements
You **must be observed by your assessor** completing all of the following tasks on **at least one** occasion.
Use manufacturers information to aid the application of the topcoat
Applying a direct gloss topcoat to a small vehicle panel in a vertical position
Rectifying **at least two** of the listed paint defects:
• Minor craters / fish eyes • Run / sag • Dirt inclusions • Dry spray • Orange peel

Unit Content	Assessment Criteria
The information which will aid the setting up of spraying equipment: • the equipment manufacturers instructions for spray guns, compressors, air filtration systems and spray booths • paint data sheets **The checks which are required when setting up spraying equipment will include:** • examination and identification of air hose sizes and their connection type • examination of the equipment for faults and defects • locating and rectifying any leakages • compressed air / supply pressures • ensuring the equipment is suitable for the application process • identifying the spray equipment set up **The adjustments to spraying equipment will include:** • pressure • spray pattern • changing the set up • fluid control • fan - vertical or horizontal	1.1, 1.2, 1.3
The information which will support the application of a direct gloss topcoat will include: • technical data sheets • the paint manufacturers online information **Mixing a direct gloss topcoat will include:** • protecting the work area • paint manufacturers online information • technical data sheets • estimating the amounts of mixed paint • paint preparation - stirring • viscosity measurements • mixing by weight and volume • mixing cups, containers, mixing sticks, mixing 'stirrers' • hardeners / activators and thinners and their relationship between temperature and the size of the repair • filtering the paint **The application of a direct gloss topcoat will include:** • connecting the air hoses • testing and adjusting the spray pattern at a measured distance • spraying technique and distance • methods of applying the first coat • methods of applying the final coat • coverage of the panel edges • paint thickness and the consequences of the extremes (too much or not enough build) • checking the quality of the finish • how to avoiding defects	2.1, 2.2, 2.3
A range of paint defects will include: • minor craters / fish eyes • run / sag • dirt inclusions • dry spray • orange peel **The rectification of minor paint defects will include:** • protecting areas of the panel and vehicle during the rectification process, such as unaffected areas, edges and swages • using suitable abrasive papers • applying rubbing compounds and polishes by machine and by hand	3.1, 3.2, 3.3

UNIT REF: L1MV53	UNIT TITLE: SPRAY GUNS AND THEIR COMPONENTS

Level: 1	GL: 18 Hours	TQT: 22 Hours
Overview: This unit will enable the learners to identify different types of spray guns, their components and how a spray gun works. The learners will dismantle spray guns and locate minor faults.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know different types of spray guns	1.1. Identify the different types of spray guns 1.2. State a variety of applications for different spray guns
2. Know how a spray gun works	2.1. Identify the main components of a spray gun 2.2. Outline the function of spray gun components 2.3. Identify spray gun component faults 2.4. State how the operation of spray guns differs between types 2.5. State how spray gun component faults affect the performance of a spray gun
3. Be able to remove and refit spray gun components	3.1. Demonstrate the removal of spray gun components 3.2. Identify faulty or damaged spray gun components 3.3. Locate components within the spray gun manufacturers information 3.4. Refit spray gun components without causing damage

Evidence Requirements
You **must be observed by your assessor** completing all of the following tasks on **at least one** occasion.
Removing and refitting spray gun components
Identifying faulty or damaged spray gun components
Locating components within the spray gun manufacturers information

Unit Content	Assessment Criteria
Different types of spray guns to include: • spot repair • pressure feed • gravity feed • suction feed **Applications for different types of spray guns to include:** • minor / small repairs • intricate trims • areas of restricted access • commercial vehicle cabs and chassis • large areas • light vehicles • motorcycles • vehicle body apertures	1.1-1.2
The main components of a spray gun to include: • air cap • needle and spring • cups including disposable liner types • fluid control valve • fan control • trigger • fluid nozzle / tip • air valve • fluid packing nut • the gun body, varying designs and the materials used in its construction **Spray gun components to include:** • the relationship between spray gun components • how to identify and reference component sizes and markings **The function of spray gun components to include** • atomising • metering and regulating material flow • regulating and controlling air flow • spray pattern • flow rate depending on the material viscosity • turning the air cap to alter the fan orientation / direction **Spray gun component faults to include:** • needle wear, tip damage and bending • damaged to the air cap horns and blockages • different types of fluid tip damaged • cracked and damaged fluid cups • blocked vents • damaged and leaking seals • damage to the gun body • sticking and seized controls **State how the operation of spray guns differs between types to include:** • the basic principles of atomisation • how the paint is fed (compare pressure feed, gravity feed and suction feed **How component faults may affect the performance of a spray gun to include:** • leakage - both compressed air and paint • drips • fluttering spray • spray pattern • starved paint flow • paint finish defects • the gun will not spray • bubbles / blow-back into the cup or pot liner	2.1-2.5

UNIT REF: L1MV54	UNIT TITLE: SPRAYING TECHNIQUES

Level: 1	GL: 19 Hours	TQT: 24 Hours
Overview: This unit will provide the learners with the knowledge and skills in using a range of spraying techniques for different applications.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know a range of spraying techniques	1.1. State how spraying distance, speed, and gun angle can affect the application of painting materials 1.2. Outline the importance of accurately controlling the spray gun trigger 1.3. State how to adjust the spray gun to suit different applications 1.4. Outline spraying techniques which may be used in a variety of situations 1.5. Identify paint defects which are associated with incorrect spraying techniques
2. Be able to use different spraying techniques	2.1. Demonstrate how to adjust a spray gun to suit the task 2.2. Demonstrate different spraying techniques

Evidence Requirements
You **must be observed by your assessor** completing all of the following tasks.
Adjusting the spray gun pattern
Using the spray gun to apply paint materials to at **least 3** of the following panels.
• vertical panels
• horizontal panels
• curved or cylindrical panels
• internal and external corners of a panel
• intricate and restricted areas of a panel
• joining adjacent panels

Unit Content	Assessment Criteria
Recommendations for spraying distance, speed and gun angle to include: • consistent distance and speed • how spraying distance determined by the spray gun manufacturer • distance guides and aids • the relationship between speed, the spray gun set up and spraying distance • holding the gun 90° to the panel surface **The importance of accurately controlling the spray gun trigger to include:** • the technicians ability and accuracy to control the flow of the refinishing material • reducing material build up • reducing overspray • controlling the size of the repair • joining with other adjacent panels • overlapping on large panels **Adjusting the spray gun to suit different applications to include:** • fan shape • spraying pressure • pot angle • fan direction **Spraying techniques which may be used in a variety of situations to include:** • tilting the spray gun on its side when spraying panel edges (caution with gravity feed spray guns) • arching when blending (brief overview) • the technicians body movement and stance • planning the task, so a wet edge and access is maintained for each coat • internal corners and external corners - how to get even coverage • panel flanges and edges - when and how to apply paint materials **Identify paint defects which are associated with incorrect spraying techniques** • striping / poor opacity • orange peel • uneven finish • runs /sags • dry spray • dull finish • varying paint thickness	1.1-1.5

UNIT REF: L1MV55	UNIT TITLE: PRIMERS AND SEALERS

Level: 1	GL: 19 Hours	TQT: 24 Hours
Overview: This unit will provide the learner with the knowledge of a range of primers and sealers. In addition to this, the learner will gain the skills to mix the products for spray application.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know different types of primers	1.1. Identify different types of primers and sealers 1.2. State the properties of a range of primers and sealers
2. Know how to mix primers and sealers	2.1. Identify the manufacturers technical data which is relevant primers and sealers 2.2. Identify tools and equipment which are used when mixing primers and sealers 2.3. State how to prepare mixing tools and equipment 2.4. Outline how to prepare primers and sealers prior to mixing them with hardeners and thinners 2.5. Outline the mixing process of primers and sealers
3. Be able to mix primers and sealers	3.1. Prepare the work area prior to mixing primers and sealers 3.2. Prepare mixing equipment 3.3. Interpret manufacturers technical data sheets 3.4. Mix primers and sealers in accordance with the manufacturers recommendations 3.5. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** mixing two-pack primers and sealers **on one occasion. You are required to mix at least 3** of the products from the list.
• etch
• plastic adhesion primers
• direct to metal primers
• primer filler
• epoxy primers
• wet on wet
• isolator / sealer

Unit Content	Assessment Criteria
Identify different types of primers and sealers to include: • the definition of 1K and 2K • 1K and 2K types of primers and sealers • etch • plastic adhesion primers • direct to metal primers • primer filler • epoxy primers • wet on wet • sealers **The properties of a range of primers and sealers to include:** • build qualities • adhesion qualities • non-sanding qualities • ease of sanding • drying times and drying methods • number of coats and the product recommended thickness measurements • corrosion resistance qualities • the ability to be applied over old or sensitive coatings / isolating qualities • product appearance - coloured or colourless • covering power • tintable products • colour ranges of primers and sealers • reasons for using coloured primers and sealers	1.1, 1.2
The manufacturers technical data which is relevant to the primers and sealers to include: • online information • technical data sheets • mixing ratios by volume and weight • hardener, thinner and additive selections • viscosity • the relationship between viscosity and temperature • special advice, notes or remarks contained on technical data sheets **Tools and equipment which are used when mixing primers and sealers to include:** • computer • mixing scheme • scales • stirrers / mixing sticks • mixing cups and pot liners • cup filters • paper filters • viscosity cups • thermometer **How to prepare mixing tools and equipment to include:** • accessing computer based mixing information • passwords to gain access to manufacturers information • the process and times recommended for stirring the tinters • mixing scheme checks, operation and stirring timescales • the importance of removing dust or dried paint from the tinter pourers • the calibration and levelling of the mixing scales • how to ensure drafts will not affect the accuracy of the mixing scales • the importance of cleaning tools and equipment prior to use • how the shape of the mixing cup affects the accuracy of the mix when using volume as a measurement • selecting the correct size mixing cup for the task and amount of material • checking that the pots and cup liners are sealed and secure before spraying • the cleanliness and suitability of the viscosity cups	2.1, 2.2, 2.3, 2.4, 2.5

How to prepare primers and sealers prior to mixing them to include: • checking shelf life and dates • ensuring the technical data sheet matches the selected product • stirring / shaking of the products • checking the room temperature • the importance of following the manufacturers technical data sheets **The mixing process of primers and sealers to include:** • the difference between mixing by volume and weight • inputting information into the paint manufactures mixing software • how to locate the primer colour, shade and formulation • techniques to estimate the amount of material required • adding the correct amount of primers, tinters and binders / ingredients • dealing with over pours and how to recalculate formulations • adding hardeners, thinners and additives to the correct ratios • mixing and stirring • checking the shade and colour • how to check the viscosity of primers and sealers • the importance of checking the viscosity of refinishing products	

UNIT REF: L1MV56	UNIT TITLE: APPLYING PRIMERS AND SEALERS

Level: 1	GL: 13 Hours	TQT: 21 Hours
Overview: This unit will provide the learners with the knowledge and skills to apply primers and sealers to a small vehicle panel in a vertical position.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to apply primers and sealers	1.1. Identify sources of technical information which will support the application process 1.2. State how to set up spraying equipment for a range of primers and sealers 1.3. Outline the processes for applying primers and sealers
2. Be able to apply primers and sealers	2.1. Use technical information to support the application of primers and sealers 2.2. Set up spraying equipment 2.3. Apply primers and sealers to vehicle panels

Evidence Requirements
You **must be observed by your assessor** completing the following tasks on **at least one** occasion.
Setting up spraying equipment as stated in the paint manufactures data
Applying at least **3** of the following products to a vehicle panel in a vertical position.
• etch
• plastic adhesion primers
• direct to metal primers
• primer filler
• epoxy primers
• wet on wet
• isolator / sealer

Unit Content	Assessment Criteria
Sources of technical information which will support the application process to include: • paint manufacturers online information • technical data sheets • spray gun manufacturers information and settings **How to set up spraying equipment to include:** • draining inline filters • following the spray gun manufacturers recommendations • selecting the correct air cap, fluid tip and needle (set up) • filling the spray gun cup to the correct level • connecting the air supply • spraying pressure adjustments • fan pattern adjustment • fluid adjustments • how to test the spray pattern • final adjustments after testing **The processes for applying primers and sealers to include:** • the importance of the correct spraying temperature • checking the spraying temperature • assessing the spraying environment - suitability, spray booth pressures, filters and extraction • how to apply the first coat • the definition of 'flash off' • the importance of flash off periods • flash off temperature • how to apply additional coats • visual assessments of the primer and sealer after its application • pot life of primers and sealers • curing methods and timings	1.1, 1.2, 1.3

UNIT REF: L1MV57	UNIT TITLE: SURFACE PREPARATION

Level: 1	GL: 21 Hours	TQT: 26 Hours
Overview: This unit will provide the learners with the knowledge and skills to prepare unpainted and previously painted steel panels. The learners will carry out the preparation process using hand and machine methods.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the reasons for preparing vehicle panels	1.1. Identify the reasons for preparing vehicle panels 1.2. State the consequences of poor preparation 1.3. Outline why vehicle panels require a range of preparation methods and techniques
2. Know how to prepare unpainted and previously painted steel panels	2.1. Identify different sources of information which supports the preparation process 2.2. Outline how to identify the panel material 2.3. Identify different types of automotive coatings 2.4. Identify cleaning agents which are used to remove surface contaminants 2.5. State how to set up sanding equipment 2.6. Identify different types and grades of abrasives 2.7. State the methods which are used to protect areas adjacent to the preparation process 2.8. Outline the processes which are used to prepare unpainted and previously painted steel panels
3. Be able to prepare unpainted and previously painted steel panels	3.1. Use technical information to support the preparation process 3.2. Demonstrate how to prepare unpainted and previously painted steel panels 3.3. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing all of the following tasks on **at least one** occasion.
Preparing a previously painted panel by hand and machine methods
Preparing unpainted areas of a steel panel by hand and machine methods

Unit Content	Assessment Criteria
The reasons for preparing vehicle panels to include: • providing sufficient adhesion for undercoats and topcoats • repairing defects and damage • changing the colour **State the consequences of poor preparation to include:** • loss of adhesion • poor gloss levels • sanding scratches • fish eyes / craters **Outline why vehicle panels require a range of preparation methods and techniques to include:** • the shape of the panel • the panel material • the type coating / finish • the extent of the damage or defects	1.1-1.3
The sources of information which supports the preparation process to include: • researched repair methods • paint manufacturers data • paint manufacturers process charts **How to identify the panel material to include:** • performing simple tests to check if the panel is magnetic • use of a digital paint thickness gauge with ferrous and non-ferrous function / display • consulting the vehicle manufacturers information and repair methods • consulting researched repair methods • visual assessment **Different types of automotive coatings to include:** • the panel manufacturers original protection / 'E coat' • stone chip resistant coatings • primers • direct gloss • clear over base • 1K and 2K products • precautions with solvent sensitive coatings **Cleaning agents which are used to remove surface contaminants to include:** • Pre cleaning chemicals which may be used with a pressure washer • impregnated wipes • water based • solvent based **How to set up sanding equipment to include:** • tool lubrication where applicable • connecting power supplies - air, electric or battery • potable and fixed extraction units • identifying the orbit size • connecting extraction hoses and extraction bags • connecting appropriate sanders and blocks • fitting backing and interface pads • fitting abrasives • making adjustments to the rate of extraction and the sander speed **The types and grades of abrasives** • types – roll, sheeting, disc, foam-backed, fibre scuff pads ('scotchbrite' style) • dry use only abrasives • wet and dry use abrasives • liquid and abrasive pastes • P80 – P500 grit abrasives • P800 - P1000 grit abrasives	2.1-2.8

The methods which are used to protect areas adjacent to the preparation process to include: • covering surrounding areas with masking tapes, trim tapes, lining tapes, masking papers and plastic sheeting • removing adjacent mechanical, electrical and trim components from the vehicle **The processes which are used to prepare unpainted and previously painted steel panels to include:** • pre cleaning • cleaning / degreasing • protecting surrounding areas • sanding • featheredging • assessment of the sanding process • checking areas visually and by touch • final cleaning and dust removal • disposing of waste materials safely and legally	

UNIT REF: L1MV58	UNIT TITLE: VEHICLE MASKING

Level: 1	GL: 23 Hours	TQT: 31 Hours
Overview: This unit will provide the learners with the knowledge and skills to carry out vehicle masking tasks.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know tools and equipment used for vehicle masking	1.1. State reasons for masking vehicle interiors and exteriors 1.2. Identify tools and equipment which is used when masking vehicles 1.3. Outline how to set up equipment which aids the masking process
2. Know a range of masking materials	2.1. Identify a range of vehicle masking materials 2.2. State the uses for a range of masking materials
3. Know how to mask vehicles	3.1. State how to prepare surfaces prior to using masking materials 3.2. Outline different techniques which are used during vehicle masking tasks 3.3. Identify a range of masking faults 3.4. State the causes of masking faults
4. Be able to mask vehicles	4.1. Demonstrate how to mask vehicles 4.2. Demonstrate economical use of masking materials 4.3. Demonstrate how to remove masking materials 4.4. Remove any masking residue without damaging the surface 4.5. Rectify any masking faults 4.6. Demonstrate how to store masking materials 4.7. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing all following tasks on **at least one** occasion.
Masking a full vehicle and cut out the areas which require primer or topcoats
Mask **at least two** of the items from the list:
• A vehicle front or rear windscreen **(not accepted as part of a 'sheeted' vehicle)**
• A vehicle door aperture
• A localised area to accept primer

Unit Content	Assessment Criteria
The reasons for masking vehicle interiors and exteriors to include: • protecting surfaces from damage during preparation • protecting areas from overspray • masking out custom designs and shapes • marking out for transfers / decals **Tools and equipment which is used when masking vehicles to include:** • masking material dispensers • safety cutters **How to set up equipment which aids the masking process to include:** • fixed and portable masking material dispensers • fitting masking materials to the dispenser • setting up the dispenser to automatically apply tapes to the edge of masking papers • Feeding the paper under the serrated edge • positioning the portable dispensers near to the vehicle • testing the equipment	1.1- 1.3
A range of vehicle masking materials to include: • 'no edge' blending tapes • low tack tapes • trim masking tapes • masking cords (for lifting rubbers and trim) • foam tapes • lining tapes • masking paper • masking sheeting • pre-taped paper and sheeting • masking tapes **Uses for a range of masking materials to include:** • **'no edge' blending tapes** - to prevent a paint build up when blending topcoats and applying primers. • **low tack tapes** - when working on custom designs, uncured paints or coatings which may be suspected to have poor adhesion. • **trim masking tapes** - to lift trim and rubbers to make them more accessible to mask. • **foam tapes** - ideal for masking vehicle apertures and preventing 'build-up' on body lines and swages. • **lining tapes** - used for outlining tightly fitted and curved trims / components. In addition to this, it is used to mark out custom paint designs and stripes. • **masking paper -** suitable for covering vehicle panels, glass and trim • **masking sheeting -** suitable for covering vehicle panels, glass, trim and interiors. • **pre-taped paper and sheeting -** as above, however the tape is previously applied for efficiency and speed when masking small areas**.** • **masking tapes** - to secure masking paper and sheeting. In addition to this, masking tape may be used to protect surrounding areas during preparation and it can be manipulated to produce 'soft edges', therefore preventing 'build-up'.	2.1, 2.2
How to prepare surfaces prior to using masking materials to include: • drying and removing any moisture • cleaning and degreasing • checking the temperature of the working environment - this may affect the performance of the masking materials **Outline different techniques used during vehicle masking tasks to include:** • folding and rolling masking tapes to create a soft edge • back masking • outline masking panels and components prior to fully covering • pulling tape from the roll and lining up edges • keeping the tape taut • smoothing out creases • applying pressure and sticking • folding, shaping and cutting masking materials • taking care with uncured surfaces	3.1-3.4

• methods of removing masking tape and checking the surface during the process • spot repair masking • methods used during the blending of topcoats • methods which promote economical use of materials and avoid waste **Masking faults to include:** • masking tape adhesion problems • paint and primer creep / underspray • overspray • 'ghosting' left by plastic sheeting • impression marks • deforming and melting **The causes of masking faults to include:** • **masking tape adhesion problems** are caused by a dirty or wet surface or in correct storage of the materials. • **paint and primer creep** can be caused by the edges of the tape not being pressed to the surface, contaminated tape, contaminated panels, lifting on tight turns and overheating of the tape. • **overspray** may be caused by gaps being left in the masking, the tapes not pressed down, paint and primers entering from under the plastic sheeting and tapes lifting during spraying. • **'ghosting' left by plastic sheeting** may be caused by moisture under plastic sheeting which leaves marks in the surface after baking. • **impression marks** are caused by applying masking materials to surfaces which are not fully cured. • **deforming and melting** occurs when intense heat is applied to the masking material which is greater than the product manufacturers' recommendations. • **paint flaking** is the result of applying masking materials to surfaces with poor adhesion.	

UNIT REF: L1MV59	UNIT TITLE: CLEANING AND MAINTAINING A SPRAY GUN

Level: 1	GL: 16 Hours	TQT: 21 Hours
Overview: This unit will provide the learners with the knowledge and skills to clean and maintain a spray gun.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to clean and maintain a spray gun	1.1. Identify sources of information which supports the cleaning and maintenance of a spray gun 1.2. Identify tools and equipment which aids the cleaning of a spray gun 1.3. Outline the cleaning process of a spray gun 1.4. Identify the correct and incorrect spray gun fan patterns 1.5. State the cause of incorrect spray patterns 1.6. Outline how to rectify incorrect spray patterns 1.7. Identify spray gun maintenance tasks
2. Be able to clean and maintain a spray gun	2.1. Use spray gun manufacturers information to support the cleaning and maintenance process 2.2. Dismantle the main spray gun components 2.3. Use tools and equipment to assist the cleaning process 2.4. Reassemble the spray gun 2.5. Test the spray pattern 2.6. Rectify any faults which have caused an incorrect spray pattern 2.7. Replace any faulty components and seals 2.8. Dispose of any waste material, safely and legally

Evidence Requirements
You **must be observed by your assessor** completing the following tasks on **at least one** occasion.
Cleaning and maintaining a spray gun
Testing a spray gun
Rectifying **two** of the following spray pattern faults:
• heavy bottom
• heavy top
• heavy left or right side
• heavy centre
• split fan pattern

Unit Content	Assessment Criteria
Sources of information which supports the cleaning and maintenance of a spray gun to include: • the spray gun manufacturers' set up and maintenance information • online information • spray gun manufacturers service bulletins / technical information • exploded diagrams • parts identification chart **Tools and equipment which aids the cleaning of a spray gun to include:** • spray gun cleaning machine • spray gun cleaning kit (expand on the contents of the kit) • air duster / blower • the spray gun manufacturers supplied tools **The cleaning process of a spray gun to include:** • methods of avoiding static build up, for example, use a dampened cloth or antistatic type wipes for manual cleaning in a hazardous area • operating cleaning equipment • pre-washing • dismantling processes • cleaning the air cap and fluid nozzle • cleaning the exterior with suitable brushes • cleaning the fluid passages • removing material from the cup • flushing with gun cleaning agents • drying the gun fluid passages and body • the reassembly processes • methods of testing the spray gun • methods of cleaning to be avoided, such as immersing the spray gun in cleaning solutions because this will cause damage and reduce the life of the spray gun. **Spray gun fan patterns to include:** • the correct pattern (this may vary depending on the manufacturer) • heavy top and bottom • heavy sides • heavy centre • split fan pattern • jerky or fluttering spray **The cause of incorrect spray patterns to include:** **Heavy top, bottom and sides** • the air cap horn holes blocked • obstruction on the top or bottom of fluid nozzle • the air cap and/or nozzle seat dirty • dirt or damage on the left or right side of the fluid nozzle **Heavy centre:** • the spreader / fan control requires adjustment • the pressure is too low • the material is too thick **Split fan pattern:** • air pressure is set too high • the fluid adjustment is incorrect • incorrect fan adjustment **Jerky or fluttering spray** • loose or damaged fluid nozzle • damaged fluid nozzle seat or seal • paint material level is running low • the spray gun is being positioned at an extreme angle and affecting the material flow • an obstruction in the fluid passage • loose fluid needle packing nut • damaged fluid needle packing	1.1-1.7

How to rectify incorrect spray patterns to include: • spray gun adjustments • pressure adjustments • cleaning • replacement parts • viscosity adjustments • removing blockages **Spray gun maintenance tasks to include:** • lubrication if it is recommended by the manufacturer • checking parts for wear • cleaning • replacing components • replacing seals • checking the tightness or components - take precautions against overtightening	

UNIT REF: L1MV60	UNIT TITLE: INTERIOR COSMETIC REPAIR TECHNIQUES

Level: 1	GL: 22 Hours	TQT: 28 Hours
Overview: This unit will provide the learner with the knowledge and skills to perform cosmetic repairs to minor damage on vehicle interior trims, carpets and seats. The types of damage may include: burns, cuts, rips, tears, scuffs, holes, cracks, fading and wear.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the limits of cosmetic interior trim repairs	1.1. Identify interior trim damage which is practical to repair 1.2. Identify interior trim damage which is not feasible to rectify using cosmetic repair kits
2. Know a range of vehicle interior materials	2.1. Identify different materials which are used in vehicle Interiors 2.2. Outline the differences in appearance of vehicle interior materials
3. Know how to repair minor interior damage	3.1. Identify technical information to support the repairs 3.2. Identify tools and equipment which are appropriate for minor interior repairs 3.3. Identify consumables which are associated with interior cosmetic repairs 3.4. State how to prepare a range of vehicle interior surfaces and materials 3.5. Outline the techniques which are used to repair a range of interior surfaces and materials
4. Be able to repair minor damage to vehicle interiors	4.1. Assess the damage to ensure it feasible to perform a repair 4.2. Use technical data to support the repair process 4.3. Demonstrate how to repair minor damage to a range of vehicle interior surfaces and materials 4.4. Perform quality checks on the completed repair 4.5. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing interior cosmetic repairs on **at least two** of the following materials.
• Plastic
• Fabric
• Leather
• Vinyl
• Alcantara
• Man-made fibre or wool (carpets)
The types of damage may include: burns, cuts, rips, tears, scuffs, holes, cracks, fading and wear.

Unit Content	Assessment Criteria
Interior trim damage which is practical to repair will include minor: • burns • cuts • rips • tears • scuffs • holes • cracks • fading • wear **Examples of interior trim damage which is not feasible to rectify using cosmetic repair kits to include:** • large areas or severe damage • where the repair cost will be in excess of a replacement part or trim • the damaged is beyond the capability of the repair system	1.1,1.2
Different materials which are used in vehicle interiors will include: • plastic • fabric • leather • vinyl • alcantara • man-made fibre or wool (carpets) **The differences in appearance of vehicle interior materials will include:** • texture • colour and effect • gloss level • pattern / designs	2.1,2.2
Technical information to support the repair process includes: • technical data sheets • manufactures' instructions for paint and consumables • vehicle identification numbers • colour matching information and formulations **Tools and equipment which is appropriate for minor interior repairs will include:** • power sources / generator • extension leads • compressed air systems • spot repair spray guns • pressure gauges • spray gun cleaning kits • airbrushes • airlines and air hoses • countersink bits • heat irons • drying equipment • heatsinks • electronic scales • adhesive and grain replica application guns • Teflon mats • spatulas • scalpels • brushes • colour swatches • 'flockit' sprayers • shaker pots • scissors • tweezers	3.1-3.5

• graining mats **Consumables which are associated with interior cosmetic repairs include:** • cleaning agents • wipes • scuff and clean products • sandpaper • masking materials • tack rags • mixing sticks • mixing pots • paint cups and filters • backing materials • replacement foam • support mesh • primers, paints and clearcoats • adhesion promoters • graining and replicator materials • textured coatings / aerosols • adhesive, gels and glues • fillers • activators • safety blades / cutters • replacement applicator nozzles • water-based coloured pencils • surface conditioners and gels **Preparing a range vehicle interior surfaces and materials includes:** • cleaning • protecting surrounding areas • removing burnt fabric • countersinking holes • drilling the ends of cracks in plastics • masking • sanding / abrading • removing dust and contaminates • filling • shaping **Techniques which are used to repair a range of interior surfaces and materials will include:** • recreating textures and graining • replacing trim and seat foams • reinforcing holes and using backing materials • matching colours and gloss levels • blending colours • reinforcing rips and tears • applying and blending fibres • matching and recreating patterns and designs	

UNIT REF: L1MV61	UNIT TITLE: PANEL JOINT SEALING

Level: 1	GL: 13 Hours	TQT: 16 Hours
Overview: This unit will provide the learner with the knowledge and skills to apply sealants to steel panel joints and recreate the original appearances.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the different types of panel joint seam sealers	1.1. State the purpose of panel joint seam sealers 1.2. Identify different methods of applying seam sealers 1.3. State the properties of seam sealers
2. Know how to remove existing seam sealers	2.1. Identify tools which can be used to remove existing seam sealers 2.2. State how to remove existing seam sealers
3. Know the tools and equipment which are used to apply and seam sealers	3.1. Identify the tools and equipment which are used to apply seam sealers 3.2. State the purpose of the tools and equipment
4. Know how to apply seam sealers	4.1. Outline how to prepare seam sealers for use 4.2. State how to prepare the panel joints to accept seam sealers 4.3. Outline the techniques which can be used to recreate different appearances and textures
5. Be able to apply seam sealers to panel joints	5.1. Use technical data to support the task 5.2. Select the relevant type of seam sealer 5.3. Prepare surfaces to accept the seam sealer 5.4. Protect surrounding areas from contamination 5.5. Use tools and equipment to apply seam sealer 5.6. Demonstrate how to recreate the original appearance of the sealed joint 5.7. Clean the tools and equipment 5.8. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** sealing steel panel joints on **at least one** occasion using **two** of the following techniques.
• A traditional type bead
• A textured bead
• A swirl bead
• A push pull bead

Unit Content	Assessment Criteria
The purpose of panel joint seam sealers to include: • sealing interior and exterior automotive body joints • providing a permanent, hard and flexible seal on flanges and overlapped panels **Different methods of applying seam sealers includes:** • spray • brush • tape versions • applicator guns **The properties of seam sealers to include:** • adhesion qualities • being paintable • non-shrinking • weathering properties • water and solvent resistant • resistance to sagging • flexibility	1.1,1.2,1.3
Tools which can be used to remove existing seam sealers include: • a hand drill • a belt sander • sanders / grinders • scrapers **How to remove existing seam sealers to include:** • using clean and strip abrasive wheels on accessible areas • belt sanding in hard to reach areas	2.1,2.2
The tools and equipment which are used to apply seam sealers include: • pneumatic sealant gun • battery operated sealant gun • manual sealant gun • brushes • nozzles • compressor • airlines and compressed air filters • air duster / blower • plastic spreader **The purpose of the tools and equipment to include:** • to aid the removal of existing or old sealers • to dispense and apply the sealers • chance the appearance and texture of the sealer • smooth out wet sealed joints • to supply a power source to pneumatic applicator guns (compressor and airlines)	3.1,3.2
How to prepare the sealant to include: • equalising and purging the tubes of sealant • fitting the nozzle • filling the nozzle • applying a test bead • observing the colour and 'mix' of the test bead **How to prepare panel joints to accept seam sealers to include:** • removing existing sealers (if required) • blow out any moisture and dirt • cleaning and degreasing the joints without saturating • drying the joint • removing dust from the panel surfaces • abrading the surface • Apply protection	4.1,4.2,4.3

Preparation may vary and is dependent on the sealer manufacturers' instructions. The process may alter depending whether the sealant can be applied direct to metal (DTM) or is required to be applied over a primed surface. **The techniques which can be used to recreate different appearances and textures include:** • applying controlled low pressure air to the wet sealant to create a texture • applying a textured sealant • smoothing wet sealant out with a plastic spreader • applying the sealant using a swirl technique • applying the sealant using a push pull technique	

UNIT REF: L1MV62	UNIT TITLE: REMOVING AND APPLYING GRAPHICS AND LETTERING

Level: 1	GL: 13	TQT: 17
Overview: This unit will provide the learner with the knowledge and skills to remove and apply graphics and lettering to flat panels.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the tools and equipment which are used to remove and apply graphics and lettering	1.1. Identify tools and equipment which are used to remove and apply graphics and lettering 1.2. State the purpose of the tools and equipment
2. Know how to remove graphics and lettering	2.1. Outline the methods which can be used to remove graphics and lettering 2.2. State how to remove adhesive and residue from the surface
3. Know how to apply graphics and lettering	3.1. State the surface preparation process which is required prior to applying graphics and lettering 3.2. Outline the methods which can be used to ensure accurate positioning of the graphics and lettering 3.3. Outline the methods which can be used to apply graphics and lettering 3.4. Identify faults which may occur when applying graphics and lettering 3.5. State the rectification process for faults which may occur when applying graphics and lettering
4. Be able to remove graphics and lettering	4.1. Select the tools and equipment suitable to remove graphics and lettering 4.2. Demonstrate the removal of graphics and lettering 4.3. Demonstrate how to remove adhesive and residue from the surface 4.4. Dispose of waste materials safely and legally
5. Be able to apply graphics and lettering	5.1. Prepare the surface to accept the graphics and lettering 5.2. Mark out the area to ensure the correct positioning of the graphics and lettering 5.3. Position the graphics and lettering prior to fitting 5.4. Apply the graphics and lettering to the surface 5.5. Check the graphics and lettering for any application faults 5.6. Clean the surface after completing the task

Evidence Requirements
You **must be observed by your assessor** completing **all** following tasks on **at least one** occasion.
• Removing graphics or lettering
• Applying graphics or lettering to flat panels

Unit Content	Assessment Criteria
Tools and equipment which are used to remove and apply graphics and lettering to include: • heating tools and equipment • extension leads • vinyl removal wheel • cleaning agent dispensers • cutters, knives and scissors • weeding tools and tweezers • measuring and marking out tools and equipment • squeegees **The purpose of the tools and equipment to include:** • **heating tools and equipment** - to soften the adhesive on existing graphics and lettering and to shape the vinyl on swages or curves. • **extension leads** - to provide power when working on larger areas, such as cars and commercial vehicles. • **vinyl removal wheel** - when secured in a hand drill will provide a method of removing graphics, lettering and adhesive. • **cleaning agents** - to remove traffic film, wax, adhesives and marking out lines. • **cutters, knives and scissors** - for trimming application tapes / transfer tapes and backing materials. • **weeding tools and tweezers** - to remove sections of letters and graphics which are not required, for example the centre of a circle or the centre of a letter 'O'. • **measuring and marking out tools and equipment** - to transfer or take measurements which will aid the accurate positioning of the graphics and lettering. • **squeegees** - for smoothing out and removing air bubbles from graphics and lettering during their application.	1.1-1,2
The methods which can be used to remove graphics and lettering to include: • peeling without heat • controlled warming with the appropriate tools and equipment • vinyl removal wheels **How to remove adhesive and residue from the surface to include:** • water based cleaning agents • solvent cleaning agents • removal techniques and processes	2.1,2.2
The surface preparation process which is required prior to applying graphics and lettering to include: • cleaning • drying • surface examination - dirt nibs • dust removal • static removal **The methods which can be used to ensure accurate positioning of the graphics and lettering to include:** • using drawing's and dimensions • marking out using: plumb lines, chalk lines, masking tape, water based pencils **The methods which can be used to apply graphics and lettering to include:** • applying heat to a cold surface • using water to aid the positioning ('waterslide')	3.1-3.5

• dry fitting methods • removing the backing material • avoiding contact with the adhesive • using a squeegee to 'smooth out' the graphics and lettering • removing excess water • removing air bumbles • how to avoid creases • removing the front film, 'application tape' or 'transfer tape' • drying the surface • quality checks **Faults that may occur when applying graphics and lettering to include:** • creases • air bubbles • dirt on the adhesive backing or panel surface • loss of adhesion • rips and tears • stretching and deforming • minor marks on the surface of the graphics and lettering **The rectification process for faults which may occur when applying graphics and lettering to include:** • removing and replacing the graphics and lettering • applying heat • releasing trapped air • smoothing out creases • cleaning off any minor marks on the surface	

UNIT REF: L1MV63	UNIT TITLE: VEHICLE DAMAGE ASSESSMENT

Level: 1	GL: 22 Hours	TQT: 26 Hours
Overview: This unit will introduce the learner to the role of a Vehicle Damage Assessor, in addition to this, the unit will provide the learner with the knowledge and skills to assess vehicles which have sustained minor panel damage.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the repair procedures for accident damaged vehicles	1.1. Outline the role of a Vehicle Damage Assessor 1.2. State the stages which are involved in repairing accident damaged vehicles
2. Know how to carry out an assessment of minor panel damage	2.1. Identify sources of information which supports the damage assessment process 2.2. State the procedures which are involved in assessing minor panel damage
3. Be able carry out a damage assessment of minor panel damage	3.1. Use relevant information to support the assessment 3.2. Demonstrate the process of assessing minor panel damage 3.3. Record the results of the vehicle assessment

Evidence Requirements
You **must be observed by your assessor** completing the following task on **at least one occasion.**
• Carrying out a damage assessment on a vehicle which has sustained minor panel damage.

Unit Content	Assessment Criteria
The role of a Vehicle Damage Assessor to include: • responsibility for assessing the level and extent of damage to vehicles following accidents • determining if the vehicle can be repaired • the work that needs to be carried out to repair it • assessing the extent of damage to the structural, body, mechanical, electrical and interior components of the vehicle • estimating parts and labour costs • preparing insurance forms to indicate repair costs and recommendations **The stages which are involved in repairing accident damaged vehicles to include:** • vehicle collection • administration and customer service • issuing courtesy vehicles • damage assessment • ordering parts and panels • vehicle exterior pre-cleaning • mechanical, electrical, trim removal, replacing and refitting • panel / body repair • paint preparation • paint spraying	1.1,1.2

• quality control • valeting and detailing • returning the vehicle to the customer	
Sources of information which supports the damage assessment process to include: • vehicle repair methods • online manufacturers' repair information • vehicle data / information • details of how the accident occurred **The procedures which are involved in assessing panel damage to include:** • finding out what happen or caused the damage • recording vehicle data • walking round the vehicle to establish the extent of the damage and its effects • determining the direction and severity of the impact • identifying the damaged areas • identifying the first and last **undamaged** panels • recording the repair tasks • using repair methods or relevant information to support the repair • taking and saving images • checking and reviewing the assessment	2.1,2.2

UNIT REF: L1MV64	UNIT TITLE: METALWORK AND PANEL FABRICATION

Level: 1	GL: 22 Hours	TQT: 30 Hours
Overview: This unit will provide the learner with the knowledge and skills in fabricating and shaping metal panels. The unit will develop skills in using body repair tools, working with metal panels and performing techniques which are used during the repair of damaged vehicles.		

KNOWLEDGE LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know tools and equipment which are used when fabricating metal panels	1.1. Identify tools and equipment which are used when fabricating metal panels 1.2. Give examples of tasks which involve fabrication tools and equipment
2. Know the processes which are used to fabricate metal panels	2.1. Outline different methods which can be used to assist the marking out process 2.2. Outline methods which can be used to shape panels 2.3. Identify different methods of securing fabricated panels to a frame
3. Be able to fabricated a straightforward metal panel	3.1. Use drawings and information to support the task 3.2. Demonstrate how to prepare and mark out a metal panel 3.3. Use tools and equipment to shape a panel 3.4. Trial fit and align the panel prior to securing it to a frame 3.5. Secure the panel to a prefabricated frame

Evidence Requirements
You **must be observed by your assessor** completing the following task on **at least one** occasion.
Fabricating a straightforward metal panel to include:
• marking out
• methods of cutting including an air / powered saw
• folding
• rolling using hand pinch / bending rollers
• drilling
• chamfering edges
• countersinking
• deburring holes
• filing
• punching holes
• folding over edges / flanges
• hammering techniques
• securing to a frame

Unit Content	Assessment Criteria
Tools and equipment which are used to fabricate metal panels include: • marking out tools • cutting equipment and tools • sanding tools • files • drills and drill bits • tape and rule • pinch rollers • benders / folding equipment • punches • deburring tools • countersink bits • hammers and dollies • centre punch **Examples of tasks which can be performed using fabrication tools and equipment to include:** • scribing lines • trimming panels • shaping, chamfering and rounding edges • marking the pitch of welds or fastenings • marking circumferences • removing swarf and burs • folding edges and creating angled folds • producing safe edges • making holes • measuring and transferring measurements from drawings • stretching • rising low spots • lowering high spots • curving panels • creating swage lines	1.1,1.2
The methods which are used to assist the marking out of panels before and during the fabrication process to include: • transferring measurements using: dividers, odd leg callipers, rules and tapes • using templates • making comparisons to scaled drawings and models • jigs **The methods which can be used to shape panels to include:** • hammering techniques • using pinch rollers • bending and folding **Methods of securing fabricated panels to a frame to include:** • folding over edges as used to secure some door skins and wheel arches • screws • nuts and bolts • automotive panel adhesives • blind rivets • resistance spot welding	2.1,2.2,2.3

UNIT REF: L1MV65	UNIT TITLE: PANEL REMOVAL AND REFITTING

Level: 1	GL: 16 Hours	TQT: 24 Hours
Overview: This unit will provide the learner with the knowledge and skills to remove and refit vehicle panels which are secured with mechanical fastenings**.**		

KNOWLEDGE LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know mechanical fastenings which are used to secure vehicle panels	1.1. Identify mechanical fastenings which are used to secure vehicle panels 1.2. Identify locking devices which are used to secure mechanical fastenings
2. Know the procedures involved in removing vehicle panels	2.1. State the sources of information which will support the removing and refitting vehicle panels 2.2. State the importance of isolating the electrical system before removing vehicle panels 2.3. Outline the stages which are involved in the removal of vehicle panels 2.4. State how to protect and store removed panels
3. Know the procedures involved in refitting vehicle panels	3.1. Outline the stages which are involved in the refitting of vehicle panels 3.2. State what actions are to be taken if any parts or fastenings are found to be worn, damaged or broken 3.3. Outline the quality checks which are required after refitting vehicle panels
4. Be able to remove and refit vehicle panels which are secured with mechanical fastenings.	4.1. Use information to support the removal and refitting vehicle panels 4.2. Demonstrate how isolate vehicle electrical systems 4.3. Demonstrate how to remove vehicle panels 4.4. Replace any parts or fastenings which are found to be worn, damaged or broken 4.5. Demonstrate how to refit vehicle panels 4.6. Carry out quality checks to ensure the vehicle can progress to the next stage

Evidence Requirements
You **must be observed by your assessor** completing all following tasks on **at least one** occasion.
• Remove and refit a vehicle front wing
• Remove and refit a bonnet, boot lid or tailgate

Unit Content	Assessment Criteria
Mechanical fastenings which are used to secure vehicle panels to include: • torx bolts • torx screws • self-tapping screws • bolts • flange bolts • plastic rivets • blind rivets • plastic grommets • captive nuts • truss head screws **Locking devices which are used to secure mechanical fastenings to include:** • speed clips • spring washers • flat /plain washers • shakeproof washers	1.1, 1.2
The sources of information which will support removing and refitting vehicle panels to include: • researched repair methods • vehicle manufacturers' information • vehicle repair manuals **The importance of isolating the electrical system before removing vehicle panels to include avoiding:** • electrocution • short circuits and fires • damage to electrical circuits and components **The stages involved in the removal of vehicle panels to include:** • protecting surrounding areas • consulting repair methods • raising the vehicle **Removing:** • the road wheel • the wing liner • releasing bumper fixings • headlamps • sill extensions /covers • windscreen mouldings / trim • weather seals • insulation • miscellaneous items **How to protect and store the removed panels to include:** • covering and protecting panels • storing in a clean, dry and organised area	2.1, 2.2, 2.3, 2.4
The stages involved in the refitting of vehicle panels to include: • replace any broken, damaged or worn fixings • applying sealers to prevent water ingress • refitting the panels in a reverse order to the removal • aligning the panels and setting panel gaps • tightening the fixings to the correct torque settings • applying corrosion protection materials • carrying out quality checks • ensuring the vehicle is ready for the next stages of the repair (painting, calibration, focusing headlamps) **Actions to be taken if any parts or fastenings are found to be worn, damaged or broken to include:** • informing the supervisor or Manager	3.1, 3.2, 3.3

• ordering new parts or fastenings • replacing new parts or fastenings **The quality checks which are required after fitting vehicle panels to include checking:** • for any damage to the panel • the alignment with adjacent panels and bodylines • the fixings are in the appropriate place (bolts taken from the underside of the vehicle put in a visible area such as the top of the wing) • the accuracy of the panel gaps • meeting the specification of the manufacturer or researched repair method • the panel and trims are fixed and secure	

UNIT REF: L1MV69	UNIT TITLE: METAL PREPARATION

Level: 1	GL: 16 Hours	TQT: 21 Hours
Overview: This unit will provide the learner with the knowledge and skills in removing paint and preparing a steel panel to accept body filler. The area of preparation will focus around a minor dent or crease approximately 50mm x 20mm x 1mm.		

KNOWLEDGE LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to remove coatings from vehicle panels	1.1. Give examples of the coatings used to protect vehicle bodies 1.2. State the methods of removing coatings from vehicle body panels 1.3. Define the term 'feather-edging' when referring to preparing vehicle paintwork
2. Know how to prepare steel vehicle panels to accept body filler	2.1. Identify the grades of abrasives which are used to prepare steel body panels 2.2. State the consequences of poor panel preparation 2.3. Outline the process for preparing steel body panels to accept body filler
3. Be able to remove coatings from vehicle panels	3.1. Clean the panels prior to removing the coatings 3.2. Use appropriate tools and equipment to remove the vehicle coatings 3.3. Protect surrounding areas from damage and contamination 3.4. Demonstrate how to remove coatings from vehicle panels
4. Be able to prepare steel vehicle panels to accept body filler	4.1. Use sources of information to support the preparation of steel vehicle panels 4.2. Demonstrate how to prepare steel panels to accept body filler 4.3. Carry out checks to ensure the panel can proceed to the next stage of the repair 4.4. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing all the following tasks on **at least one** occasion.
Removing coatings from a steel vehicle panel to include **at least three** of the following :
• cavity wax
• stone protection
• primers
• topcoats
Preparing a steel vehicle panels to accept body filler

Unit Content	Assessment Criteria
Examples of the coatings used to protect vehicle bodies to include: • cavity wax • underbody coatings • stone protection • primers • topcoats **The methods of removing coatings from vehicle body panels to include:** • abrasive discs for grinding and sanding • bristle discs • clean and strip discs • abrasive belts • sandpaper sheets / strips • chemical stripping and dipping • shot blasting • cleaning agents (cavity wax and corrosion protection coatings) **The term 'feather-edging' when referring to preparing vehicle paintwork to include a sanding a process which:** • gradually removes foundation materials, primers and topcoats • creates a smooth transition in the layers of coatings • eliminating edges of broken foundation materials, primers and topcoats	1.1,1.2,1.3
The grades of abrasives which are used to prepare steel body panels to include a minimum of: • P80 • P180 • P240 and P320 for feather edging of paint work surrounding the bare metal **The consequences of poor panel preparation to include:** • loss of adhesion • imperfections being visible in the surface • visible edges / edge mapping • damage to the panel surface **The process for preparing steel body panels to accept body filler to include:** • consulting technical and manufacturers' information • protecting the surrounding areas • cleaning the surface • selecting the appropriate tools and checking the orbit size of sanders • selecting the appropriate abrasive • sanding the area to bare metal and to an area beyond the repair • feathering the edges of the repair • cleaning the surface • assessing the preparation • disposing of any waste materials	2.2,2.2,2.3

UNIT REF: L1MV70	UNIT TITLE: RESHAPING MINOR PANEL DAMAGE

Level: 1	GL: 16	TQT: 21
Overview: This unit will provide the learner with the knowledge and skills to raise and shape a minor dent which is located on a flat section of a vehicle panel. The minor dent or crease will measure approximately 50mm x 20mm x 1mm and accessible from the rear of the panel.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the hand tools which are used to reshape minor panel damage	1.1. Identify a range of hand tools which are used to reshape minor panel damage 1.2. State the features of panel hammers and dollies
2. Know techniques which are used to reshape minor panel damage	2.1. State the methods which can be used to identify high and low points on the repair area 2.2. Outline the processes which are used to raise dents and reshape minor panel damage
3. Be able to reshape minor panel damage	3.1. Use the appropriate tools to access and reshape the panel damage 3.2. Demonstrate the processes to reshape minor panel damage 3.3. Locate high and low points in the panel surface 3.4. Demonstrate processes to remove minor imperfections from the bare steel surface 3.5. Carry out final checks to ensure the panel surface is ready to accept body filler

Evidence Requirements
You **must be observed by your assessor** completing the following tasks on **at least one** occasion.
• Raising a dent or crease in a vehicle panel
• Using techniques to reshape the panel surface

Unit Content	Assessment Criteria
Hand tools which are used to reshape minor panel damage to include: • body file • bumping file • profile gauge • shrinking hammer • cross pein and finishing hammer • pick and finishing hammer • grid dolly • general purpose dolly • toe dolly • heel dolly • general purpose spoon • sanding block **The features of panel hammers and dollies to include:** **Flat Faced and Finishing Hammers** • lightweight to allow control and the removal of small imperfections in panel surfaces • the faces are designed to provide minimum distortion and stretching • the precision design of the face to prevent creasing of the panel surface.	1.1, 1.2

• the inclusion of pick heads which are designed to remove low spots when finishing • combining finishing faces with cross pein faces to assist in raising and shaping bodylines **Shrinking Hammers to include:** • the shape of the hammer shaft to aid grip and control • using in the final stages of panel finishing on slightly stretched areas of the panel • a grid-pattern face to allow metal to be forced into the spaces of hammer face and therefore shrink the panel surface. Note: shrinking is best carried out on the inside of the panel to minimise metal finishing work. **General Purpose Spoon to include:** • their shape and curvatures for accessing restricted areas **Dollies to include:** • a grid-pattern faced pattern which assists in shrinking stretched areas of metal • polished surface faces • their various shapes for accessing difficult areas • their shape to cater for range of panel curvatures bodylines • their weight to aid the forming and shaping of metal panels • an easy to hold design to aid their use in conjunction with a hammer	
The methods which can be used to identify high and low points on the repair area to include: • using a body file • applying a guide coat • visual inspection • running the hand over the surface **The processes which are used to raise dents and reshape minor panel damage to include:** • assessing the extent of the damage • selecting hammers and dollies which reflect the original shape • accessing the damage • controlling the hammer and executing light blows • the feel and sound of the hammer and dolly working together • roughing out the damaged area • direct hammering techniques • indirect hammering techniques • body filing • techniques in lowering high spots • techniques used to raise low spots • how to avoid excessive metal thickness reduction • carrying out visual inspections • simple metal finishing techniques • assessing the progress of the repair using touch	2.1, 2.2

UNIT REF: L1MV71	UNIT TITLE: APPLICATION OF BODY FILLERS

Level: 1	GL: 22	TQT: 27
Overview: This unit will provide the learner with the knowledge and skills in mixing, applying and shaping body fillers. The recommended repaired area to accept the body filler is 50mm x 20mm x 1mm and located on a flat area of a steel vehicle panel.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the function of body fillers	1.1. State different sources of information which are available to assist the application of body filler 1.2. Outline the function of body fillers 1.3. State the function of finishing fillers and glazes
2. Know how to mix body fillers	2.1. Identify tools and equipment used to mix body fillers 2.2. State how to prepare body filling materials before use 2.3. State the consequences of failing to mix body fillers to the manufactures' recommendations 2.4. Outline the methods which are used to mix body fillers
3. Know how to apply body fillers	3.1. Outline how to clean the panel surface, prior to applying body fillers 3.2. Outline the techniques which are used to apply body fillers 3.3. State the defects which are caused by applying body filler incorrectly
4. Know how to shape and finish body fillers	4.1. Identify tools and equipment which are used to shape body fillers 4.2. Identify the types and grades of abrasives which are used to shape and finish body fillers 4.3. Outline the techniques which are used to shape and finish body fillers 4.4. State how to dry / cure body fillers 4.5. State the checks which are carried out to ensure filled areas are not visible after the application of topcoats

5. Be able to mix, apply and shape body fillers	5.1. Protect surrounding areas from damage and contamination 5.2. Clean the surface before applying body fillers 5.3. Mix and apply body filler 5.4. Demonstrate how to dry / cure body fillers 5.5. Demonstrate how to shape body fillers to the correct contours 5.6. Clean tools and equipment after use 5.7. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing all the following tasks on **at least one** occasion.
• Mixing, applying and shaping body filler
• Mixing, applying and shaping finishing fillers
The recommended repaired area to accept the body filler is 50mm x 20mm x 1mm and located on a flat area of a steel vehicle panel.

Unit Content	Assessment Criteria
Different sources of information which are available to assist the application of body filler to include: • the body filler manufacturers' technical data sheets • the manufacturers' online videos and tutorials **The function of body fillers to include:** • filling imperfections in vehicle panels **The function of finishing fillers and glazes to include:** • one -pack and two-pack materials • filling minor preparation imperfections and pinholes in previously filled areas • specific products for filling minor imperfections and chips on primed or painted areas • self-levelling minor surface paint chips	1.1, 1.2, 1.3
Tools and equipment used to mix body fillers to include: • body filler spreaders / applicators • mixing boards • body filler dispensers **How to prepare body filling materials before use to include:** • checking the product 'use by' dates • opening tins • stirring • setting up and operating body filler dispensers • checking to ensure the products have been stored correctly and in the correct position. For example, the tins are stored upright. **The consequences of failing to mix body fillers to the manufactures' recommendations to include:**	2.1, 2.2, 2.3, 2.4

• being difficult to sand • the clogging of the abrasives • loss off adhesion • unpredictable drying / curing times • not curing • discoloration of primers and topcoats **The methods which are used to mix body fillers to include:** • measuring the hardener and how to avoid under and over activating • mixing techniques which avoid air entrapment in the body filler	
How to clean the panel surface, prior to applying body fillers to include: • suitable types of cleaning agents for the panel surface • water-based and solvent-based cleaning agents • methods of removing dust **The techniques which are used to apply body fillers to include:** • angle of the spreader / applicator • applying even, firm pressure on the spreader / applicator • not applying too much body filler all at once • applying and removing a thin film of body filler, which is sometimes referred to as a 'wetting up coat' • building the area to the required and the recommended thickness • tapering the edges of the filler material to aid the sanding process • skimming off excess material **The defects which are caused by incorrectly applying body filler to include:** • pinholes • loss of adhesion or edge mapping if the filler extends onto painted or unprepared areas • uneven finish • grooves in the body filler • dirt /dust incisions in the body filler • contaminated body filler • low spots within the filled area	3.1, 3.2, 3.3
Tools and equipment which are used to shape body fillers to include: • random orbital sanders • sanding blocks • dust extraction equipment • profile gauge **The types and grades of abrasives which are used to shape and finish body fillers to include:** • sheets • discs • strips • foam-backed pads • P80 • P180 • P240 • P320 • grades recommended by the body filler manufacturer **The techniques which are used to shape and finish body fillers to include:** • using a guide coat to assist in identifying high and low spots • gradually reducing the grades of abrasive to achieve a smooth 'scratch -free' finish • sanding methods and sanding directions • checking the repair by running a hand over the surface to assess where additional sanding or body filler is required • using a profile gauge to compare contours and shapes **How to dry / cure body fillers to include:** • locating the manufacturers' recommended methods of drying the body filler • specific curing temperatures which apply to different products	4.1, 4.2, 4.3, 4.4, 4.5

• air drying • suitable heating methods, for example infrared lamps **To prevent repairs being visible after the application of topcoats, inspections are best made from face and side angles to highlight any missed damage and uneven repairs.** **They may also include checking for:** • deep scratches • lifting / flaking • gouges • pinholes • dirt inclusions • shape and contour • hardener colour streaking • a uniform colour of the body filler	

UNIT REF: L1MV72	UNIT TITLE: RESISTANCE SPOT WELDING

Level: 1	GL: 17	TQT: 23
Overview: This unit will provide the learner with the knowledge and skills to join steel panels using resistance spot welding techniques.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to set up resistance spot welding equipment	1.1. Identify sources of information which aid the setting up of spot welding equipment 1.2. Identify what determines the equipment settings 1.3. Outline the procedures which ensure that the welding tips make even contact with the panel 1.4. Identify settings which are adjustable on spot welding equipment
2. Know how to join panels using resistance spot welding techniques	2.1. State the effects of poor panel preparation prior to spot welding 2.2. Outline the processes which are involved in spot welding
3. Know how to test the quality of resistance spot welds	3.1. State the purpose of carrying out spot weld testing 3.2. Identify methods of testing the quality of spot welds 3.3. Outline the processes which are involved in testing spot welds 3.4. Identify welds which are fit for purpose
4. Be able to carry out a test to assess the quality of resistance spot welds	4.1. Prepare test panels that represent the vehicle material 4.2. Use tools and equipment which are appropriate for testing spot welds 4.3. Carry out tests to assess the quality of the spot welds 4.4. Identify the spot welds which are fit for purpose
5. Be able to join panels using resistance spot welding techniques	5.1. Use information to support spot welding processes 5.2. Demonstrate how to set up spot welding equipment 5.3. Adjust the equipment to produce welds which are fit for purpose 5.4. Prepare panel surfaces to accept spot welds 5.5. Demonstrate how to join panels using spot welding techniques 5.6. Demonstrate how to shut down spot welding equipment 5.7. Dispose of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing all the following tasks on **at least one** occasion.
• Carrying out a peel test
• Marking out a pitch of 50mm between the welds
• Applying corrosion protection to the mating faces
• Joining panels using resistance spot welding techniques
Note: Simulated activities are acceptable rather than using vehicle panels.

Unit Content	Assessment Criteria
Sources of information which aid the setting up of spot welding equipment to include: • the equipment manufacturers' instructions • online tutorials and advice • technical helplines **Reasons which determine the equipment settings include:** • material thickness • panel stack thickness • the type of material **The procedures which ensure that the welding tips make even contact with the panel to include:** • alignment • tip dressing **Settings which are adjustable on spot welding equipment to include:** • welding modes • amperage and current • clamping force • timings • weld cycles for example pulsed cycle • the compressed air supply on some models	1.1, 1.2, 1.3, 1.4
The effects of poor panel preparation prior to spot welding to include: • weak welds • poor appearance • undersized welds • increased cost to rectify faults • downtime • reduced productivity **The processes which are involved in spot welding to include:** • consulting technical information • cleaning the panel surface • preparing the surface in accordance with the vehicle manufacturers instructions and researched repair methods • marking out the pitch of the welds • applying adhesives and corrosion protection materials • setting up the welding equipment • producing a test coupon • carrying out a peel test • assessing weld quality • adjusting welding equipment • aligning, positioning and clamping panels • accessing the panel flanges with the correct arms	2.1, 2.2

• accurately joining panels using spot welds • cleaning and dressing spot welds • shutting down resistance spot welding equipment • disposing of waste materials safely and legally	
The purpose of carrying out spot weld testing to include: • assessing the quality of the weld prior to welding the panel / vehicle • aiding setting up and adjusting the equipment to produce quality welds **Methods of testing the quality of spot welds to include:** • using test coupons • a peel test • a chisel test **The processes which are involved in testing spot welds to include:** **Peel test** • producing a spot welded test coupon • griping one of the coupons • applying a 'peeling' force to the coupons until the weld tears apart • assessing the weld to ensure it is fit for purpose **Chisel test** • producing a spot welded test coupon • griping one of the coupons • driving a chisel between the coupons until they deform but not tear • assessing the weld to ensure it is fit for purpose **Welds which are fit for purpose to include:** • the weld being torn from one of the panels • measuring the diameter of the weld nugget and compare to specifications and the size of the nugget when compared to original welds on the vehicle	3.1, 3.2, 3.3, 3.4

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
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
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
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 **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	3.1-3.3

• 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	
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

UNIT REF: L1MV74	UNIT TITLE: PAINTLESS DENT REMOVAL TECHNIQUES

Level: 1	GL: 19	TQT: 24
Overview: This unit will introduce the learner to the knowledge and skills in removing minor dents without damaging the vehicle paintwork. The dent will be removed from a steel panel and located on a flat area which is easily accessible from the rear. The recommended dent size will be between 10 - 20mm in diameter.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know the purpose of paintless dent removal techniques	1.1. Define the term 'paintless dent removal' 1.2. State the advantages of using paintless dent removal techniques 1.3. Outline the limitations of paintless dent removal techniques
2. Know the tools and equipment which are used when carrying out paintless dent removal tasks	2.1. Identify the tools and equipment which are used during paintless dent removal tasks 2.2. Identify consumables which are used in conjunction with paintless dent removal tools and equipment
3. Know the processes which are involved with removing dents without damaging the paintwork	3.1. Outline the stages of removing a minor dent from a flat section of a vehicle panel 3.2. State how to remove minor paint marks after removing the dent
4. Be able to remove a minor dent from a vehicle panel using paintless dent removal techniques	4.1. Protect vehicle surfaces and surrounding areas from damage 4.2. Demonstrate how to gain access to the back of a dent 4.3. Select tools and equipment which are appropriate for the task 4.4. Remove a minor dent using paintless dent removal techniques 4.5. Replace corrosion protection materials 4.6. Carry out checks to the surface and take any necessary actions

Evidence Requirements
You **must be observed by your assessor** completing the following task on **at least one** occasion.
• Removing a minor dent using paintless dent removal techniques

Unit Content	Assessment Criteria
The term 'paintless dent removal' can be defined as: • paintless dent removal is a cost-effective process which eliminates the need for body filling, paint spraying and complete panel replacement. **The advantages of using paintless dent removal techniques to include:** • cost reduction • eliminating spraying and colour mismatches • reduced repair times • material cost reduction • maintaining the vehicle original finish • restores the value of the vehicle • carrying out mobile repairs with less inconvenience for the customer • environmentally friendly • reduced insurance claims **The limitations of paintless dent removal techniques to include:** • a need for flexibility of the paint • the amount the metal has been stretched by the damage • achieving the best results on shallow / minor dents • some creases may not be repairable • swages and bodylines shapes • box sections and restricted access • reinforced areas of the vehicle • technician skill levels	1.1, 1.2, 1.3
The tools and equipment which are used during paintless dent removal tasks to include: • pulling frame • slide hammer • glue gun • hammer • 'tap-down' sticks • glue tabs • trim tool set • brace set • bars • hooks • reflective board and suction cup • bonnet prop • window wedge • dollies • mallet • window protector • tool case • polishing machine / buffer **Consumables which are used in conjunction with paintless dent removal tools and equipment to include:** • glue remover • glue release spray • glue sticks • cleaning agents • polish and compounds • fine grade abrasives	2.1, 2.2

The stages of removing a minor dent from a flat section of a vehicle panel to include: • cleaning the panel • removing trim and gaining access to the back of the damage • knocking down high spots • fixing glue tabs • operating a slide hammer • selecting tabs • removing glue tabs and adhesive • fitting the reflective board • selecting the correct bars and tools • applying controlled heat • applying pressure and manipulating the damaged area • replacing corrosion protection materials • assessing the repair area **The removal of minor paint marks after removing the dent to include:** • sanding with fine grade abrasives • using rubbing compounds • using a polishing machine / buffer • applying a protective wax polish to the panel	3.1, 3.2

UNIT REF: L1MV75	UNIT TITLE: ADHESIVE BONDING AND MECHANICAL FASTENING

Level: 1	GL: 21	TQT: 28
Overview: This is an introduction unit for the learner to gain the knowledge and skills in securing steel panels using adhesives and mechanical fastenings.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know why adhesives and mechanical fastenings are used in vehicle construction and repair	1.1. State the main reasons why adhesives and mechanical fasteners are used in vehicle construction 1.2. Identify different types of adhesives which are used to join vehicle panels 1.3. Identify mechanical fastenings which are used in vehicle construction and repair
2. Know the processes involved in joining vehicle panels using adhesives and mechanical fastenings	2.1. Identify tools and equipment which are used to apply adhesives and mechanical fastenings 2.2. State the sources of information which support the process of applying adhesive and mechanical fastenings 2.3. Identify different types of joining techniques 2.4. State the processes which are involved in joining vehicle panels using adhesives and mechanical fastenings 2.5. Outline how to cure panel joining adhesives
3. Be able to join panels using adhesives and mechanical fastenings	3.1. Use different sources of information to support the joining process 3.2. Demonstrate different methods of joining panels using adhesives and mechanical fastenings 3.3. Carry out checks and final inspections to panel joints 3.4 Clean tools and equipment after use 3.5 Disposal of waste materials safely and legally

Evidence Requirements
You **must be observed by your assessor** completing the following task on **at least one** occasion.
Joining panels using a :
• butt joint and 2K adhesive in conjunction with a backing plate and suitable mechanical fastenings.
• lap joint and a 1K adhesive in conjunction with 4 blind rivets spaced at a pitch of 50mm.
Note: A simulated test panel may be used for the above tasks.

Unit Content	Assessment Criteria
The main reasons for adhesives and mechanical fastenings being used in vehicle construction to include: • reducing the weight of vehicle bodies • joining different metals and composite materials **Different adhesives which are used to join vehicle panels to include:** • 1K • 2K **Mechanical fastenings which are used in vehicle construction to include:** • blind rivets • backing plates combined with studs and nuts • studs • nuts • self-piercing rivets	1.1, 1.2, 1.3
Tools and equipment which is used when applying adhesives and mechanical fastenings to include: • masking material dispensers to assist in protecting the work area • air compressor • panel technicians hand tools • riveting equipment • body panel clamps • drilling and punching equipment • drill bits and punches to suit the types of mechanical fixings • appropriate heating and drying equipment • infrared thermometer • cleaning wheels • sanding equipment • torque screwdriver / wrench • adhesive application equipment • cleaning and degreasing dispensers **The sources of information which support the process of applying adhesive and mechanical fastenings to include:** • industry approved repair methods • material safety data sheets • product technical data sheets **Different types of joining techniques to include a:** • lap joint • butt joint **The processes involved in joining vehicle panels using adhesives and mechanical fasteners to include:** • using industry approved researched repair methods • locating and following material safety data sheets and material technical data sheets where appropriate • preparing and protecting the work area • selecting correct tools and equipment • preparing the panels and backing plates to receive adhesive and mechanical fastenings • dry fit the panel and backing plate to check the alignment and measurements • locating the work-time and preparing the adhesive material and application equipment • producing an adhesive test bead • protecting areas to inhibit corrosion • applying adhesive in accordance with the manufacturers specifications	2.1, 2.2, 2.3, 2.4, 2.5

• fitting and aligning the panels and backing plate • securing panels using clamping, bonding and mechanical fastening processes • removing excess adhesive and achieving an acceptable cosmetic finish prior to curing • identifying if a joint is not correctly formed and identifying the correct actions to take • locating the curing times and curing the adhesive material as specified in the manufacturers' instructions • cleaning tools, equipment and the work area • disposing of materials safely and legally **How to cure panel joining adhesives to include:** • heat pads / blankets • infrared lamps • air drying	

UNIT REF: L1MV76	UNIT TITLE: VEHICLE EXTERIOR VALETING AND DETAILING

Level: 1	GL: 15 Hours	TQT: 20 Hours
Overview: This unit introduces learners to the principles of exterior vehicle valeting. It includes the safe use of tools and equipment and cleaning materials for the external surfaces of vehicles. Similarly, only common cleaning materials are covered and the unit does not include specialised cleaning products often used by commercial valeting businesses.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know valeting tools and equipment and how they are used correctly and safely	1.1 Identify the tools and equipment for valeting and detailing a vehicle's exterior 1.2 Identify the checks that are necessary to prepare and use valeting tools safely and correctly
2 Know the cleaning materials and how they are used correctly and safely	2.1 Identify the cleaning materials used for valeting and detailing a vehicle's exterior 2.2 Identify the checks and precautions for correctly using vehicle cleaning materials
3 Be able to carry out vehicle exterior valeting and detailing	3.1 Work safely when carrying out vehicle exterior valeting and detailing 3.2 Select and use the correct technical data, tools, equipment and cleaning materials for vehicle exterior valeting and detailing 3.3 Demonstrate the correct sequence & procedure when completing vehicle exterior valeting and detailing to: a Exterior of the vehicle bodywork b Alloy wheels
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 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:**
Using appropriate sequence and procedures to clean and polish the exterior of the vehicle bodywork
Using appropriate procedures, materials and equipment to clean alloy wheels

Unit Content	Assessment Criteria
The tools and equipment for valeting a vehicle's exterior to include: • water hose (mains pressure) • pressure washers • cleaning brushes for paintwork • wheel brushes or scrubbers • sponges and buckets • chamois leather • polishing cloth **The checks that are necessary to prepare and use valeting tools safely and correctly to include:** • ensuring sponges and cleaning cloths are free of grit and dirt prior to cleaning • soaking and squeezing chamois leather for drying surfaces • checks and preparation of pressure washers	1.1-1.2
The cleaning materials used for valeting a vehicle's exterior to include: • shampoo • polish • tyre blackener • glass cleaner • tar remover • chrome cleaner • alloy wheel cleaner **The checks and precautions for correctly using cleaning materials to include:** • following vehicle 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

UNIT REF: L1MV77	UNIT TITLE: ENGINE BAY VALETING AND DETAILING

Level: 1	GL: 15 Hours	TQT: 20 Hours
Overview: This unit introduces learners to the principles of engine bay valeting and detailing. It includes the safe use of tools and equipment and cleaning materials for the engine bay. Similarly, only common cleaning materials are covered and the unit does not include specialised cleaning products often used by commercial valeting businesses.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know the valeting tools and equipment and how they are used correctly and safely	1.1 Identify the commonly used tools and equipment for valeting and detailing a vehicle's engine bay. 1.2 Identify the checks that are necessary to prepare and use valeting tools safely and correctly.
2 Know the cleaning materials and how they are used correctly and safely	2.1 Identify the cleaning materials used for valeting and detailing a vehicle's engine bay 2.2 Identify the checks and precautions for correctly using vehicle cleaning materials.
3 Be able to carry out engine bay valeting and detailing	3.1 Work safely when carrying out vehicle engine bay valeting and detailing 3.2 Select and use the correct technical data, tools, equipment and cleaning materials for vehicle engine bay valeting and detailing 3.3 Demonstrate the correct sequence & procedure when completing vehicle engine bay valeting and detailing
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 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:**
Using the correct sequence and procedures to clean and dress the engine bay

Unit Content	Assessment Criteria
The tools and equipment for valeting a vehicle's engine bay to include: • water hose (mains pressure) • pressure washers • cleaning brushes for degreasing • sponges and buckets • chamois leather • polishing cloth **The checks that are necessary to prepare and use valeting tools safely and correctly to include:** • ensuring sponges and cleaning cloths are free of grit and dirt prior to cleaning • soaking and squeezing chamois leather for drying surfaces • checks and preparation of pressure cleaners	1.1, 1.2
The cleaning materials used for valeting a vehicle's engine bay to include: • shampoo • polish • degreaser • tar remover • dressing fluids **The checks and precautions for correctly using cleaning materials to include:** • following vehicle 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

UNIT REF: L1MV78	UNIT TITLE: VEHICLE INTERIOR VALETING AND DETAILING

Level: 1	GL: 15 Hours	TQT: 20 Hours
Overview: This unit introduces learners to the principles of vehicle interior valeting. It includes the safe use of tools and equipment and cleaning materials for the internal surfaces of vehicles. Similarly, only common cleaning materials are covered and the unit does not include specialised cleaning products often used by commercial valeting businesses		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know the valeting tools and equipment and how they are used correctly and safely	1.1 Identify the commonly used tools and equipment for valeting a vehicle's interior 1.2 Identify the checks that are necessary to prepare and use valeting tools safely and correctly
2 Know the cleaning materials and how they are used correctly and safely	2.1 Identify the cleaning materials used for valeting a vehicle's interior 2.2 Identify the checks and precautions for correctly using cleaning materials
3 Be able to carry out vehicle interior valeting and detailing	3.1 Work safely when carrying out vehicle interior valeting and detailing 3.2 Select and use the correct technical data, tools, equipment and cleaning materials for vehicle interior valeting and detailing 3.3 Demonstrate the correct sequence & procedure when completing vehicle interior valeting and detailing
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 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:**
Using appropriate sequence and procedures to clean, polish and dress the vehicles interior

Unit Content	Assessment Criteria
The commonly used tools and equipment for valeting a vehicle's engine bay to include: • sponges and buckets • cleaning cloth • upholstery brush • vacuum cleaner • polishing cloth **The checks that are necessary to prepare and use valeting tools safely and correctly to include:** • ensuring sponges and cleaning cloths are free of grit and dirt prior to cleaning	1.1, 1.2
The cleaning materials used for valeting a vehicle's interior to include: • upholstery cleaner • shampoo • glass cleaner • dashboard cleaner • carpet shampoo **The checks and precautions for correctly using cleaning materials to include:** • following vehicle 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

UNIT REF: L1MV79	UNIT TITLE: CLEANING AND TREATING OF FABRIC FOLDING ROOFS

Level: 1	GL: 10 Hours	TQT: 15 Hours
Overview: This unit introduces learners to the principles of cleaning and treating of fabric folding roofs. It includes the safe use of tools and equipment and cleaning materials for the fabric folding roof. Similarly, only common cleaning materials are covered and the unit does not include specialised cleaning and treating products often used by commercial valeting businesses.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1 Know the valeting tools and equipment and how they are used correctly and safely	1.1 Identify the tools and equipment for valeting and treatment of a vehicle's fabric roof 1.2 Identify the checks that are necessary to prepare and use valeting tools safely and correctly
2 Know the cleaning and treating materials and how they are used correctly and safely	2.1 Identify the cleaning and treatment materials used for valeting and treating a vehicle's fabric roof 2.2 Identify the checks and precautions for correctlyusing cleaning and treatment materials
3 Be able to carry out cleaning and treating of fabric folding roofs	3.1 Work safely when carrying out cleaning and treating fabric folding roofs 3.2 Select and use the correct technical data, tools, equipment, cleaning and treatment materials for fabric folding roofs 3.3 Demonstrate the correct sequence & procedure when cleaning and treating fabric folding roofs
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 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:**
Using the correct sequence & procedure when cleaning and treating fabric folding roofs

Unit Content	Assessment Criteria
The tools and equipment for valeting a vehicle's fabric roof to include: • sponges and buckets • cleaning cloth (lint free) • upholstery brush • Air line • Vacuumed cleaner • Hot air gun **The tasks that are necessary to prepare and use valeting tools safely and correctly to include:** • ensuring sponges and cleaning cloths are free of grit and dirt prior to cleaning • electrical safety associated with power hoses and vacuum cleaners	1.1, 1.2
The cleaning materials used for valeting a vehicle's fabric roof to include: • vinyl/fabric cleaner • shampoo • glass cleaner • vinyl/fabric roof sealer **The tasks and precautions for correctly using cleaning materials to include:** • following vehicle 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