

<b>Title</b>	<b>Demonstrate knowledge of light motor vehicle systems and components</b>		
<b>Level</b>	<b>2</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	People credited with this unit standard are able to explain primary systems, structural components and principal components of light motor vehicle primary systems.
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<b>Classification</b>	Driving > Core Driving Knowledge and Skills
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<b>Available grade</b>	Achieved
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## Guidance Information

### Definitions

Explain *in terms of basic function* means to make clear, verbally and/or by demonstration, the essential purpose of the system or the component.

*Hub and stub axle assembly* includes front wheels and tyres.

A *light motor vehicle* is a motor vehicle (including a tractor but excluding a motorcycle) that has a gross laden weight of not more than 4500 kg or a combination vehicle that has a gross combined weight of not more than 4500 kg.

A *MacPherson Strut* is a component of a vehicle's suspension consisting of a shock absorber mounted within a coil spring.

*Primary system* refers to a system without which the vehicle will not operate.

*Principal components* refer to components without which the vehicle will not operate. This may refer to one or several components.

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## Outcomes and performance criteria

### Outcome 1

Explain primary systems and structural components of light motor vehicles.

### Performance criteria

1.1 Primary systems are explained in terms of basic function.

Range engine, cooling system, fuel and air supply system, exhaust system, drivetrain system, braking system, steering system, electrical system, suspension system.

1.2 Principal structural components are explained in terms of basic function.

Range monocoque construction elements, chassis rails, cross-members.

## Outcome 2

Explain principal components of light motor vehicle primary systems.

### Performance criteria

- 2.1 Principal components of the engine are explained in terms of basic function.
- Range engine block, cylinder head, sump, valve train, crankshaft, flywheel, piston and connecting rod assemblies.
- 2.2 Principal components of the engine cooling system are explained in terms of basic function.
- Range water pump and drive, radiator, coolant hoses, thermostat, fan assembly, water jackets.
- 2.3 Principal components of the engine fuel and air supply system are explained in terms of basic function.
- Range fuel tank, fuel lines, fuel filters, fuel pump, air filter, inlet manifold; one of – carburettor, injectors, alternative fuel regulator, alternative fuel mixer.
- 2.4 Principal components of the exhaust system are explained in terms of basic function.
- Range exhaust manifold, exhaust pipes, exhaust silencer, turbocharger.
- 2.5 Principal components of the drivetrain system are explained in terms of basic function.
- Range transmission, differential assembly.
- 2.6 Principal components of the braking system are explained in terms of basic function.
- Range brake pedal assembly, brake lines, brake assemblies, parking brake control, master cylinder, wheel cylinders, brake fluid reservoir, brake booster.
- 2.7 Principal components of the steering system are explained in terms of basic function.
- Range steering wheel, steering column, manual steering box, power assisted steering box, steering linkages, power steering pump, power steering hoses, hub and stub axle assembly.

2.8 Principal components of the electrical system are explained in terms of basic function.

Range battery, battery cables, alternator, starter motor, wiring loom, lighting, circuit protection.

2.9 Principal components of the suspension system are explained in terms of basic function.

Range coil spring, leaf spring, suspension mounts, shock absorbers, MacPherson Strut.

<b>Planned review date</b>	31 December 2025
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 April 2000	31 December 2023
Revision	2	13 March 2001	31 December 2023
Review	3	22 October 2004	31 December 2023
Review	4	27 October 2006	31 December 2023
Review	5	28 April 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0014
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.