Government of **Western Australia**
**School Curriculum and Standards Authority**

# SAMPLE ASSESSMENT OUTLINE

## AUTOMOTIVE ENGINEERING AND TECHNOLOGY
## GENERAL YEAR 11

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# Sample assessment outline

## Automotive Engineering and Technology – General Year 11

### Unit 1 and Unit 2

| Assessment type | Assessment task weighting | Duration | Assessment task |
|---|---|---|---|
| Response 20% | 5% | Semester 1 Weeks 1–2 | **Task 1: Safety in the workshop**<br>This task is compulsory and is to be completed prior to attempting any practical work.<br>Activities:<br>• watch safety video<br>• general safety aspects of workshop practice<br>• complete automotive Smartmove certificate<br>• choose an automotive workshop machine or skill and describe the Occupational Safety and Health (OSH) requirements |
| | 3% | Semester 1 Weeks 6–8 | **Task 3 Part A: Scientific principles of two and four stroke engine cycles**<br>Explain, with the aid of diagrams in a journal, both the four-stroke cycle and the two-stroke cycle. Diagrams may be copied, but you must label them yourself. Explain each stroke, stating the position of the piston and whether the valves are open or closed. |
| | 2% | Weeks 9–10 | **Task 3 Part B: Different vehicular types and styles**<br>• list and categorise the different forms and designs of transportation used in society<br>• use collected images and chart either the broad range of transportation types, or a range of specialty vehicles |
| | 2% | Semester 2 Weeks 1–2 | **Task 8: Revisit and reinforce safety in the workshop**<br>This task is to be completed prior to attempting any practical work.<br>Activities:<br>• watch safety video<br>• general safety aspects of workshop practice<br>• complete automotive Smartmove certificate |
| | 3% | Semester 2 Weeks 3–5 | **Task 9: Report on the operation of an automotive mechanical system**<br>• explain the parts and operation of an automotive system chosen from the syllabus list with the aid of diagrams<br>• diagrams may be copied but you must annotate them yourself<br>• list references and sources of information |
| | 3% | Semester 2 Weeks 6–7 | **Task 10: Report on roadworthiness of a standard family vehicle**<br>• investigate roadworthiness requirements of vehicles – ADR applications meet roadworthiness<br>• list what is checked during an ‘over the pits’ check |

| Assessment type | Assessment task weighting | Duration | Assessment task |
|---|---|---|---|
| | 2% | Semester 2<br>Weeks 7–8 | **Task 11: Report on costs associated with operating standard passenger vehicles**<br>Investigate the cost of operating different forms of vehicles. Choose one make of vehicle and investigate the running costs of the different models:<br>• costs of small, medium and large passenger models<br>• fuel consumption<br>• insurance<br>• servicing and maintenance |
| Investigation and diagnostics 20% | 5% | Semester 1<br>Weeks 3–5 | **Task 2 Part A: Motor vehicle safety inspection**<br>Using the workshop cars and equipment, and in consultation with your teacher, complete a multiple-point safety vehicle inspection on the following vehicular systems:<br>• driveline, wheels and tyres<br>• steering and suspension<br>• body and frame construction<br>• electrical systems<br>• cooling systems<br>• hydraulic braking systems |
| | 2% | Semester 1<br>Weeks 9–10 | **Task 4: Automotive materials identification**<br>• investigate the different materials used to make a vehicle<br>• list the major vehicle parts and identify the different metals, plastics, rubber and other likely materials that make up each part. Briefly explain why the properties of the materials are suitable for each part |
| | 3% | Semester 1<br>Weeks 11–15 | **Task 5: Engine build and components**<br>• identify major engine components and how they are fitted/fixed together<br>• explore safe methods of dismantling and re-assembly of components |
| | 5% | Semester 2<br>Weeks 7–9 | **Task 12 Part A: Design a tool or device to be used during automotive workshop activities** |
| | 5% | Semester 2<br>Weeks 10–12 | **Task 13: Car maintenance techniques and investigations to understand processes**<br>The following processes:<br>• methods of diagnosis for fault finding<br>• compression test<br>• engine timing<br>• oils and oil filters<br>• air and fuel filters<br>• radiator and coolant<br>• brake pads and brake fluid<br>• tyres and rotation<br>• electrical wiring, light and bulbs<br>Complete theory notes and worksheets |

| Assessment type | Assessment task weighting | Duration | Assessment task |
|---|---|---|---|
| Production and assembly 60% | 10% | Semester 1 Weeks 3–5 | **Task 2 Part B: Motor vehicle component maintenance inspection**<br>Using the workshop cars and equipment, and in consultation with your teacher, complete a component maintenance inspection |
| | 15% | Semester 1 Weeks 11–15 | **Task 6: Complete engine dismantle and rebuild**<br>• strip components<br>• clean and label<br>• inspect and measure components of an engine<br>• compare to manufacturer's specifications<br>• order parts<br>• assemble engine to manufacturer's specifications |
| | 5% | Semester 1 Weeks 15–16 | **Task 7: Engine test and tune**<br>This activity is based on the newly-assembled engine, and is primarily centred on the student's skills in finishing off and performing a start-up and tune on the assembled engine |
| | 10% | Semester 2 Weeks 9–12 | **Task 12 Part B – Build the proposed tool or device to be used during automotive workshop activities**<br>Use workshop equipment safely to produce the tool or device |
| | 10% | Semester 2 Weeks 11–14 | **Task 14: Car maintenance techniques**<br>Complete the following maintenance tasks:<br>• oil and oil filter change<br>• air and fuel filter change<br>• brake pad change<br>• brake fluid bleed<br>• tyre rotation<br>• coolant flush |
| | 10% | Semester 2 Weeks 14–16 | **Task 15: Basic car troubleshooting techniques**<br>Complete the following trouble shooting tasks:<br>• methods of diagnosis for fault finding<br>• compression test<br>• engine timing tune up<br>• jumpstart<br>• electrical lights and changing a bulb |
| **Total 100%** | **100%** | | |