



basic education

Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA

# **CURRICULUM AND ASSESSMENT POLICY STATEMENT GRADE R-5 FOR LEARNERS WITH SEVERE INTELLECTUAL DISABILITY**

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## **MOTOR MECHANICS**

### **GRADE 4-5**

Curriculum and Assessment  
Policy Statement Grade R-5  
for learners with Severe  
Intellectual Disability  
2018 Orientation

# Learning programme

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## 1 SECTION 1 INTRODUCTION

## 2 SECTION 2: INTRODUCTION TO MOTOR MECHANICS.

### 2.1 What is Motor Mechanics?

Motor Mechanics introduces learners to the fundamentals of vehicle technology and equips them with the necessary confidence to perform tasks related to, for example, vehicle components, engines, gearboxes, fuel systems, body components, electronics and use of specialised garage equipment. The tasks are limited to removal, cleaning, servicing and fitting. This subject will equip learners to assist in; tyre and suspension fitment centres, garages and mechanical workshops in the maintaining and servicing of motor vehicles. The learner will be able to assist a qualified artisan, semi-skilled artisan or be able to follow a supervisor's instructions.

Motor Mechanic skills and the content embedded in the skills are taught over two years in Grade 4 and 3 years in Grade 5. The teacher is allowed to adapt the difficulty level of the skills to the ability of the learner. During grade 5 in the second and third years the learners are placed in the learner work experience programme (LWEP) to acclimatise them to the world of work and prepare them for future jobs.

### 2.2 Topics to be studied in Motor Mechanics include:

The table below indicates the main topics in the Motor Mechanics programme.

1	Workshop health and safety
2	Housekeeping
3	HIV/AIDS
4	Tools
5	Measuring instruments
6	Garage equipment
7	Fundamental engine technology
8	Automotive components

9	Automotive service
10	Inspection and lubrication
11	Basic auto electrical
12	Basic welding/joining of metals
13	Auto valet
14	Customer care
15	World of work/learner work experience programme
16	Driver training

### 2.3 Specific Aims:

In Motor Mechanics, learners will be able to:

- Understand health, cleaning and safety procedures as well as good housekeeping principles
- Understand and know how to deal with HIV/AIDS
- Understand and know how to deal with client services and customer care in the industry
- Manage resources and job planning
- Identify, use and care of basic hand tools
- Identify, use and care of specialist hand tools
- Identify, use and care of engineering measuring tools
- Identify, use and care of power tools
- Identify, use and care of vehicle lifting equipment
- Identify, use and care of a tyre changing and wheel balancing machine
- Test, charge/replace automotive batteries
- Explain fundamental engine technology
- Remove and fit automotive components
- Strip and assemble mechanical components
- Carry out an automotive service
- Carry out a vehicle inspection and lubrication
- Demonstrate basic welding to join metal
- Demonstrate basic use of the tap and die equipment
- Replace basic electrical components
- Work in an auto valet business
- Prepare for introduction to the world of work
- Prepare for learners licence and driver training

## 2.4 Requirements for Motor Mechanics as a subject

### 2.4.1 Time Allocation

The compulsory instructional time for the Vocational Learning Programme for learners experiencing severe intellectual disabilities amounts to 8 hours per 5-day cycle. Schools may offer either three (3) or four (4) vocational subjects, depending on the number of learners in the school and the resources available. The compulsory instructional time for Motor Mechanics is either

- 2 hours per 5-day cycle plus three (3) other vocational subjects or
- 2,5 hours per 5-day cycle plus two (2) other vocational subjects.

Twenty percent (20%) of the above mentioned time is utilized to teach subject content which should be embedded in teaching the learners to execute the skills. This implies that theoretical lessons should not be instructed in isolation, but during the teacher's demonstration before the learners practise the skills. The learner is required to utilize eighty percent (80%) of the time to practise the various skills in the classroom.

### 2.4.2 Resources

#### 2.4.2.1 Human resources

An appropriately qualified teacher registered with SACE in line with National Education Policy Act 27 of 1998 section 7.4.

#### 2.4.2.2 Uniforms

Learners should use a two piece overall and safety shoes.

#### 2.4.2.3 Books, magazines and teaching media

- Each learner should have a learner workbook for the subject
- The teacher should have:
  - Motor magazines
  - Motor Mechanics books
  - other books related to the skills being taught
  - access to you tube videos
  - cut-away models.

#### 2.4.2.4 Infrastructure and equipment

The subject may not be offered without the necessary infrastructure, tools and equipment.

##### Infrastructure

A double or one and a half size classroom or a fully fledged workshop. The height of the workshop should accommodate a fully extended 4 post hoist.

The workshop should contain the following furniture and equipment;

<ul style="list-style-type: none"><li>• 1 x teachers table and chair</li><li>• 4 x lockable cupboards</li><li>• 2 x 4/5 shelf open shelving</li><li>• 4 x workbenches</li><li>• 16 x bench vices (4 on each table)</li><li>• 2 x welding screen</li><li>• 1 x wash basin</li><li>• 2 x Plug points for two phase welding equipment</li><li>• 5 x two phase plug points.</li><li>• 2 x inverter welding machines</li><li>• 1 x wall mounted drill press</li><li>• 1 x bench grinder</li><li>• 1 x hydraulic press</li><li>• 2 x trolley jacks</li><li>• 1 x Tyre changing machine</li><li>• 1 x wheel balancing machine</li><li>• 1 x engine hoist</li><li>• 1 x 4 post hoist</li><li>• 1 x battery charger</li><li>• 1 x multi-meter</li><li>• 4 x hydrometer</li><li>• 4 x feeler gauges</li><li>• 4 x timing light</li><li>• 4 x mechanics creeper</li><li>• 1 x mechanics stethoscope</li><li>• 4 x digital vernier</li></ul>	<ul style="list-style-type: none"><li>• 1 x set steel chisels</li><li>• 4 x set star and flat screwdrivers</li><li>• 2 x stanley knife</li><li>• 4 x scrapers</li><li>• 2 x riveting gun</li><li>• 4 x G clamps</li><li>• 4 x vice grips</li><li>• 4 x water pump pliers</li><li>• 4 x long nose pliers</li><li>• 4 x combination pliers</li><li>• 4 x inside circlip pliers</li><li>• 4 x side cutters</li><li>• 2 x stilson wrench</li><li>• 4 x small adjustable wrench</li><li>• 4 x large adjustable wrench</li><li>• 4 x set combination spanners 6mm-32mm</li><li>• 1 x set open end spanners 6mm-32 mm</li><li>• 4 x complete socket set ( includes ratchet, power bar etc) 8mm -32 mm</li><li>• 4 x set metric allen keys</li><li>• 2 x scissors</li><li>• 15 x flat files</li><li>• 4 x round file</li><li>• 4 x triangular file</li><li>• 4 x half round file</li><li>• 4 x square file</li></ul>
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<ul style="list-style-type: none"> <li>• 4 x set microscope</li> <li>• 4 x straight edge</li> <li>• 4 x tap and die set</li> <li>• 4 x valve spring compressor</li> <li>• 4 x piston ring squeezer</li> <li>• 4 x engine bore honing tool</li> <li>• 1 x gear puller</li> <li>• 4 x prybars</li> <li>• 1 x 5 metre measuring tape</li> <li>• 2 x hand drill</li> <li>• 1 x angle grinder</li> <li>• 2 x electrical multi-tester</li> <li>• 1 x crimping tool</li> <li>• 1 x claw hammer</li> <li>• 8 x ball pein hammers 200g</li> <li>• 4 x club hammer</li> <li>• 4 x rubber mallet</li> <li>• 4 x gasket making hammers</li> <li>• 1 x set centre punches</li> <li>• 1 x set bell punches</li> </ul>	<ul style="list-style-type: none"> <li>• 15 x hacksaws</li> <li>• 2 x junior hacksaws</li> <li>• 2 x coping saw</li> <li>• 2 x steel dividers</li> <li>• 4 x set plug spanners</li> <li>• 4 x oil filter wrench</li> <li>• 4 x bottle jacks</li> <li>• 4 x wheel spanner</li> <li>• 2 x lead light</li> <li>• 2 x steel brush</li> <li>• 4 x automatic welding helmets</li> <li>• 1 x Set small gas bottles with attachments</li> <li>• 4 x tin snips</li> <li>• 1 x extension cord(10 metres)</li> <li>• 2 x steel rules</li> <li>• 2 x scriber</li> <li>• 2 x tyre pressure gauge</li> <li>• 4 x torque wrench</li> <li>• 2 x fire extinguishers</li> <li>• shadow boards to hang tools</li> </ul>
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Consumables are not included in list

The learners work in groups of 4.

#### 2.4.3 Finances

The subject may not be offered without the necessary finances provided by the school.

- An annual budget should be available to purchase consumables for weekly practical tasks.
- Maintenance and purchasing of new tools/equipment should be added to the budget

#### 2.4.4 Stock control

- The teacher is responsible for the stock and will keep the workshop and tools and equipment locked at all times when not present.
- Annual stock control is essential, a stock control book must be kept in the workshop and a summary stock sheet must be kept in the office.
- Tools and equipment must be checked daily.



- A shadow board for tools will ensure better tracking and control of tools.

## 2.5 Career opportunities

- Assistants to an artisan or semi skilled artisan.
- Work under supervision.
- Run a small business from home.
- Be employed under the 5 % disability job clause.
- Be sub contractors.
- Open or work in a car wash industry.
- Be employed in tyre fitment centres.

## 2.6 Multi levelled/differentiated teaching approach.

- Learners with severe intellectual disabilities range from low to high levels of cognition and achievement.
- This must not stop the teacher from realising the all learners are amazing and resilient and sometimes will surprise the most cynical teacher.
- Teachers should use the teaching tips/activities to structure a multi-levelled teaching approach.
- The teaching tips/activities can also be used to assist the teacher as guidelines for the lesson plans.
- Teachers should set high standards and encourage learners to maximize their potential.
- Teachers should be the light that will burn bright and ignite the potential in our learners with barriers to learning.

### 3 SECTION 3: OVERVIEW OF TOPICS PER TERM AND ANNUAL TEACHING PLANS

Each week has a compulsory contact time of 2 to 2, 5 hours (depending on the number of vocational subjects offered at school) for the subject Motor Mechanics.

#### 3.1 Content overview of theoretical topics

The content is embedded in the skills and the learners should execute the skills in a stimulated working environment re-created in the skills workshop. The table below indicates the topics and content in the Motor Mechanics learning programme in Grade 4 and 5.

	TOPICS	<b>Grade 4</b> The learner must be able to:	<b>Grade 5</b> The learner must be able to:
1	<b>Workshop health and safety</b>	<ul style="list-style-type: none"> <li>Identify and remove potential hazards.</li> <li>Understand the implications of exposure to hazardous substances and hazards.</li> <li>Implement health and safety plans.</li> <li>Comply with the use of protective clothing.</li> <li>Observe statutory requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Understand the implications of exposure to hazardous substances and hazards and the prevention of thereof.</li> <li>Implement health and safety plans.</li> <li>Identify, care and use of protective clothing.</li> <li>Implement statutory requirements.</li> <li>Identify the location of fire extinguishers hoses and alarms.</li> <li>Identify, care and use of fire extinguishers.</li> <li>Observe procedures for emergencies.</li> <li>Report accidents and injuries.</li> </ul>
2	<b>Good housekeeping</b>	<ul style="list-style-type: none"> <li>Practice cleanliness and care of equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Practice good housekeeping routines.</li> <li>Realise the impact of poor housekeeping routines.</li> </ul>

	TOPICS	<b>Grade 4</b> The learner must be able to:	<b>Grade 5</b> The learner must be able to:
	<b>practices</b>	<ul style="list-style-type: none"> <li>• Observe safe use of cleaning equipment and materials.</li> <li>• Report faulty equipment</li> <li>• Keep the workshop clean.</li> </ul> <ul style="list-style-type: none"> <li>• Practice relevant safety routines</li> <li>• Practice safe handling and use of tools and equipment.</li> <li>• Practice cleanliness and tidiness of workshop.</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out correct and safe use of cleaning equipment and materials.</li> <li>• Report faulty equipment</li> <li>• Ensure cleanliness of workstation and self.</li> <li>• Check equipment and tools for safe and effective</li> <li>• Check equipment for safe and effective</li> <li>• Set tools and equipment to specification.</li> <li>• Set tools and equipment in sequence.</li> <li>• Practice good housekeeping and the impact of poor housekeeping.</li> <li>• Observe organisational housekeeping policies and procedures.</li> <li>• Comply with housekeeping procedures and policies.</li> <li>• Identify and report shortcomings in housekeeping practices.</li> <li>• Comply with relevant safety routines.</li> <li>• Ensure that workstations conform to health and safety requirements.</li> <li>• Know how to isolate and replace faulty equipment.</li> <li>• Practice safe handling, use and care of tools and equipment.</li> <li>• Practice cleanliness and tidiness of workshop.</li> <li>• Store tools and equipment correctly after use.</li> </ul>

	TOPICS	Grade 4 The learner must be able to:	Grade 5 The learner must be able to:
			<ul style="list-style-type: none"> <li>Understand the responsibilities of employees with regard to good housekeeping in the workplace.</li> </ul>
3	<b>HIV/AIDS</b>	<ul style="list-style-type: none"> <li>Explain the transmission of HIV/AIDS.</li> <li>Take precautions to prevent the transmission of AIDS.</li> <li>Practice basic first aid.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the rights and responsibilities of employees in the workshop with regards to AIDS.</li> <li>Explain how to prevent the spread of AIDS.</li> </ul>
4	<b>Tools</b> <ul style="list-style-type: none"> <li><b>Basic hand tools</b></li> </ul>	<ul style="list-style-type: none"> <li>Identify, care and use of the following basic hand tools:               <ol style="list-style-type: none"> <li>combination spanners</li> <li>ring spanners</li> <li>open ended spanners</li> <li>wheel spanners</li> <li>shifting spanners</li> <li>socket spanner</li> <li>Stilson wrench</li> <li>sockets sets</li> <li>screwdrivers</li> <li>pliers,</li> <li>vice grips</li> <li>hammers</li> <li>hacksaws</li> <li>files</li> <li>chisels</li> <li>punches</li> <li>Allen keys</li> </ol> </li> </ul>	

	TOPICS	Grade 4 The learner must be able to:	Grade 5 The learner must be able to:
	<ul style="list-style-type: none"> <li><b>Specialist hand tools</b></li> <li><b>Power tools</b></li> </ul>	<ul style="list-style-type: none"> <li>Identify, care and use of:               <ol style="list-style-type: none"> <li>The torque wrench</li> <li>The piston ring compressor</li> <li>The piston ring spreader</li> <li>Taps and dies.</li> </ol> </li> <li>Identify, care and use of a:               <ol style="list-style-type: none"> <li>Hand drill</li> <li>Angle grinder</li> <li>Cut off saw</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Identify, care and use of the:               <ol style="list-style-type: none"> <li>Brake spring pliers</li> <li>Valve spring lifter</li> <li>Valve grinder</li> <li>Timing light</li> <li>Bearing puller</li> <li>Stud remover</li> <li>Piston ring groove cleaner</li> <li>Cylinder hone</li> </ol> </li> </ul>
5	<b>Measuring instruments</b>	<ul style="list-style-type: none"> <li>Identify, care and use of a:               <ol style="list-style-type: none"> <li>Measuring tape</li> <li>Steel rule</li> <li>Feeler gauge</li> <li>Straight edge</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Identify, care and use of a:               <ol style="list-style-type: none"> <li>Digital vernier calliper</li> <li>Digital micrometer</li> <li>The dial gauge.</li> </ol> </li> </ul>
6	<b>Garage Equipment</b>	<ul style="list-style-type: none"> <li>Identify, care and use of the :               <ol style="list-style-type: none"> <li>Drill press</li> <li>Bench grinder</li> <li>Lifting equipment</li> <li>Hydraulic press</li> <li>Arc welding machine</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Identify, care and use of the:               <ol style="list-style-type: none"> <li>Tyre changing machine</li> <li>Wheel balancing machine</li> <li>Battery charger</li> </ol> </li> </ul>

	TOPICS	<b>Grade 4</b> The learner must be able to:	<b>Grade 5</b> The learner must be able to:
		6. Gas welding equipment	
7	<b>Fundamental engine technology</b>	<ul style="list-style-type: none"> <li>Understand vehicle layout</li> <li>Discusses/understand the internal reciprocating engine</li> <li>Discusses petrol, diesel and alternative fuel vehicles.</li> <li>Discusses the four stroke cycle</li> <li>Discusses the two stroke cycle</li> </ul>	<ul style="list-style-type: none"> <li>Discusses the fuel system</li> <li>Discuss the ignition system</li> <li>Discuss cooling and lubrication of an engine</li> <li>Discuss the clutch</li> <li>Discuss the gearbox</li> <li>Discuss the transmission system</li> <li>Discuss the braking system</li> <li>Discuss wheels and tyres</li> <li>Discuss the suspension system</li> <li>Discuss the steering system</li> <li>Discuss the electrical system</li> <li>Discuss the exhaust system</li> </ul>
8	<b>Automotive components</b>	<ul style="list-style-type: none"> <li>Identify, remove and refit a wheel.</li> <li>Identify, remove and refit the following engine components: <ol style="list-style-type: none"> <li>Tappet cover</li> <li>Engine sump</li> <li>Cylinder head</li> <li>Inlet manifold</li> <li>Exhaust manifold</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Identify, remove and refit an engine.</li> <li>Identify, remove and refit the following engine components: <ol style="list-style-type: none"> <li>Tappet cover</li> <li>Engine sump</li> <li>Cylinder head</li> <li>Flywheel</li> <li>Front pulley</li> <li>Timing belt/chain/gear</li> <li>Water pump</li> </ol> </li> </ul>

	TOPICS	<b>Grade 4</b> The learner must be able to:	<b>Grade 5</b> The learner must be able to:
		<ul style="list-style-type: none"> <li>Identify, remove and refit the propeller shaft Identify, remove and refit the gearbox.</li> <li>Identify, remove and refit the clutch and pressure plate.</li> <li>Identify, remove, refit and adjust the clutch cable.</li> </ul>	8. Piston 9. Crankshaft 10. Piston rings 11. Camshaft 12. Fuel pump 13. Oil pump 14. Welsh plugs 15. Valve <ul style="list-style-type: none"> <li>Identify, remove, grind and refit valves in the cylinder head.</li> <li>Hone a engine cylinder bore</li> <li>Identify, remove and refit the radiator.</li> <li>Identify, remove and refit the brake disc pads.</li> <li>Identify, remove and refit rear brake shoes.</li> <li>Identify, remove and refit the brake slave cylinder.</li> <li>Identify, remove and refit the rubber seals from the piston in a brake slave cylinder as well as hone the slave cylinder.</li> <li>Identify, remove and refit the ball joints in a tie/track rod.</li> <li>Identify, remove and refit a Mac Pherson or similar strut.</li> <li>Identify, remove and refit a C.V. joint or a prop shaft.</li> <li>Identify, remove and replace a shock absorber.</li> <li>Identify, remove and replace the front hub and bearings.</li> <li>Identify, remove and replace silencer box.</li> </ul>

	TOPICS	<b>Grade 4</b> The learner must be able to:	<b>Grade 5</b> The learner must be able to:
9	<b>Automotive service</b>	<ul style="list-style-type: none"> <li>State what a basic or minor service is.</li> <li>Plan and prepare for a minor service.</li> <li>Carry out a minor service as follows: <ol style="list-style-type: none"> <li>1. Replace engine oil and engine oil filter.</li> <li>2. Check/replace air filter</li> <li>3. Gap/replace spark plugs.</li> <li>4. Gap/replace points.</li> <li>5. Replace condenser</li> <li>6. Check/top up all fluid levels</li> <li>7. Carry out further checks as per check sheet.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>State what a major service is.</li> <li>Plan and prepare for a major service.</li> <li>Carry out the major service as follows: <ol style="list-style-type: none"> <li>1. Replace engine oil and engine oil filter.</li> <li>2. Replace air filter.</li> <li>3. Replace fuel filters.</li> <li>4. Replace/gap spark plugs.</li> <li>5. Replace condenser.</li> <li>6. Drain coolant, fill antifreeze and water as per requirements.</li> <li>7. Replace gear box oil.</li> <li>8. Replace diff oil.</li> <li>9. Change filter in an automatic gearbox.</li> <li>10. Check/adjust clutch cable.</li> <li>11. Check/replace brake disc pads and brake shoes.</li> <li>12. Adjust handbrakes.</li> <li>13. Check/replace timing belt.</li> <li>14. Check/replace/adjust fan belt.</li> <li>15. Check/replace suspension bushes.</li> <li>16. Check/replace wiper blades.</li> <li>17. Check/adjust tappets.</li> <li>18. Check/adjust engine timing.</li> <li>19. Check tyre pressure and thread depth.</li> <li>20. Check/repair water leaks.</li> </ol> </li> </ul>



	TOPICS	Grade 4 The learner must be able to:	Grade 5 The learner must be able to:
			21. Check/repair oil leaks. 22. Check/tighten loose nuts and bolts. 23. Carry out further checks as per check sheet.
10	<b>Inspection and lubrication</b>	<ul style="list-style-type: none"> <li>Top up all oils and coolant levels</li> </ul>	<ul style="list-style-type: none"> <li>Grease all grease nipples.</li> </ul>
11	<b>Basic auto electrical.</b> <b>The main electrical components.</b> <b>The battery.</b>  <b>Testing and renewal of globes.</b>  <b>The multi-meter.</b>	<ul style="list-style-type: none"> <li>Observe safety practices and protocols when working on the auto electrical system and the battery.</li> <li>State the reasons for the auto electrical system.</li> <li>State the purpose of the main electrical components as follows:               <ol style="list-style-type: none"> <li>The battery</li> <li>The fuse box</li> <li>The wiring system</li> <li>The starter</li> <li>The alternator</li> <li>The distributor</li> <li>The coil</li> <li>The ignition system</li> <li>The wipers</li> </ol> </li> <li>State the purpose and types of battery.</li> <li>Use a hydrometer to test the battery.</li> <li>Make an electrolyte mix for the battery.</li> </ul>	<ul style="list-style-type: none"> <li>Observe safety practices and protocols when working on the auto electrical systems</li> <li>Remove and replace a battery.</li> <li>Replace blown fuses.</li> <li>Use a strip connector.</li> <li>Remove and replace a starter.</li> <li>Replace brushes on a starter.</li> <li>Remove and replace an alternator.</li> <li>Remove and replace a distributor.</li> <li>Remove and replace a coil.</li> <li>Replace wiper blades.</li> <li>Charge the battery</li> <li>Test and replace globes.</li> </ul>

	TOPICS	<b>Grade 4</b> The learner must be able to:	<b>Grade 5</b> The learner must be able to:
		<ul style="list-style-type: none"> <li>Replace globes.</li> </ul>	<ul style="list-style-type: none"> <li>Use a multi-meter for basic checks</li> <li>Check/replace/adjust a fan belt.</li> </ul>
12	<b>Basic welding/joining of metals/basic hand skills</b>	<ul style="list-style-type: none"> <li>State the different methods of joining metal.</li> <li>Identify different types of metal.</li> <li>Observe safety rules when using welding equipment.</li> <li>Identify, care and use of Arc welding equipment</li> <li>Identify care and use of gas welding equipment.</li> <li>File a round bar to a square bar.</li> <li>Use cross filing and draw filing techniques</li> </ul>	<ul style="list-style-type: none"> <li>Understand safety precautions when welding.</li> <li>State protective accessories when welding.</li> <li>Demonstrate how to carry out basic arc welds.</li> <li>Demonstrate how to carry out basic welding and brazing techniques.</li> <li>Demonstrate drilling procedures.</li> <li>Demonstrate the use of a soldering iron and soldering techniques.</li> <li>Demonstrate the use of a riveting gun.</li> <li>Use adhesive to join an article.</li> <li>Demonstrate how to cut metal using a hacksaw</li> <li>Demonstrate how to cut metal using a cut off saw</li> <li>Use bolts to join components together.</li> <li>Use a tap and die to cut threads</li> <li>Use a thread file to clean threads on a bolt.</li> </ul>
13	<b>Auto valet</b>	<ul style="list-style-type: none"> <li>Understand the reasons for washing a vehicle.</li> <li>Know how to wash a vehicle with detergents.</li> <li>Vacuum a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>Polish a vehicle.</li> <li>Clean mag rims.</li> <li>Polish a car tyre.</li> <li>Wash the engine compartment.</li> </ul>
14	<b>Customer care</b>		<ul style="list-style-type: none"> <li>Practise reception of the customer</li> <li>Practise courtesy to the customer</li> </ul>

	TOPICS	Grade 4 The learner must be able to:	Grade 5 The learner must be able to:
			<ul style="list-style-type: none"> <li>• Practise after service care</li> </ul>
15	<b>World of work/learner work experience programme</b>	<ul style="list-style-type: none"> <li>• Practice good work habits- personal presentation.</li> <li>• Practice good work habits-social presentation.</li> <li>• State the various types of jobs available.</li> <li>• State the basic requirements for different types of jobs.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare for a job interview.</li> <li>• Work with competence.</li> <li>• Show good work tolerance.</li> <li>• Practice appropriate social skills training.</li> <li>• Identify and understand the opportunities in the open labour market.</li> <li>• Perform personal management/activities for daily living.</li> <li>• Participate in the learner work experience programme (LWEP).</li> <li>• Understand benefits and conditions for the worker in the world of work.</li> <li>• Identify the criteria for the learner work experience programme.</li> </ul>
16	<b>Driver training</b>	<ul style="list-style-type: none"> <li>• Understand the need for a learner's and drivers licence.</li> <li>• Know the age to book for a learner's test.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to book for the learner's test.</li> <li>• Know what to expect for a learner's test.</li> <li>• Know what to take when booking for a learner's test.</li> <li>• Know what disqualifies a person from obtaining a learner's licence.</li> <li>• Know what a learner's licence allow a person to do.</li> <li>• Learn the K53 rules of the road and road signs.</li> </ul>

### 3.2 Teaching plans

Each term comprises of ten weeks and a minimum of 9 practical sessions is compulsory. The sequence within the term is not compulsory and the teacher may cover the learning content and skills in any appropriate sequence. Learners are two years in Grade 4 and more advanced skills are instructed during the second year in grade 4.

#### 3.2.1 Grade 4 : Term 1.

Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
1	<b>Workshop health and safety</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"><li>• Understand the subject name and field</li><li>• Identify and remove potential hazards.</li><li>• Understand the implications of exposure to hazardous substances.</li><li>• Identify protective clothing.</li></ul>	<b>Grade 4 1<sup>st</sup> year</b> The teacher : <ul style="list-style-type: none"><li>• Discusses the benefit of the subject to the learner</li><li>• Discusses the expectations of the teacher and learner</li><li>• Points out safety hazards</li></ul> The learners complete the following activities: <ul style="list-style-type: none"><li>• Dress in protective clothing</li><li>• Clean the workshop</li><li>• Comply with the rules of the workshop.</li><li>• Identify and remove potential hazards.</li></ul>

Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	<b>Good housekeeping practices</b>	<b>Grade 4 2<sup>nd</sup> year</b> <ul style="list-style-type: none"> <li>Practice safe handling and use of tools and equipment.</li> <li>Practice cleanliness and tidiness of workshop.</li> </ul>	<b>Grade 4 2<sup>nd</sup> year</b> The teacher: <ul style="list-style-type: none"> <li>Discusses hazards, safety routines, cleanliness, tidiness etc. with the learners.</li> <li>Shows relevant movies, slides, magazines, books, worksheets and poster to learners.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Handle and care for tools and equipment safely.</li> <li>Participate in cleaning activities within the workshop and practices what the teacher has discussed.</li> </ul>
2	<b>Basic hand tools</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use the following basic hand tools: Combination spanners Ring spanners Open ended spanners</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrate the different types and makes of combination spanners, ring spanners and open ended spanners.</li> <li>Discusses the materials that spanners are made from.</li> <li>Discusses the imperial and metric spanners.</li> <li>Discusses and demonstrate the use and care of the spanners.</li> <li>Discusses the incorrect use and damage to spanners.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Name the different types, makes and sizes of spanners.</li> <li>State the difference and similarity between metric and imperial spanners.</li> <li>Use the different types of spanners.</li> <li>Take care of the spanners.</li> </ul>

Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Power tools	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of a : Hand drill</li> </ul>	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of the hand drill.</li> <li>Discusses and demonstrates the care and use of the hand drill.</li> <li>Discusses the hammer function in the drill.</li> <li>Discusses proper positioning of the drill bit.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Participate in the discussion.</li> <li>State the purpose of the drill.</li> <li>Switch the drill on and off.</li> <li>Fit a drill bit to the chuck.</li> <li>Drill a hole using the drill.</li> <li>Use the hammer function in the drill.</li> <li>Remove the drill bit from the drill and cleans and puts drill away.</li> </ul>
3	Basic hand tools	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the following basic hand tools: Wheel spanners Shifting spanners Socket spanners Stilson wrench</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the wheel spanner, shifting spanner, socket spanners and stilson wrench.</li> <li>Discusses and demonstrates the care and use of each tool.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify each tool by name.</li> <li>State the purpose of each tool.</li> <li>Demonstrate use and care of each tool.</li> </ul>

Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	<b>Power tools</b>	<b>Grade 4 2<sup>nd</sup> year.</b> Identify, care and use of a : Angle grinder	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>• Discusses and demonstrates the care and use of the angle grinder.</li> <li>• Discusses and demonstrates the safety aspects when using the angle grinder.</li> <li>• Discusses and demonstrates how to replace the disc on the angle grinder.</li> <li>• Discusses the steel cutting and grinding disc.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>• Identify the angle grinder.</li> <li>• State and complies with safety precautions when using the angle grinder.</li> <li>• Switch the angle grinder on and off.</li> <li>• Change the disc on the angle grinder.</li> <li>• Cut steel with the angle grinder.</li> <li>• Grind steel with the angle grinder.</li> <li>• Clean and store the angle grinder.</li> </ul>
4	<b>Basic hand tools</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>• Identify, care and use the following basic hand tools:                Socket sets                Screwdrivers                Pliers             </li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>• Discusses and demonstrates the care and use of the socket set, screwdrivers, pliers and vice grips.</li> <li>• Discusses and demonstrates when and why we use the power bar and ratchet.</li> </ul>

Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Power tools	<p>Vice grips</p> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of a: Cut off saw</li> </ul>	<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the names of the tools.</li> <li>State the correct use of the power bar and ratchet.</li> <li>Demonstrate the correct use of the power bar and the ratchet.</li> <li>Demonstrate the use and care of each tool.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates the care and use of the cut off saw.</li> <li>Discusses safety aspects when using the cut off saw.</li> <li>Discusses and demonstrates how and why to change the disc.</li> <li>Discusses and demonstrates how to carry out a straight and mitre cut with the cut off saw.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the cut off saw.</li> <li>Practice safety aspects when using the cut off saw.</li> <li>Switch the cut off saw on and off.</li> <li>Change the disc on the cut off saw.</li> <li>Carry out a straight cut on the cut off saw.</li> <li>Clean and store the cut off saw away.</li> </ul>
5	Basic hand tools	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use the following basic hand tools:</li> </ul>	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates the care and use of the hammer and</li> </ul>



Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Garage equipment	<p>Hammers</p> <p>Hacksaws</p> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of a: Drill press</li> </ul>	<p>hacksaw.</p> <ul style="list-style-type: none"> <li>Discusses the different types of hammers.</li> <li>Discusses the uses of different types of hammers.</li> <li>Demonstrates how to change a blade on a hacksaw.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the different hammers and the hacksaws.</li> <li>Practice safety aspects when using the tools.</li> <li>Use the different types of hammers.</li> <li>Use a hacksaw.</li> <li>Replace the blade in the hacksaw.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates the care and use of the drill press.</li> <li>Discusses how to adjust the height of the working surface of the drill press.</li> <li>Discusses drill speeds and need for a coolant.</li> <li>Demonstrates how to adjust the work surface of the drill press.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the drill press.</li> <li>Practice safety when using the drill press.</li> <li>Switch the drill press on and off.</li> <li>Fit and remove a drill bit to the chuck.</li> <li>Adjust the working surface of the drill press.</li> </ul>









Grade 4 : Term 1			
Wk	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			<ul style="list-style-type: none"> <li>• Use the hydraulic press.</li> </ul>

10	<b>Assessment</b>	
	Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.	
	<b>Grade 4 1st year</b>	<b>Grade 4 2<sup>nd</sup> year</b>
	<ul style="list-style-type: none"> <li>Use a ring spanner.</li> <li>Use a combination spanner</li> </ul>	<ul style="list-style-type: none"> <li>Switch a hand drill on and off.</li> <li>Fit and remove a drill bit to the drill chuck</li> </ul>
	<ul style="list-style-type: none"> <li>Use a wheel spanner.</li> <li>Use a shifting spanner.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the angle grinder on and off.</li> <li>Grind a piece of metal.</li> </ul>
	<ul style="list-style-type: none"> <li>Use a ratchet.</li> <li>Use a flat and star screwdriver.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the cut off saw on and off.</li> <li>Carry out a straight cut with a cut off saw</li> </ul>
	<ul style="list-style-type: none"> <li>Use a hammer.</li> <li>Cut with a cut off saw.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the drill press on and off.</li> <li>Drill a hole.</li> </ul>
	<ul style="list-style-type: none"> <li>Use a file.</li> <li>Clean a file with a file brush.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the bench grinder on and off.</li> <li>Grind a piece of metal</li> </ul>
	<ul style="list-style-type: none"> <li>Use a chisel</li> <li>Use a punch.</li> </ul>	<ul style="list-style-type: none"> <li>Use a jack to jack up a vehicle.</li> <li>Use an axle stand.</li> </ul>
	<ul style="list-style-type: none"> <li>Set up a torque wrench.</li> <li>Use a torque wrench</li> </ul>	<ul style="list-style-type: none"> <li>Operate an engine hoist to lift an engine.</li> <li>Operate a four post hoist.</li> </ul>
	<ul style="list-style-type: none"> <li>Set the rings in a piston.</li> <li>Compress the rings in a piston using a piston ring compressor,</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the working surface of a hydraulic</li> <li>Operate a hydraulic press.</li> </ul>
	Theoretical assessment: Term 1.	
	Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported. The following serves as suggestions of theoretical activities to report on.	
	<b>Grade 4 1st year</b>	<b>Grade 4 2<sup>nd</sup> year</b>
	<ul style="list-style-type: none"> <li>State the purpose of a spanner.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a hand drill.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a shifting spanner (adjustable wrench)</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the angle grinder.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a screwdriver.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the cut off saw.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a hacksaw.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a drill press.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a file.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a bench grinder.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a chisel.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a jack.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a torque wrench.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of an engine hoist.</li> </ul>
	<ul style="list-style-type: none"> <li>State the purpose of a piston ring compressor.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the hydraulic press.</li> </ul>

### 3.2.2 Grade 4 : 1st year and 2nd year . Term 2

Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
1	<b>Good housekeeping practices</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Implement health and safety plans.</li> <li>Comply with the use of protective clothing.</li> <li>Observe statutory requirements.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses how to implement health and safety plans.</li> <li>Discusses the use of protective clothing.</li> <li>Discusses how to observe statutory requirements.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State how to implement health and safety plans.</li> <li>Use protective clothing.</li> <li>Observe statutory requirements.</li> </ul>
	<b>HIV/AIDS</b>	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Explain the transmission of AIDS.</li> <li>Take precautions to prevention of AIDS.</li> <li>Practice first aid.</li> </ul>	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher : <ul style="list-style-type: none"> <li>Discusses AIDS and how it is transmitted.</li> <li>Discusses how to take precautions against AIDS.</li> <li>Discusses and demonstrates how to practice first aid.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State what AIDS is and how it is transmitted.</li> <li>State how to take precautions against AIDS.</li> <li>Practice first aid.</li> </ul>



Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
2	<b>Specialist hand tools</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of: The piston ring spreader.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrate the care and use of a piston ring squeezer.</li> </ul> The learners complete the following tasks: <ul style="list-style-type: none"> <li>Identify the piston ring squeezer.</li> <li>State the use of the piston ring squeezer.</li> <li>Set the rings in the piston.</li> <li>Use the piston ring compressor to squeeze the rings in the piston.</li> </ul>
	<b>Basic welding</b>	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of a : Arc welding machine</li> </ul>	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to care and use the arc welding machine.</li> <li>Discusses the parts of the machine.</li> <li>Demonstrates how to use an arc welding helmet.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the arc welding machine, the welding helmet and the parts of the machine.</li> <li>State how to use and care for the machine.</li> <li>State safety precautions observed when using the machine.</li> <li>Observe safety precautions.</li> <li>Connect the machine.</li> <li>Switch the machine on and off.</li> </ul>







Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Gas welding equipment	<p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses and demonstrates how to care and use gas welding equipment.</li> <li>• Discusses safety when using gas welding equipment.</li> <li>• Discusses the importance of the flame arrestor valve.</li> <li>• Discusses and demonstrates how to use and adjust gas welding goggles.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• State the safety precautions when using gas welding equipment.</li> <li>• Identify gas welding equipment, goggles and valves.</li> <li>• Connect up the regulating valves in the gas welding equipment.</li> <li>• Connect up the flame arrestor valve.</li> <li>• Connect the pipes in the gas welding equipment.</li> <li>• Adjust regulator valves.</li> <li>• Use and adjust a gas welding goggle.</li> </ul>
6	Fundamental engine technology	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>• Understand vehicle layout</li> </ul>	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses the engine locations in different types of vehicles.</li> <li>• Discusses the layout on a front engine, front wheel drive.</li> <li>• Discusses the layout on a front engine, rear wheel drive.</li> <li>• Discusses the layout on the rear engine, rear wheel drive.</li> <li>• Discusses the layout on the mid engine, rear wheel drive.</li> </ul>

Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Basic welding	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of: Gas welding equipment</li> </ul>	<ul style="list-style-type: none"> <li>Draws sketches of the different engine layout</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Participate in the lesson.</li> <li>State the different types of engine layouts.</li> <li>State the types of vehicles with the different engine layouts and reasons thereof.</li> <li>Draw sketches of the different types of engine layouts.</li> <li>Make a mini model of a vehicle with wheels and engine layout.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety procedures when working with gas welding equipment.</li> <li>Discusses and demonstrates how to connect up the gas welding equipment, regulator valves, flame arrestor valve and pipes.</li> <li>Discusses the purpose of welding.</li> <li>Discusses the purpose of the welding nozzle.</li> <li>Demonstrates how to use and adjust gas welding goggles.</li> <li>Demonstrates how to light up the welding nozzle.</li> <li>Discusses and demonstrate how to shut off a welding nozzle and clean out the nozzle.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the gas welding equipment, gas welding goggles and the welding nozzle.</li> </ul>

Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			<ul style="list-style-type: none"> <li>State safety precautions to be observed when using gas welding equipment.</li> <li>Connect up the gas welding equipment, regulator valves, flame arrestor valve and pipes.</li> <li>Connect up and disconnect the welding nozzle.</li> <li>Adjust the regulator valve.</li> <li>Light up and adjust the welding nozzle.</li> <li>Switch the equipment off and clean out the nozzle.</li> </ul>
7	<b>Fundamental engine technology</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Understand the internal reciprocating engine.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the reason for the name reciprocating engines.</li> <li>Discusses the main differences between petrol and diesel engines.</li> <li>Discusses the main components of the reciprocating engine.</li> <li>Discusses the cylinder, the piston, the connecting rod and the crankshaft.</li> <li>Discusses engine size.</li> <li>Demonstrates how the engine works with a model.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State the reason why the name is given to the engine.</li> <li>State the main parts of the reciprocating engine.</li> <li>State the function of each part.</li> <li>Engage in the demonstration model.</li> <li>Draw sketches of the different components of the reciprocating engine.</li> </ul>

Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Basic welding	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of: Gas welding equipment.</li> </ul>	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses safety precautions when working with gas welding equipment.</li> <li>Discusses and demonstrates how to connect up the gas welding equipment, regulator valves, flame arrestor valves, pipes.</li> <li>Discusses and demonstrates how to connect, disconnect and clean the brazing nozzle.</li> <li>Discusses the reason for brazing.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State the safety precautions when using gas welding equipment.</li> <li>Identify the gas welding equipment, the regulating valve, the flame arrestor valve, the brazing goggles and the brazing nozzle.</li> <li>Set up the gas welding equipment, the regulating valve, the flame arrestor valve and pipes.</li> <li>Connect up the brazing nozzle.</li> <li>Adjust the regulator valve.</li> <li>Light up the brazing nozzle.</li> <li>Switch off the equipment and cleans the brazing nozzle.</li> </ul>
8	Fundamental engine technology	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Discuss petrol, diesel and alternative fuel vehicles.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses petrol and diesel fuels in engines.</li> <li>Discusses vehicles using liquid petroleum gas (LPG).</li> </ul>



Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive components	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, remove and refit a wheel.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses hybrid vehicles with petrol engines and electric motor.</li> <li>Discusses fuel cell vehicles.</li> <li>Discusses safety precautions when dealing with different engines and/or motors.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the different types of fuel vehicles.</li> <li>Draw pictures of vehicles using the different types of engines.</li> <li>Compile a collage of pictures of different types of fuel vehicles.</li> <li>Inspect vehicles with different types of fuel vehicles.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year:</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the safety precaution observed when removing and refitting a wheel on a vehicle.</li> <li>Discusses jacking points in a vehicle.</li> <li>Discusses how to use axle stands before removing the wheel.</li> <li>Discusses and demonstrates how to chock up a vehicle.</li> <li>Discusses and demonstrates how to loosen wheel nuts.</li> <li>Discusses and demonstrates how to jack up a vehicle.</li> <li>Discusses and demonstrates how to remove the wheel nuts and remove the wheel.</li> <li>Discusses and demonstrates how to refit the wheel and wheel nuts.</li> <li>Discusses and demonstrates how to jack down the vehicle and torque the wheel nuts.</li> </ul>

Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• State the safety precaution observed when removing and refitting a wheel.</li> <li>• Identify the wheel, jacking points, the jack, chocks, wheel spanner and axle stands.</li> <li>• Chock up a vehicle.</li> <li>• Loosen the wheel nuts.</li> <li>• Jack up a vehicle.</li> <li>• Support vehicle with an axle stand.</li> <li>• Remove wheel nuts and wheel.</li> <li>• Refit the wheel and wheel nuts.</li> <li>• Jack the wheel down and torques the wheel nuts.</li> </ul>
9	<b>Fundamental engine technology</b>	<p><b>Grade 4 1<sup>st</sup> year</b></p> <ul style="list-style-type: none"> <li>• Discuss and understand the four stroke cycle</li> </ul>	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses the four stroke cycle.</li> <li>• Discusses and demonstrates the different strokes on a cutaway model engine.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Identify the piston, crankshaft, valves and spark plug.</li> <li>• Turn the engine to each stroke and explain what is happening at each stroke.</li> <li>• Explain through demonstration on the cutaway model of the engine what happens in the induction/intake, compression, power, exhaust stroke of</li> </ul>

Grade 4 : Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive components	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit a propeller shaft.</li> </ul>	<p>the engine.</p> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrate how to remove and refit a propeller shaft.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the propeller shaft.</li> <li>State safety precautions when removing and refitting a propeller shaft.</li> <li>Remove and refit a propeller shaft.</li> </ul>

**Assessments: Term 2.**

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

	<b>Grade 4 1<sup>st</sup> year</b>	<b>Grade 4 2<sup>nd</sup> year.</b>
Week 2	<ul style="list-style-type: none"> <li>Set rings on a piston</li> <li>Use a ring squeezer.</li> </ul>	<ul style="list-style-type: none"> <li>Set up an arc welding machine.</li> <li>Switch the arc welding machine on.</li> </ul>
Week 3	<ul style="list-style-type: none"> <li>Use a tap to cut/clean threads.</li> <li>Use a die to cut/clean threads.</li> </ul>	<ul style="list-style-type: none"> <li>Set amperage on an arc welding machine.</li> <li>Strike an arc.</li> </ul>
Week 4	<ul style="list-style-type: none"> <li>Use a measuring tape.</li> <li>Use a steel ruler.</li> </ul>	<ul style="list-style-type: none"> <li>.Strike a long weld.</li> <li>Weld two plates.</li> </ul>
Week 5	<ul style="list-style-type: none"> <li>Use a feeler gauge.</li> <li>Use a straight edge.</li> </ul>	<ul style="list-style-type: none"> <li>Connect the regulating valves in the gas welding equipment.</li> <li>Connect up the flame arrestor valve.</li> </ul>
Week 6	<ul style="list-style-type: none"> <li>Draw a sketch of a typical engine layout.</li> <li>Make a mini model vehicle with an engine.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the regulator valves.</li> <li>Light up the welding nozzles.</li> </ul>
Week 7	<ul style="list-style-type: none"> <li>Name the main engine components in the engine model.</li> <li>Draw a sketch of the engine with a connecting rod.</li> </ul>	<ul style="list-style-type: none"> <li>Connect the brazing nozzle.</li> <li>Light up the brazing nozzle.</li> </ul>
Week 8	<ul style="list-style-type: none"> <li>Compile a collage of pictures of different types of vehicles.</li> <li>Draw a vehicle with a petrol powered engine and a vehicle with a battery powered motor.</li> </ul>	<ul style="list-style-type: none"> <li>Jack up a vehicle.</li> <li>Remove and refit a tyre.</li> </ul>
Week 9	<ul style="list-style-type: none"> <li>Turn engine to induction stroke and explain the induction process practically.</li> <li>Turn the engine to the compression stroke and explain the compression stroke practically.</li> </ul>	<ul style="list-style-type: none"> <li>.Remove the propeller shaft.</li> <li>Refit the propeller shaft.</li> </ul>

**Theoretical assessment: Term 2.**

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week	Grade 4 1 <sup>st</sup> year	Grade 4 2 <sup>nd</sup> year.
Week 2	<ul style="list-style-type: none"><li>State the purpose of the piston ring squeezer.</li></ul>	<ul style="list-style-type: none"><li>State the purpose of the arc welding machine.</li></ul>
Week 3	<ul style="list-style-type: none"><li>State the purpose of taps and dies.</li></ul>	<ul style="list-style-type: none"><li>State safety precautions observed when using the arc welding machine.</li></ul>
Week 4	<ul style="list-style-type: none"><li>State the purpose of the measuring tape.</li></ul>	<ul style="list-style-type: none"><li>State the reasons for welding.</li></ul>
Week 5	<ul style="list-style-type: none"><li>State the purpose of the feeler gauge.</li></ul>	<ul style="list-style-type: none"><li>State the purpose of gas welding equipment.</li></ul>
Week 6	<ul style="list-style-type: none"><li>State the reasons for different engine layouts.</li></ul>	<ul style="list-style-type: none"><li>State the reasons for gas welding.</li></ul>
Week 7	<ul style="list-style-type: none"><li>State the main difference between petrol and diesel engines.</li></ul>	<ul style="list-style-type: none"><li>State the reasons for brazing.</li></ul>
Week 8	<ul style="list-style-type: none"><li>State the reasons for battery powered vehicles.</li></ul>	<ul style="list-style-type: none"><li>State the reasons for chocking wheels on a vehicle when jacking a vehicle.</li></ul>
Week 9	<ul style="list-style-type: none"><li>Name the 4 cycles in the 4 stroke cycle.</li></ul>	<ul style="list-style-type: none"><li>State the purpose of a propeller shaft.</li></ul>

### 3.2.3 Grade 4 : 1st year and 2nd year . Term 3.

Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
1	<b>Good housekeeping practices.</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Practice cleanliness and care of equipment.</li> <li>Observe correct use of cleaning equipment and materials.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to clean and keep a workshop tidy.</li> <li>Discusses and demonstrates the correct use of cleaning equipment and materials.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Practice cleanliness of the workshop by sweeping, washing and setting the workshop. Learners are divided into different groups to achieve this.</li> </ul>
	<b>World of work/ learner work experience programme.</b>	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Practice good work habits-personal presentation.</li> <li>Practice good work habits-social presentation.</li> <li>State the various types of jobs available.</li> <li>State the basic requirements for different types of jobs.</li> </ul>	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses how to practice good work habits.</li> <li>Discusses the various types of jobs available.</li> <li>Discusses the basic requirements for different types of jobs.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Role play good work habits.</li> <li>State the good work habits.</li> </ul>



Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
			<ul style="list-style-type: none"> <li>• Discusses the purpose of the gearbox.</li> <li>• Discusses the different types of gearboxes.</li> <li>• Discusses the reasons for removing the gearbox.</li> <li>• Discusses and demonstrates how to remove the gearbox.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Identify the different gearboxes.</li> <li>• State the purpose of the gearbox.</li> <li>• State reasons for removing the gearbox.</li> <li>• State safety precautions to be observed when removing a gearbox.</li> <li>• Support gearbox before removing.</li> <li>• Remove gearbox.</li> </ul>
3	<b>Fundamental engine technology</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>• Identify, remove and refit the following engine components: Tappet cover Engine sump</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses the reasons for a tappet cover and tappet cover gasket.</li> <li>• Discusses the reason for a sump and sump gasket.</li> <li>• Discusses and demonstrates how to remove and refit the tappet cover.</li> <li>• Discusses and demonstrates how to drain the engine oil.</li> <li>• Discusses and demonstrates how to remove and refit the engine sump.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Identify and state the purpose of the tappet cover.</li> <li>• Identify and state the purpose of the engine sump.</li> </ul>



Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
	Automotive components	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Align and refit a gearbox.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and state the purpose of gaskets.</li> <li>Remove and refit the tappet cover.</li> <li>Drain the engine oil.</li> <li>Remove and refit the engine sump.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions observed when refitting the gearbox.</li> <li>Discusses how to align the gearbox to the clutch and pressure plate.</li> <li>Discusses and demonstrates how to refit the gearbox.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the safety precautions observed when refitting a gearbox.</li> <li>Align the gearbox to the clutch and pressure plate.</li> <li>Refit the gearbox.</li> <li>Fit and secures the gearbox mountings.</li> </ul>
4	Automotive components	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine component: Cylinder head</li> </ul>	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the cylinder head.</li> <li>Discusses and demonstrates how to remove the cylinder head.</li> <li>Discusses and demonstrates how to fit a new cylinder head gasket.</li> <li>Discusses and demonstrates how to fit the cylinder head.</li> <li>Discusses and demonstrates how to torque the cylinder head.</li> </ul>

Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
	Automotive components	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>Identify and remove the clutch and pressure plate.</p>	<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify and states the purpose of the cylinder and cylinder head gasket.</li> <li>Remove the cylinder head.</li> <li>Replace the cylinder head gasket.</li> <li>Refit the cylinder head.</li> <li>Torque the cylinder head.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year:</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the clutch and pressure plate.</li> <li>Discusses the purpose of the release bearing.</li> <li>Demonstrates how to remove the clutch and pressure plate.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the clutch and pressure plate.</li> <li>Remove the clutch and pressure plate.</li> </ul>
5	Automotive components	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine components: Inlet manifold Exhaust manifold</li> </ul>	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the inlet and exhaust manifold.</li> <li>Discusses and demonstrates how to remove and refit the inlet and exhaust manifold.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the purpose of the inlet and exhaust manifold.</li> </ul>

Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
	<b>Automotive components</b>	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Align and re-assemble the clutch and pressure plate</li> </ul>	<ul style="list-style-type: none"> <li>Remove and refit the inlet and exhaust manifold.</li> </ul> <b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to align and secure the clutch and pressure plate.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Align the clutch and pressure plate.</li> <li>Secure the clutch and pressure plate.</li> </ul>
6	<b>Automotive service</b>	<b>Grade 4 1<sup>st</sup> year</b> <ul style="list-style-type: none"> <li>State what a basic or minor service is.</li> <li>Plan and prepare for a minor service.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses what a basic service on a vehicle is.</li> <li>Explains the difference between a minor and major service.</li> <li>Discusses how to use a job card to carry out a minor service.</li> <li>Discusses how to plan to carry out a minor service.</li> <li>Discusses and demonstrates how to order parts for a minor service.</li> <li>Discusses and demonstrates how to fit covers inside and outside the vehicle.</li> <li>Discusses and demonstrates how to position containers to drain oils etc.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State what a minor service is.</li> <li>Order parts to carry out a minor service.</li> </ul>

Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
	<b>Automotive components</b>	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove, refit and adjust the clutch cable.</li> <li>Bleed the clutch slave cylinder (hydraulic).</li> </ul>	<ul style="list-style-type: none"> <li>Fit fender covers, steering covers, seat covers and floor mats.</li> <li>Position containers to drain oils etc in correct places.</li> </ul> <b>Grade 4 2<sup>nd</sup> year:</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of the clutch cable.</li> <li>Discusses the purpose of the clutch slave cylinder.</li> <li>Discusses and demonstrates how to remove, refit and adjust the clutch cable.</li> <li>Discusses and demonstrate how to bleed the clutch slave cylinder.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify and state the purpose of the clutch cable.</li> <li>Identify and state the purpose of the clutch slave cylinder.</li> <li>Remove, refit and adjust the clutch cable.</li> <li>Bleed the clutch slave cylinder.</li> </ul>
7	<b>Automotive service</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out a minor service as follows:</li> <li>Replace engine oil and engine oil filter.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of the engine oil and engine oil filter.</li> <li>Discusses and demonstrates how to replace the engine oil and the engine oil filter.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify and state the purpose of the engine oil and engine oil filter.</li> <li>Drain the engine oil and removes the engine oil filter.</li> </ul>

Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
	Basic auto electrical	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Observe safety practices and protocols when working on the auto electrical system and the battery.</li> </ul>	<ul style="list-style-type: none"> <li>Fit new engine oil filter and fills engine oil.</li> <li>Check level of engine oil.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions when working on the auto electrical system and the battery.</li> <li>Discusses the different components of the electrical system.</li> <li>Discusses and demonstrate how to replace a blown fuse.</li> <li>Discusses and demonstrate how to top up battery fluid.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Observe safety precautions when working on the electrical system and battery on a vehicle.</li> <li>State the reason for the electrical system.</li> <li>Identify the different components of the electrical system and their purpose.</li> <li>Replace a blown fuse.</li> <li>Top up battery fluid.</li> </ul>



Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
			<ul style="list-style-type: none"> <li>Identify the different types of batteries.</li> <li>Connect and disconnect a battery.</li> <li>Use the hydrometer to test the electrolyte level in the battery.</li> <li>Identify the fuse box and fuse.</li> <li>Replace a fuse in the fuse box.</li> </ul>
9	<b>Automotive service</b>	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Gap/replace spark plugs</li> <li>Gap/replace points</li> <li>Replace the condenser</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to remove, gap and replace the spark plug.</li> <li>Discusses and demonstrates how to gap and replace points.</li> <li>Discusses and demonstrates how to replace the condenser.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the spark plug, points and condenser.</li> <li>Observe safety precautions when working with the points, spark plug and condenser.</li> <li>State the purpose of the spark plug, points and condenser.</li> <li>Remove, gap and replace the spark plug.</li> <li>Gap and replace the points.</li> <li>Replace the condenser.</li> </ul>

Grade 4 : Term 3			
Week	Topic	Content	Teaching tips, techniques, activities and resources.
	The main electrical components	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>State the purpose of the main electrical components as follows: The wiring system The starter</li> </ul>	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions observed when working with the wiring system and the starter.</li> <li>Discusses the purpose of the wiring system and the different colour wires.</li> <li>Discusses and demonstrates how to remove and refit the starter.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Observe safety precautions when working with the wiring system and the starter,</li> <li>Identify the wiring system and the starter.</li> <li>State the purpose of the wiring system and the starter.</li> <li>Remove and refits the starter.</li> </ul>



Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

<b>Week number</b>	<b>Grade 4 1<sup>st</sup> year.</b>	<b>Grade 4 2<sup>nd</sup> year</b>
Week 2	<ul style="list-style-type: none"> <li>Mixes fuel for a 2 stroke engine.</li> <li>Start up a 2 stroke engine.</li> </ul>	<ul style="list-style-type: none"> <li>Support the gear box with a jack.</li> <li>Removes the gear box..</li> </ul>
Week 3	<ul style="list-style-type: none"> <li>Drain the engine oil.</li> <li>Remove and refit the sump.</li> </ul>	<ul style="list-style-type: none"> <li>Fit the gearbox.</li> <li>Secure all gear box mountings.</li> </ul>
Week 4	<ul style="list-style-type: none"> <li>Fit the cylinder head.</li> <li>Torque the cylinder head.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the clutch plate.</li> <li>Remove the pressure plate.</li> </ul>
Week 5	<ul style="list-style-type: none"> <li>Remove the exhaust manifold.</li> <li>Refit the exhaust manifold.</li> </ul>	<ul style="list-style-type: none"> <li>Align the clutch and pressure plate.</li> <li>Secure the clutch and pressure plate.</li> </ul>
Week 6	<ul style="list-style-type: none"> <li>Fit fender covers.</li> <li>Fit seat, floor and steering covers.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the clutch cable.</li> <li>Bleed the clutch slave cylinder.</li> </ul>
Week 7	<ul style="list-style-type: none"> <li>Remove the engine oil filter.</li> <li>Replace the engine oil filter.</li> </ul>	<ul style="list-style-type: none"> <li>Replace a blown fuse.</li> <li>Top up battery fluid.</li> </ul>
Week 8	<ul style="list-style-type: none"> <li>Remove the air filter.</li> <li>Replace the air filter.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the battery.</li> <li>Replace the battery.</li> </ul>
Week 9	<ul style="list-style-type: none"> <li>Replace a spark plug.</li> <li>Gap a spark plug.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the starter.</li> <li>Refit the starter.</li> </ul>

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

<b>Week number</b>	<b>Grade 4 1<sup>st</sup> year</b>	<b>Grade 4 2<sup>nd</sup> year</b>
Week 2	<ul style="list-style-type: none"> <li>State the process in the upward stroke of the 2 stroke engine</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the gear box.</li> </ul>
Week 3	<ul style="list-style-type: none"> <li>State the purpose of a gasket.</li> </ul>	<ul style="list-style-type: none"> <li>State one safety precaution observed when refitting a gear box.</li> </ul>
Week 4	<ul style="list-style-type: none"> <li>State the purpose of the cylinder head.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the clutch and pressure plate..</li> </ul>
Week 5	<ul style="list-style-type: none"> <li>State the purpose of the inlet manifold.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for aligning the clutch and pressure plate.</li> </ul>

	Week 6	<ul style="list-style-type: none"> <li>• .State the purpose of a out a minor service.</li> </ul>	<ul style="list-style-type: none"> <li>• State the purpose of a clutch cable.</li> </ul>
	Week 7	<ul style="list-style-type: none"> <li>• State the purpose of a oil filter.</li> </ul>	<ul style="list-style-type: none"> <li>• State the purpose of the battery.</li> </ul>
	Week 8	<ul style="list-style-type: none"> <li>• State the purpose of an air filter.</li> </ul>	<ul style="list-style-type: none"> <li>• State the purpose of the fuse box.</li> </ul>
	Week 9	<ul style="list-style-type: none"> <li>• State the purpose of the spark plug.</li> </ul>	<ul style="list-style-type: none"> <li>• State the purpose of the starter.</li> </ul>

PUBLIC COMMENT

### 3.2.4 Grade 4 : 1st year and 2nd year . Term 4.

Grade 4 : Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
1	<b>Good housekeeping practices.</b>	<b>Grade 4 : 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Report faulty equipment.</li> <li>Keep the workshop clean.</li> <li>Practice relevant safety routines.</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses how to report faulty equipment.</li> <li>Discusses cleanliness of the workshop.</li> <li>Demonstrates how to clean a workshop.</li> <li>Discusses how to practice relevant safety routines.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Report faulty equipment.</li> <li>Sweep, wash and reset the workshop.</li> <li>Carry out good housekeeping practices.</li> <li>Practice relevant safety routines.</li> </ul>
	<b>Driver training.</b>	<b>Grade 4 : 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Understand the need for a learner's and drivers licence.</li> <li>Know the age to book for a learner's test.</li> <li>Sets the workshop.</li> </ul>	<b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the need for a learner's and drivers licence.</li> <li>Discusses the age to book for a learners test.</li> <li>Discusses the need to set the workshop.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State the need for a learner's and driver's licence.</li> </ul>













Grade 4 : Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
		equipment.	<p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses safety rules and precautions to be observed when using welding equipment.</li> <li>• Discusses the purpose and use of the welding screen.</li> <li>• Discusses the use and purpose of welding gloves, apron, leggings and cap.</li> <li>• Discusses the purpose and use of a welding helmet.</li> <li>• Demonstrates how to use a welding screen.</li> <li>• Demonstrates how to use the welding gloves, apron, leggings and cap.</li> <li>• Demonstrates how to use the welding helmet.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• State safety rules and precautions to be observed when welding.</li> <li>• Identify the welding screen, welding helmet, welding glove, welding apron, welding leggings and welding cap.</li> <li>• Use a welding screen, helmet, apron, gloves, leggings and cap.</li> </ul>
7	Auto valet	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>• Polish a vehicle.</li> </ul>	<p><b>Grade 4 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses the purpose of polishing a vehicle.</li> <li>• Discusses the different types of polishes.</li> <li>• Discusses and demonstrates how to prepare a vehicle for polishing.</li> <li>• Discusses and demonstrates how to polish a vehicle.</li> <li>• Discusses and demonstrates how to shine a vehicle.</li> </ul> <p>The learners complete the following activities:</p>

Grade 4 : Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
	Basic welding	<b>Grade 4 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of arc welding equipment.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of polishing a vehicle.</li> <li>Prepare a vehicle for polishing.</li> <li>Polish a vehicle.</li> <li>Shine a vehicle.</li> </ul> <b>Grade 4 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the care and use of arc welding equipment.</li> <li>Discusses the different types of arc welding equipment.</li> <li>Discusses and demonstrates how to check and fill oil in an oil cooled welding machine.</li> <li>Discusses and demonstrates how to connect and disconnect welding cables.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Observe safety precautions when using arc welding equipment.</li> <li>State how to care and use arc welding equipment.</li> <li>Identify the different types of arc welding equipment.</li> <li>Fill oil in an oil cooled welding machine.</li> <li>Connect and disconnect the cables in a welding machine.</li> </ul>
8	Auto valet	<b>Grade 4 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Clean the mag rims of a vehicle</li> </ul>	<b>Grade 4 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the reasons for using mag rims.</li> <li>Discusses and demonstrates how to wash mag rims.</li> </ul>

Grade 4 : Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
	Basic welding	<p><b>Grade 4 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of gas welding equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to use a mag rim brush to clean mag rims.</li> <li>Discusses and demonstrates how to polish and shine mag rims.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify mag rims.</li> <li>State the reason for using mag rims in a vehicle.</li> <li>State how to clean mag rims.</li> <li>Wash mag rims.</li> <li>Clean mag rims.</li> <li>Polish and shine mag rims.</li> </ul> <p><b>Grade 4 2<sup>nd</sup> year:</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses how to care and use gas welding equipment.</li> <li>Discusses where and how to store gas welding equipment.</li> <li>Discusses and demonstrates how to blow out nozzles after use.</li> <li>Discusses and demonstrates how to connect and disconnect pipes and regulating valves.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify gas welding equipment.</li> <li>Observe safety precautions when using gas welding equipment.</li> <li>State the purpose of gas welding equipment.</li> <li>Blow out nozzles after use.</li> </ul>



Grade 4 : Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			<ul style="list-style-type: none"> <li>• Cut a 30mm piece of round bar.</li> <li>• Use cross filing techniques when filing the bar.</li> <li>• Use draw filing methods when filing the bar.</li> <li>• File a round bar square.</li> </ul>

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. Although four theoretical are assessed and recorded, a minimum of one 1 theoretical activity is reported on. The following serves as suggestion of skills to record and report on.

Week	Grade 4 1 <sup>st</sup> year	Grade 4 2 <sup>nd</sup> year.
2	<ul style="list-style-type: none"> <li>Check and top up the engine oil.</li> <li>Check and top up coolant and other fluid levels.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the alternator.</li> <li>Refit the alternator.</li> </ul>
3	<ul style="list-style-type: none"> <li>Use a hydrometer.</li> <li>Correct the electrolyte level in a battery.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the coil.</li> <li>Refit the coil.</li> </ul>
4	<ul style="list-style-type: none"> <li>Remove and replace globes.</li> <li>Remove and replace headlight globes.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the wiper blades.</li> <li>Adjust the wiper blades.</li> </ul>
5	<ul style="list-style-type: none"> <li>Wash a vehicle.</li> <li>Dry a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>Drill holes in two pieces of metal.</li> <li>Rivet the 2 pieces of metal.</li> </ul>
6	<ul style="list-style-type: none"> <li>Switch a vacuum on and off.</li> <li>Vacuum a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>Use a welding helmet.</li> <li>Use welding safety apparel.</li> </ul>
7	<ul style="list-style-type: none"> <li>Polish a vehicle.</li> <li>Shine a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>Fill oil a an oil cooled welding machine.</li> <li>Connect and disconnect welding cables.</li> </ul>
8	<ul style="list-style-type: none"> <li>Wash a vehicle's mag rims.</li> <li>Polish and shine a vehicle's mag rims.</li> </ul>	<ul style="list-style-type: none"> <li>Connect and disconnect the pipes and regulators in gas welding equipment.</li> <li>Blow out nozzles after use.</li> </ul>
9	<ul style="list-style-type: none"> <li>Polish and shine a vehicle's tyres.</li> <li>Wash out the engine compartment.</li> </ul>	<ul style="list-style-type: none"> <li>Use cross filing methods to file a round bar.</li> <li>Use draw filing methods to file a round bar.</li> </ul>

#### Theoretical Assessment: Term 4.

Assessment of 4 theoretical worksheets/activities to be recorded with a minimum of 1 theoretical worksheet/activity to be reported. The following serves as suggestions of worksheets/activities to report on.

Week	Grade 4 1 <sup>st</sup> year.	Grade 4 2 <sup>nd</sup> year.
2	<ul style="list-style-type: none"> <li>State reasons for maximum and minimum fluid levels.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the alternator.</li> </ul>
3	<ul style="list-style-type: none"> <li>State the purpose of the battery.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the battery.</li> </ul>
4	<ul style="list-style-type: none"> <li>State a reason for single and double filament globes.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of wiper blades.</li> </ul>
5	<ul style="list-style-type: none"> <li>State the reasons for washing a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>State 2 method of joining metals.</li> </ul>

	6	<ul style="list-style-type: none"> <li>State a reason for vacuuming a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>State the main reason for using a welding helmet.</li> </ul>
	7	<ul style="list-style-type: none"> <li>State the purpose of polishing a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for filling oil in a welding machine.</li> </ul>
	8	<ul style="list-style-type: none"> <li>State the reason for using mag rims in a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of gas welding equipment in a vehicle.</li> </ul>
	9	<ul style="list-style-type: none"> <li>State the purpose of polishing a vehicle.</li> </ul>	<ul style="list-style-type: none"> <li>Name 2 methods of filing metal.</li> </ul>

### 3.2.5 Grade 5: 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year. Term 1.

Each term comprises of ten weeks and a minimum of 9 practical sessions is compulsory. The sequence within the term is not compulsory and the teacher may cover the learning content and skills in any appropriate sequence. Learners are three years in Grade 5 and more advanced skills are instructed during the second and third years in grade 5.

Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
1	<p><b>Health and safety.</b></p> <p><b>Good housekeeping practices.</b></p>	<p><b>Grade 5 1<sup>st</sup> year:</b></p> <ul style="list-style-type: none"> <li>Understand the implications of exposure to hazardous substances and hazards and prevention thereof.</li> <li>Implement health and safety plans.</li> <li>Identify, care and use of protective clothing.</li> <li>Implement statutory requirements.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year:</b></p> <ul style="list-style-type: none"> <li>Check equipment and tools for safe and effective.</li> <li>Set tools and equipment to specification and sequence.</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year:</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses health and safety issues with regards to hazardous substances.</li> <li>Discusses health and safety plans.</li> <li>Discusses care and use of protective clothing.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Remove all potential hazards from the workshop.</li> <li>Identify, care and use protective clothing.</li> <li>Practice safety in the workshop.</li> <li>Sweep, clean and wash the workshop.</li> <li>Reset the workshop and tool room.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year:</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the reasons for checking tools and equipment for safety and effectiveness.</li> </ul>



Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Driver training.	<ul style="list-style-type: none"> <li>Practice good housekeeping and know the impact of poor housekeeping.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Know what disqualifies a person from obtaining learners licence.</li> <li>Know what a learner's licence allows a person to do.</li> <li>Learns the K53 rules of the road and road signs.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses how to set tools and equipment.</li> <li>Discusses how to practice good housekeeping and the effects of poor housekeeping.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the reasons for checking tools and equipment.</li> <li>Set tools and equipment.</li> <li>Practice good housekeeping.</li> <li>State the impact of poor housekeeping.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses driver training and K53.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State what a person needs to obtain a learner's licence.</li> <li>Know the K53 rules of the road and road signs.</li> </ul>
2	Specialist hand tools	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of the:</li> <li>Brake spring pliers.</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety when using the brake spring pliers.</li> <li>Discusses and demonstrates how to remove the rear brake drums.</li> <li>Discusses and demonstrates how to use the brake spring pliers.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the brake spring pliers.</li> <li>Observe safety precautions when using the brake spring pliers.</li> <li>Remove the rear brake drums. Use the brake spring pliers to remove</li> </ul>

Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	<b>Automotive components</b>	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine components: Flywheel Front pulley</li> </ul>	and refit brake springs. <b>Grade 5 2<sup>nd</sup> year:</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of the front pulley and the flywheel.</li> <li>Demonstrates how to remove and refit the front pulley.</li> <li>Demonstrates how to remove and refit the flywheel.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the front pulley and the flywheel.</li> <li>State the purpose of the front pulley and the flywheel.</li> <li>Remove and refit the front pulley.</li> <li>Remove and refit the flywheel.</li> </ul>
	<b>Automotive service</b>	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out major service as follows:</li> <li>Adjust handbrakes.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year:</b> The teacher: <ul style="list-style-type: none"> <li>Discusses safety precautions when adjusting the handbrakes.</li> <li>Discusses the purpose of the handbrakes.</li> <li>Discusses and demonstrates how to adjust the handbrakes inside the vehicle.</li> <li>Discusses and demonstrates how to adjust the vehicle under the vehicle.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>State the purpose of the handbrake.</li> <li>Observe safety precautions when adjusting the handbrakes.</li> <li>Adjust the handbrakes inside the vehicle.</li> </ul>

Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
			<ul style="list-style-type: none"> <li>Adjust the handbrakes under the vehicle.</li> </ul>
3	<b>Specialist hand tools</b>	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the: Valve spring lifter.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to use the valve spring lifter to remove and refit a valve.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the valve spring lifter.</li> <li>Observe safety precautions when using a valve spring lifter.</li> <li>Use the valve spring lifter to remove a valve.</li> <li>Use a valve spring lifter to refit a valve.</li> </ul>
	<b>Automotive components</b>	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine components: Water pump.</li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of the water pump.</li> <li>Discusses and demonstrates how to check the water pump for water leaks and a worn or collapsed bearing.</li> <li>Discusses and demonstrates how to remove and refit a water pump.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the water pump.</li> <li>Check for water leaks and worn or collapsed bearings.</li> <li>Remove and refit the water pump.</li> </ul>
	<b>Automotive components</b>	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out major service as follows:</li> </ul>	<b>Grade 5 3<sup>rd</sup> year</b> The teacher:



Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
		Piston rings.	<p>piston rings.</p> <ul style="list-style-type: none"> <li>• Discusses and demonstrates how to set the rings in the piston.</li> <li>• Discusses and demonstrates how to use the piston ring squeezer to fit the piston in the cylinder bore.</li> <li>• Discusses and demonstrates how to remove a piston from the cylinder bore.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Identify the piston ring squeezer, the piston and the piston rings.</li> <li>• Set the rings in the piston.</li> <li>• Use a piston ring squeezer to squeeze the rings a in the piston and fit the piston in the cylinder bore.</li> <li>• Remove the piston from the cylinder bore.</li> </ul>
	<b>Automotive service</b>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>• Carry out major service as follows: Check valve timing. Fit timing belt.</li> </ul>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses valve timing.</li> <li>• Discusses and demonstrates how to set vale timing.</li> <li>• Discusses and demonstrates how to set a timing belt.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Identify the cam shaft and the crank shaft.</li> <li>• Set valve timing.</li> <li>• Fit a timing belt.</li> </ul>

Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
5	Specialist hand tools	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the:                Piston ring groove cleaner.             </li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the piston groove cleaner.</li> <li>Discusses and demonstrates how to remove the piston rings.</li> <li>Discusses and demonstrates how to clean the piston grooves.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the piston, the piston rings and the piston groove cleaner.</li> <li>Remove the rings from the piston.</li> <li>Clean the piston grooves.</li> </ul>
	Automotive components	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine components:                Crankshaft                Camshaft.             </li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the crankshaft and camshaft.</li> <li>Discusses and demonstrates how to remove and refit the crankshaft and camshaft.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the crankshaft and camshaft.</li> <li>Remove and refit the crankshaft and camshaft.</li> </ul>
	Automotive service	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out major service as follows:                Check/replace/adjust fan belts.             </li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the fan belts.</li> </ul>



Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Automotive service	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Carry out major service as follows: Check/replace suspension bushes.</li> </ul>	<ul style="list-style-type: none"> <li>Identify and state the functions of the fuel pump, oil pump and welsh plugs.</li> <li>Remove a welsh plug.</li> <li>Replace a welsh plug.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the suspension bushes.</li> <li>Discusses and demonstrates how to check and replace suspension bushes.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify suspension bushes.</li> <li>Observe safety precautions when replacing suspension bushes.</li> <li>Check suspension bushes.</li> <li>Remove and replace suspension bushes.</li> </ul>
7	Specialist hand tools	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of the: Timing light.</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the use of the timing light.</li> <li>Discusses and demonstrates how to connect up the timing light.</li> <li>Discusses and demonstrates how to use the timing light.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the timing light.</li> <li>Observe safety precautions when using the timing light.</li> </ul>



Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Automotive components	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove, grind and refit valves in the cylinder head.</li> </ul>	<ul style="list-style-type: none"> <li>Connect the timing light.</li> <li>Use the timing light.</li> </ul> <b>Grade 5 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the use of the grinding paste and valve grinding tool.</li> <li>Discusses safety when removing and refitting the valve.</li> <li>Discusses and demonstrates how to remove, grind and replace the valve.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the valve, valve grinding tool and the grinding paste.</li> <li>Observe safety precautions when using the valve spring compressor.</li> <li>Remove the valve.</li> <li>Attach the valve grinding tool to the valve.</li> <li>Grind the valve.</li> <li>Refit the valve.</li> </ul>
	Automotive service	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out major service as follows: Check/replace/adjust wiper blades.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of wiper blades.</li> <li>Discusses how to check, replace and adjust wiper blades.</li> <li>Demonstrates how to check, replace and adjust wiper blades.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the wiper blades.</li> </ul>



Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	<b>Automotive service</b>	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out the major service as follows: Check/adjust tappets.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the reasons for checking tappets in a vehicle.</li> <li>Discusses and demonstrates how to set the engine to check tappets.</li> <li>Discusses and demonstrates how to check and adjust tappets.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the tappets and the feeler gauge.</li> <li>Set the engine to adjust the tappets using the rocking method.</li> <li>Check and adjusts the tappets.</li> </ul>
9	<b>Specialist hand tools</b>	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the: Stud remover.</li> </ul>	<b>Grade 5 1<sup>st</sup> year</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to shock and lubricate the stud before removal.</li> <li>Discusses and demonstrates how to use the stud remover to remove a broken stud.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the stud remover.</li> <li>Shock and lubricate the broken stud.</li> <li>Use the stud remover to remove the broken stud.</li> </ul>
	<b>Automotive components</b>	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit a radiator.</li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to drain the water in the radiator.</li> </ul>

Grade 5: Term 1			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	<b>Automotive service</b>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Carry out the major service as follows: Check/adjust engine timing.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to remove and refit the radiator.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the radiator and the draining points.</li> <li>Observe safety precautions when removing and refitting the radiator.</li> <li>Drain the water from the radiator.</li> <li>Remove and refit the radiator.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to connect the timing light.</li> <li>Discusses and demonstrates how to check and adjust timing.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Observe safety precautions when checking and adjusting engine timing.</li> <li>Identify correct the timing marks on the engine block.</li> <li>Identify the timing light.</li> <li>Connect up the timing light.</li> <li>Check and adjusts engine timing.</li> </ul>

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

Week	Grade 5 1 <sup>st</sup> year	Grade 5 2 <sup>nd</sup> year	Grade 5 3 <sup>rd</sup> year
2	<ul style="list-style-type: none"> <li>Remove the brake return springs</li> <li>Refit the brake return springs.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the front pulley.</li> <li>Refit the front pulley.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the handbrake inside the vehicle.</li> <li>Adjust the handbrake under the vehicle.</li> </ul>
3.	<ul style="list-style-type: none"> <li>Use a valve spring lifter to remove a valve.</li> <li>2. Use a valve spring lifter to refit a valve.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the water pump.</li> <li>Refit the water pump.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the timing belt cover.</li> <li>Refit the timing belt cover.</li> </ul>
4	<ul style="list-style-type: none"> <li>Grind a valve with rough grinding paste.</li> <li>Grind a valve with fine grinding paste.</li> </ul>	<ul style="list-style-type: none"> <li>Fit a piston in a cylinder bore.</li> <li>Remove the piston from the cylinder bore.</li> </ul>	<ul style="list-style-type: none"> <li>Fit the timing belt.</li> <li>Remove the timing belt.</li> </ul>
5	<ul style="list-style-type: none"> <li>Remove the piston rings from the piston.</li> <li>Clean piston grooves.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the crankshaft from the engine block.</li> <li>Refit the crankshaft to the engine block.</li> </ul>	<ul style="list-style-type: none"> <li>Replace a fan belt.</li> <li>Adjust the fan belt.</li> </ul>
6	<ul style="list-style-type: none"> <li>Fit the honing tool in the hand drill.</li> <li>Use the honing tool.</li> </ul>	<ul style="list-style-type: none"> <li>Remove a welsh plug.</li> <li>Replace the welsh plug.</li> </ul>	<ul style="list-style-type: none"> <li>Remove suspension bushes.</li> <li>Replace suspension bushes.</li> </ul>
7	<ul style="list-style-type: none"> <li>Connect timing light.</li> <li>Use timing light.</li> </ul>	<ul style="list-style-type: none"> <li>Remove a valve.</li> <li>Refit a valve.</li> </ul>	<ul style="list-style-type: none"> <li>Remove wiper.</li> <li>Replace wiper blade.</li> </ul>
8	<ul style="list-style-type: none"> <li>Use a bearing pulley.</li> <li>Remove a bearing.</li> </ul>	<ul style="list-style-type: none"> <li>Hone cylinder bore.</li> <li>Control speed of drill when honing.</li> </ul>	<ul style="list-style-type: none"> <li>Rock the tappets.</li> <li>Adjust the tappets.</li> </ul>
9	<ol style="list-style-type: none"> <li>Shock and lubricate broken stud.</li> <li>Remove broken stud.</li> </ol>	<ol style="list-style-type: none"> <li>Remove radiator.</li> <li>Refit radiator.</li> </ol>	<ol style="list-style-type: none"> <li>Connect timing light.</li> <li>Adjust distributor timing.</li> </ol>

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is

reported on. The following serves as suggestions of theoretical activities to report on.

<b>Week</b>	<b>Grade 5 1<sup>st</sup> year</b>	<b>Grade 5 2<sup>nd</sup> year.</b>	<b>Grade 5 with different 3<sup>rd</sup> year.</b>
2	<ul style="list-style-type: none"> <li>State the purpose of the brake spring pliers.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the front pulley.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the handbrake.</li> </ul>
3	<ul style="list-style-type: none"> <li>State the purpose of the valve spring compressor.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the water pump.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the timing light.</li> </ul>
4	<ul style="list-style-type: none"> <li>State the purpose of the valve grinder.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the piston.</li> </ul>	<ul style="list-style-type: none"> <li>State why we replace the timing belt.</li> </ul>
5	<ul style="list-style-type: none"> <li>State the purpose of the piston ring groove cleaner.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the crankshaft.</li> </ul>	<ul style="list-style-type: none"> <li>State why we adjust the fan belt.</li> </ul>
6	<ul style="list-style-type: none"> <li>State the purpose of the cylinder hone.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of welsh plugs.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of suspension bushes.</li> </ul>
7	<ul style="list-style-type: none"> <li>State the purpose of the timing light.</li> </ul>	<ul style="list-style-type: none"> <li>State why we grind the cylinder head valves.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the wiper blades.</li> </ul>
8	<ul style="list-style-type: none"> <li>State the purpose of the bearing puller.</li> </ul>	<ul style="list-style-type: none"> <li>State why we use paraffin to hone the cylinder bore.</li> </ul>	<ul style="list-style-type: none"> <li>State why we adjust tappets.</li> </ul>
9	<ul style="list-style-type: none"> <li>State the purpose of the stud remover.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the radiator.</li> </ul>	<ul style="list-style-type: none"> <li>State why we set engine timing.</li> </ul>

3.2.6 Grade 5: 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year. Term 2.

Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
1	World of Work/learner work experience programme.	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify the criteria for the learner work experience programme.</li> <li>State the benefits and conditions for the worker in the world of work.</li> <li>Participate in the learner work experience programme (LWEP).</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the criteria for the work experience programme.</li> <li>Discusses the benefits and conditions for the worker.</li> <li>Discusses how and when the learner can participate in the work experience programme.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the criteria for the work experience programme.</li> <li>State the benefits for the worker in the world of work.</li> <li>Participate in the work experience programme.</li> </ul>
	World of work.	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Prepare for a job interview.</li> <li>Work with competence.</li> <li>Have good work tolerance.</li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses how to prepare for a job interview.</li> <li>Discusses how to work with competence.</li> <li>Discusses how to have good work tolerance.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State how to prepare for a job interview.</li> <li>State how to work with competence and have good work tolerance.</li> <li>Take part in mock job interviews.</li> </ul>
	Driver training.		





Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive service	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Carry out the major service as follows: Check/adjust tyre pressures. Check depth of tyre thread.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrate how to remove and refit brake disc pads.</li> <li>Discusses safety precautions when removing and refitting brake disc pads.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the purpose of the disc pads.</li> <li>Identify brake disc pads.</li> <li>Observe safety precautions when working on the brake disc pads.</li> <li>Remove and refit brake disc pads.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to check and adjust tyre pressures.</li> <li>Discusses and demonstrates how to check thread depth.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the purpose of tyre pressure.</li> <li>Identify the tyre, the tyre thread, the tyre valves and the tyre pressure gauge.</li> <li>Check the tyre pressure.</li> <li>Adjust the tyre pressure.</li> </ul>
3	Engineering measuring tools	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of a : Micrometer Digital micrometer.</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to use the micrometer and the digital micrometer.</li> </ul> <p>The learners complete the following activities:</p>

Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive components	<b>Grade 5 2<sup>nd</sup> year</b> <ul style="list-style-type: none"> <li>Identify, remove and refit brake shoes.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the micrometer.</li> <li>Identify the micrometer and the digital micrometer.</li> <li>Use the micrometer and the digital micrometer.</li> </ul> <b>Grade 5 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to remove and refit the brake shoes.</li> <li>Discusses safety precautions when removing and refitting the brake shoes.</li> </ul> The learners complete the following activities. <ul style="list-style-type: none"> <li>State the purpose of the brake shoes.</li> <li>Identify the brake shoes.</li> <li>Observe safety precautions when removing and refitting brake shoes.</li> <li>Remove and refit brake shoes.</li> </ul>
	Automotive service	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out the major service as follows: Check/repair water leaks. Check/repair oil leaks.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to check and repair water and oil leaks.</li> <li>Discusses safety precautions observed when repairing water and oil leaks.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>States the purpose of repairing water and oil leaks.</li> <li>Observes safety precautions when repairing water and oil leaks.</li> </ul>





Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	<b>Automotive service</b>  <b>Inspection and lubrication</b>	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out the major service as follows: Carry out further checks as per major service check sheet. Grease all grease nipples.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to bleed the brakes.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the brake slave cylinder pistons and seals.</li> <li>State the reason for changing seals in the brake slave cylinder.</li> <li>Remove the seals in the cylinder.</li> <li>Hone the cylinder and replace the seals in the piston in the cylinder.</li> <li>Bleed the brakes.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses further checks to be carried out in a major service.</li> <li>Discusses and demonstrates how to grease the grease nipples.</li> <li>Discusses and demonstrates how to fill up the grease gun.</li> <li>Demonstrates how to carry out further checks as per major service.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Carry out further checks as per major service.</li> <li>Identify the grease gun and the grease nipples.</li> <li>State the reason for greasing a vehicle.</li> <li>Fill up the grease gun.</li> <li>Grease the grease nipples.</li> </ul>
6	<b>Garage equipment</b>	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the tyre changing machine.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions when removing the tyre from the rim.</li> </ul>

Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		<ul style="list-style-type: none"> <li>Remove the tyre from the rim.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to fit the tyre onto the tyre changing machine.</li> <li>Discusses and demonstrates how to remove the tyre from the rim.</li> </ul> <p>The learners complete the following activities.</p> <ul style="list-style-type: none"> <li>Observe safety precautions when removing the tyre from the rim.</li> <li>State the reason for removing the tyre from the rim.</li> <li>Fit the tyre onto the tyre changing machine.</li> <li>Remove the tyre from the rim.</li> </ul>
	Automotive components	<p><b>Grade 5 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, remove and refit the ball joints in a tie rod/track rod.</li> </ul>	<p><b>Grade 5 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the ball joints in a tie/track rod.</li> <li>Discusses and demonstrates how to remove/adjust/ replace the ball joint in the tie/track rod.</li> </ul> <p>The learners complete the following activities.</p> <ul style="list-style-type: none"> <li>Identify the ball joint and the tie/track rod.</li> <li>State the purpose of the ball joint.</li> <li>Remove/adjust/replace the ball joint in the tie/track rod.</li> </ul>
	The battery	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>Observe safety practices and protocols when working on auto electrical systems.</p> <p>Remove and replace the battery.</p>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the battery.</li> <li>Discusses safety precautions and protocols when working on auto electrical systems.</li> </ul>



Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	The main electrical components	<b>Grade 5 3<sup>rd</sup> year.</b> Replace a blown fuse. Use a strip connector.	MacPherson or similar strut. <ul style="list-style-type: none"> <li>Discusses and demonstrates how to remove and refit a MacPherson strut.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the MacPherson or similar strut.</li> <li>State the purpose of the MacPherson strut.</li> <li>Observe safety precautions when removing or refitting the Macpherson or similar strut.</li> <li>Remove and refit the strut.</li> </ul> <b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to replace a fuse.</li> <li>Discusses and demonstrates how to use a strip connector.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the fuse and strip connector.</li> <li>State the purpose of the fuse and strip connector.</li> <li>Replace a blown fuse.</li> <li>Use a strip connector.</li> </ul>
8	Garage equipment	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the tyre changing machine.</li> <li>Inflating the tyre and checking and repairing leaks.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses safety precautions when inflating a tyre and repairing leaks.</li> <li>Discusses and demonstrates how to inflate a tyre and check for leaks.</li> </ul> The learners complete the following activities:



Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive equipment	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify and remove a CV joint or a propeller shaft.</li> </ul>	<ul style="list-style-type: none"> <li>Observe safety precautions when inflating a tyre.</li> <li>State the purpose for inflating the tyre and checking for leaks.</li> <li>Identify the tyre pressure gauge.</li> <li>Inflate a tyre and checks for leaks.</li> </ul> <b>Grade 5 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of the CV joint or propeller shaft.</li> <li>Discusses safety precautions observed when removing a CV joint or a propeller shaft.</li> <li>Discusses and demonstrates how to remove a CV joint or propeller shaft.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the CV joint or propeller shaft.</li> <li>State the purpose of the CV joint or propeller shaft.</li> <li>Observe safety precautions when removing the CV joint or propeller.</li> <li>Remove the CV joint or propeller shaft.</li> </ul>
	The main electrical components	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Remove a starter.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses safety precautions observed when removing the starter.</li> <li>Discusses the purpose of the starter.</li> <li>Discusses and demonstrates how to remove the starter.</li> </ul> The learners complete the following activities:



Grade 5: Term 2			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	The main electrical components	Grade 5 3 <sup>rd</sup> year. Replace a starter.	<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Observe safety precautions when fitting the CV joint or propeller shaft.</li> <li>• Fit the CV joint or propeller shaft.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses safety precautions when fitting the starter.</li> <li>• Discusses and demonstrates how to replace the starter.</li> <li>• Discusses and demonstrates how to connect up the battery.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Observes safety precautions when fitting the starter.</li> <li>• Fits the starter.</li> <li>• Connects the battery.</li> </ul>

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Week	Grade 5 1 <sup>st</sup> year	Grade 5 2 <sup>nd</sup> year	Grade 5 3 <sup>rd</sup> year
2	<ul style="list-style-type: none"> <li>Use a vernier calliper.</li> <li>Use a digital vernier calliper.</li> </ul>	<ul style="list-style-type: none"> <li>Remove brake disc pads.</li> <li>Refit brake disc pads.</li> </ul>	<ul style="list-style-type: none"> <li>Check tyre pressure.</li> <li>Adjust tyre pressure.</li> </ul>
3	<ul style="list-style-type: none"> <li>Use a micrometer.</li> <li>Use a digital micrometer.</li> </ul>	<ul style="list-style-type: none"> <li>Remove brake shoes.</li> <li>Refit brake shoes.</li> </ul>	<ul style="list-style-type: none"> <li>Repair water leaks.</li> <li>Repair oil leaks.</li> </ul>
4	<ul style="list-style-type: none"> <li>Set up a dial gauge.</li> <li>Use a dial gauge.</li> </ul>	<ul style="list-style-type: none"> <li>Remove brake slave cylinder.</li> <li>Refit brake slave cylinder.</li> </ul>	<ul style="list-style-type: none"> <li>Checks loose nuts and bolts.</li> <li>Tightens loose nuts and bolts.</li> </ul>
5	<ul style="list-style-type: none"> <li>Set up the tyre changing machine.</li> <li>Break the tyre bead.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the seals in the brake slave cylinder.</li> <li>Hone the cylinder and replace seals.</li> </ul>	<ul style="list-style-type: none"> <li>Fills up the grease gun.</li> <li>Grease the grease nipples.</li> </ul>
6	<ul style="list-style-type: none"> <li>Fit the wheel onto the tyre changing machine.</li> <li>Removes the tyre from the rim.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the ball joint from the tie rod.</li> <li>Refit the ball joint onto the tie rod.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the battery.</li> <li>Refit the battery.</li> </ul>
7	<ul style="list-style-type: none"> <li>Lubricate the tyre with soapy water.</li> <li>Fit the tyre onto the rim.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the strut.</li> <li>Refit the strut.</li> </ul>	<ul style="list-style-type: none"> <li>Replace a blown fuse.</li> <li>Use a strip connector.</li> </ul>
8	<ul style="list-style-type: none"> <li>Inflate a tyre.</li> <li>Check for and repairs leaks.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the front hub.</li> <li>Remove the CV joint.</li> </ul>	<ul style="list-style-type: none"> <li>Disconnect the battery.</li> <li>Remove the starter.</li> </ul>
9	<ul style="list-style-type: none"> <li>Connect up the battery charger.</li> <li>Connect the battery and charge.</li> </ul>	<ul style="list-style-type: none"> <li>Fit the CV joint.</li> <li>Fit the hub.</li> </ul>	<ul style="list-style-type: none"> <li>Fit the starter.</li> <li>Connect the battery.</li> </ul>

**Theoretical assessment: Term 2.**

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week	Grade 5 1 <sup>st</sup> year	Grade 5 2 <sup>nd</sup> year	Grade 5 3 <sup>rd</sup> year
2	<ul style="list-style-type: none"> <li>State the purpose of the vernier.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the disc pads.</li> </ul>	<ul style="list-style-type: none"> <li>State the reasons for correct tyre pressures.</li> </ul>
3	<ul style="list-style-type: none"> <li>State the purpose of the micrometer.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the brake shoes.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for repairing water and oil leaks.</li> </ul>
4	<ul style="list-style-type: none"> <li>State the purpose of the dial gauge.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the brake slave cylinder.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for tightening loose nuts and bolts.</li> </ul>
5	<ul style="list-style-type: none"> <li>State the purpose of the tyre changing machine.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for bleeding the brakes.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for greasing the vehicle.</li> </ul>
6	<ul style="list-style-type: none"> <li>State the reason for removing the tyre from the rim.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the ball joints.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the battery.</li> </ul>
7	<ul style="list-style-type: none"> <li>State the reason for lubricating the tyre before fitting on a rim.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a strut.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a fuse.</li> </ul>
8	<ul style="list-style-type: none"> <li>State the reason for inflating a tyre and checking for air leaks.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a CV joint.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of a starter.</li> </ul>
9	<ul style="list-style-type: none"> <li>State the purpose of the battery charger.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for greasing the CV joints.</li> </ul>	<ul style="list-style-type: none"> <li>State the reasons for changing the brushes in the starter.</li> </ul>

3.2.7 Grade 5: 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> year. Term 3.

Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
1	<b>Workshop health and safety</b>	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify the location of the fire extinguisher.</li> <li>Identify, care and use of the fire extinguisher.</li> <li>Observe procedures for emergencies.</li> <li>Report accidents and emergencies.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the location of fire extinguishers.</li> <li>Discusses the care and use of fire extinguishers.</li> <li>Discusses emergency procedures.</li> <li>Discusses how to report accidents and emergencies.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State where fire extinguishers must be located.</li> <li>Identify, care and uses fire extinguishers.</li> <li>Observe procedures for emergencies.</li> <li>Report accidents and emergencies.</li> </ul>
	<b>Good housekeeping</b>	<b>Grade 5 2<sup>nd</sup> year</b> <ul style="list-style-type: none"> <li>Observe organisational housekeeping policies and procedures.</li> <li>Comply with housekeeping procedures and policies.</li> <li>Identify and report shortcomings in housekeeping practices.</li> <li>Comply with relevant safety routines.</li> <li>Ensure that workstations conform to health and safety requirements.</li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how set tools and equipment in sequence.</li> <li>Discusses good housekeeping procedures.</li> <li>Discusses and demonstrates housekeeping procedures and policies.</li> <li>Discusses how to identify and report shortcomings in housekeeping practices.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the reasons for placing tools and equipment in sequence.</li> </ul>

Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	World of work	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Practice appropriate social skills training.</li> <li>Be orientated to the open labour market.</li> <li>Perform personal management/activities for daily living.</li> </ul>	<ul style="list-style-type: none"> <li>State the reasons for good housekeeping practices.</li> <li>Set tools and equipment in the workshop.</li> <li>Clean up and reset the workshop and tool room.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses appropriate social skills in the work environment.</li> <li>Discusses how to be orientated to the open labour market.</li> <li>Discusses daily planning.</li> <li>Discusses the Learner work experience programme (LWEP).</li> <li>Demonstrates appropriate social skills in the workplace.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the appropriate social skills practiced in the work environment.</li> <li>State ways to be orientated in the open labour market.</li> <li>Carry out daily planning.</li> <li>Demonstrate appropriate social skills practices in the work environment.</li> <li>Compile a CV.</li> <li>Participate in a work experience programme.</li> </ul>
2	Garage equipment	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify, care and use of the wheel balancing machine.</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to use and care for a wheel balancing machine.</li> </ul>

Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Automotive components	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify and remove a shock absorber.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses safety when using the machine.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the machine.</li> <li>State the purpose of the machine.</li> <li>Observe safety precautions when using the machine.</li> <li>Connect up the machine.</li> <li>Switch the machine on and off.</li> </ul>
	The main electrical components	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Remove brushes from a starter.</li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the shock absorber.</li> <li>Discusses how to test for a defective shock absorber.</li> <li>Discusses and demonstrates how to check and remove the shock absorber.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the shock absorber.</li> <li>State the purpose of the shock absorber.</li> <li>Check for a defective shock absorber.</li> <li>Remove the shock absorber.</li> </ul> <b>Grade 5 3<sup>rd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the starter.</li> </ul>





Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	The main electrical components	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Replace brushes on a starter.</li> <li>Test the starter.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to refit and secure the shock absorber.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the reason for replacing the shock absorber.</li> <li>Refit the shock absorber.</li> <li>Secure the shock absorber.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the reason for replacing the brushes in the starter.</li> <li>Discusses and demonstrates how to replace the brushes in the starter.</li> <li>Discusses and demonstrates how to solder the brushes.</li> <li>Discusses and demonstrates how to reassemble the starter.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the reason for replacing the brushes in the starter.</li> <li>State the purpose of the soldering iron.</li> <li>Use a soldering iron.</li> <li>Replace the brushes in the starter.</li> <li>Reassemble the starter.</li> </ul>
4	Garage equipment	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, care and use of the wheel balancing machine.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to switch the machine on.</li> <li>Discusses the purpose of the tyre weights.</li> </ul>

Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Automotive equipment	<p><b>Grade 5 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Identify and remove the front hubs and bearings.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to balance the wheel using different weights.</li> <li>Discusses and demonstrates how to switch off the machine and remove the wheel.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the purpose of the wheel weights.</li> <li>Switch the machine on.</li> <li>Balance the wheel using different weights.</li> <li>Switch the machine off and removes the wheel.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions when removing the front hubs.</li> <li>Discusses the purpose of the front hubs and bearings.</li> <li>Discusses and demonstrates how to remove the front hubs and bearings.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the hub and bearing.</li> <li>State the purpose of the hub and bearing.</li> <li>Observe safety precautions when removing the hub.</li> <li>Remove the hub and bearings.</li> </ul>
	The main electrical	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Remove an alternator.</li> </ul>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p>



Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	The mail electrical components	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Replace an alternator.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to wash and inspect wheel bearings.</li> <li>Discusses and demonstrates how to replace wheel bearings.</li> <li>Discusses and demonstrates how to repack wheel bearings with grease.</li> <li>Discusses and demonstrates how to refit front hubs and bearings.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Wash and inspect the wheel bearings.</li> <li>Replace wheel bearings.</li> <li>Repack wheel bearings with grease.</li> <li>Refit hubs and wheel bearings.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to replace the alternator.</li> <li>Discusses and demonstrates how to fit wiring back to the alternator.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the alternator and wiring.</li> <li>Replace the alternator.</li> <li>Refit the wiring back to the alternator.</li> </ul>
6	Fundamental engine technology	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Discuss cooling and lubrication of an engine.</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses cooling of an engine.</li> <li>Discusses and demonstrates how to check water pipes.</li> </ul>

Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Automotive components	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Identify and remove the silencer box.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to check and correct anti-freeze levels.</li> <li>Discusses lubrication of the engine.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the cooling and lubrication systems in the engine.</li> <li>State the purpose of the cooling and lubrication systems.</li> <li>Check and replaces defective water pipes.</li> <li>Check and correct antifreeze levels.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the exhaust system and the silencer box.</li> <li>Discusses and demonstrates how to replace the exhaust system and the silencer box.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the exhaust system and the silencer box.</li> <li>State the purpose of the exhaust system and the silencer box.</li> <li>Remove and the silencer box.</li> </ul>
	Automotive components	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Remove and replace a distributor.</li> <li>Remove and replace a coil.</li> </ul>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the distributor and the coil.</li> <li>Discusses and demonstrates how to remove and replace the distributor and the coil.</li> </ul>



Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	<b>Automotive service</b>	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>• Replace wiper blades.</li> <li>• Charge the battery.</li> <li>• Test and Replace globes.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the silencer box and the gaskets.</li> <li>• State the purpose of the silencer box and the gaskets.</li> <li>• Refit the silencer box.</li> <li>• Repair the silencer box.</li> </ul> <b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>• Discusses and demonstrates how to Replace the wiper blades.</li> <li>• Discusses and demonstrates how to charge the battery.</li> <li>• Discusses and demonstrates how to test and Replace globes.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>• Identify the wiper blade, the battery, the battery charger, the globes and the multi-meter.</li> <li>• State the purpose of replacing the wiper blades.</li> <li>• State the purpose of charging the battery.</li> <li>• Replace the wiper blade.</li> <li>• Charge the battery.</li> <li>• Test and replace globes.</li> </ul>
8	<b>Fundamental engine technology</b>	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>• Discuss the transmission system.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>• Discusses the transmission system and its purpose.</li> <li>• Discusses the clutch and gearbox.</li> <li>• Discusses and demonstrates how to remove and refit the gear lever.</li> </ul>



Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Automotive service	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>State what a major service is.</li> <li>Plan and prepare for a major service.</li> <li>Carry out the major service as follows:</li> <li>Replace engine oil and filter.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to remove and replace the release bearing.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the transmission system.</li> <li>State the purpose of the gear lever.</li> <li>States the purpose of the release bearing.</li> <li>Remove and replace the gear lever.</li> <li>Remove and replace the release bearing.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses how to plan and prepare for a major service.</li> <li>Discusses and demonstrates how to replace the engine oil filter and the engine oil.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State how to plan and prepare for a major service.</li> <li>State the purpose of the engine oil and the engine oil filter.</li> <li>Replace the engine oil and the engine oil filter.</li> </ul>
	The multi-meter. Checking and replacing of	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Use a multi-meter for basic checks.</li> <li>Check/replace/adjust fan belt.</li> </ul>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to use the multi-meter.</li> <li>Discusses and demonstrates how to check, replace and adjust fan</li> </ul>



Grade 5: Term 3			
Week	Topic	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Basic welding	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>• Observe safety precautions when welding.</li> <li>• State safety protection when welding.</li> </ul>	<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>• Identify the air filter.</li> <li>• State the purpose of the air filter.</li> <li>• Remove and replace the air filter.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>• Discusses safety precautions observed when welding.</li> <li>• Discusses and demonstrates how use the leather apron, welding gloves, leather spats, welding helmet and welding cap.</li> </ul> <p>The learners complete the following activities.</p> <ul style="list-style-type: none"> <li>• Observe safety precautions when welding.</li> <li>• Use leather apron, welding gloves, leather spats, welding helmet and welding cap when welding.</li> </ul>

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

Week	Grade 5 1 <sup>st</sup> year.	Grade 5 2 <sup>nd</sup> year.	Grade 5 3 <sup>rd</sup> year.
2	<ul style="list-style-type: none"> <li>Connects up the wheel balancing machine.</li> <li>Switches the machine on and off.</li> </ul>	<ul style="list-style-type: none"> <li>Checks for defective shock absorbers.</li> <li>Removes the shock absorber.</li> </ul>	<ul style="list-style-type: none"> <li>Strips the starter.</li> <li>Removes the brushes from the starter.</li> </ul>
3	<ul style="list-style-type: none"> <li>Fit the wheel to the wheel balancing machine.</li> <li>Set the wheel balancing machine.</li> </ul>	<ul style="list-style-type: none"> <li>Refits the shock absorber.</li> <li>Secures the shock absorber.</li> </ul>	<ul style="list-style-type: none"> <li>Use a soldering iron.</li> <li>Replaces the brushes in the starter.</li> </ul>
4	<ul style="list-style-type: none"> <li>Balance the wheel.</li> <li>Remove the wheel from the machine.</li> </ul>	<ul style="list-style-type: none"> <li>Removes the hubs.</li> <li>Removes the bearings.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the alternator wiring.</li> <li>Remove the alternator.</li> </ul>
5	<ul style="list-style-type: none"> <li>Remove the fuel filter.</li> <li>Replace the fuel filter.</li> </ul>	<ul style="list-style-type: none"> <li>Wash the wheel bearings.</li> <li>Pack the wheel bearings with grease.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the alternator.</li> <li>Refit the alternator wiring.</li> </ul>
6	<ul style="list-style-type: none"> <li>Replace defective water pipes.</li> <li>Corrects antifreeze levels.</li> </ul>	<ul style="list-style-type: none"> <li>Remove silencer mountings.</li> <li>Remove the silencer box.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the coil.</li> <li>Replace the coil.</li> </ul>
7	<ul style="list-style-type: none"> <li>Remove the clutch.</li> <li>Remove the gear box.</li> </ul>	<ul style="list-style-type: none"> <li>Refit the silencer box.</li> <li>Refit the silencer mountings.</li> </ul>	<ul style="list-style-type: none"> <li>Charge the battery.</li> <li>Test and replace globes.</li> </ul>
8	<ul style="list-style-type: none"> <li>Remove the release bearings.</li> <li>Replace the release bearings.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the engine oil.</li> <li>Replace the engine oil filter.</li> </ul>	<ul style="list-style-type: none"> <li>Check and replace the fan belt.</li> <li>Adjust the fan belt.</li> </ul>
9	<ul style="list-style-type: none"> <li>Remove brake fluid from the braking system.</li> <li>Bleed the braking system.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the air filter.</li> <li>Replace the air filter.</li> </ul>	<ul style="list-style-type: none"> <li>Use a welding apron.</li> <li>Use a welding helmet.</li> </ul>

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week	Grade 5 1 <sup>st</sup> year	Grade 5 2 <sup>nd</sup> year.	Grade 5 3 <sup>rd</sup> year.
2	<ul style="list-style-type: none"> <li>State the purpose of the wheel balancing machine.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the shock absorber.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the starter.</li> </ul>
3	<ul style="list-style-type: none"> <li>State the purpose of the balancing weights.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for replacing shock absorbers..</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the soldering iron.</li> </ul>
4	<ul style="list-style-type: none"> <li>State the reason for balancing a wheel.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the hubs.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the alternator.</li> </ul>
5	<ul style="list-style-type: none"> <li>State the purpose of the fuel system.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for greasing the wheel bearings.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the alternator belt.</li> </ul>
6	<ul style="list-style-type: none"> <li>State the purpose of antifreeze.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the exhaust system.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the coil.</li> </ul>
7	<ul style="list-style-type: none"> <li>State the purpose of the coil.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the exhaust gasket.</li> </ul>	<ul style="list-style-type: none"> <li>State the reasons for testing defective globes.</li> </ul>
8	<ul style="list-style-type: none"> <li>State the purpose of the gear lever.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the engine oil filter.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason why we adjust the fan belt.</li> </ul>
9	<ul style="list-style-type: none"> <li>State reason for replacing brake fluid.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the air filter.</li> </ul>	<ul style="list-style-type: none"> <li>State the reason for using welding protective gear.</li> </ul>

3.2.8 Grade 5:1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> year. Term 4.

Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
1	<b>Good housekeeping</b>	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Practice good housekeeping routines.</li> <li>Realise the impact of poor housekeeping routines.</li> <li>Carry out correct and safe use of cleaning equipment and materials.</li> <li>Report faulty equipment.</li> <li>Ensure cleanliness of workstation and self.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to practice good housekeeping routines.</li> <li>Discusses the impact of poor housekeeping routines.</li> <li>Discusses how to report faulty equipment.</li> <li>Demonstrates how to practice cleanliness and care of equipment.</li> <li>Demonstrates how to use and care for equipment and materials.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the reasons for good housekeeping routines.</li> <li>Clean the workshop.</li> <li>Carry out good housekeeping practices.</li> <li>Clean and care for equipment.</li> <li>Set and record material.</li> <li>Report faulty equipment.</li> </ul>
	<b>Good housekeeping.</b>	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Know how to isolate and replace faulty equipment.</li> <li>Practice safe handling, use and care of tools and equipment.</li> <li>Store tools and equipment correctly after use.</li> </ul>	<b>Grade 5 2<sup>nd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the OSH Act.</li> <li>Discusses relevant safety routines.</li> <li>Discusses the reasons for workstations complying with health and safety requirements.</li> </ul>

Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	HIV/AID  Customer care.	<ul style="list-style-type: none"> <li>Understand the responsibilities of employees with regard to good housekeeping in the workplace.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Explain the rights and responsibilities of employees in the workshop with regards to AIDS.</li> <li>Explain how to prevent the spread of AIDS.</li> <li>Reception of the customer.</li> <li>Courtesy to the customer.</li> <li>After service care.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses and demonstrates how to isolate and replace faulty equipment.</li> <li>Discusses and demonstrates safe handling, use and care of equipment.</li> <li>Demonstrates safety routines.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State why the one must comply with the OSH Act.</li> <li>State the reasons for workstations complying with health and safety requirements.</li> <li>Carry out safety routines.</li> <li>Isolate and replace faulty equipment.</li> <li>Handle, use and care for equipment safely.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the rights and responsibilities of employees in the workplace with regards to AIDS.</li> <li>Discusses how to prevent AIDS.</li> <li>Discusses courtesy and reception of the customer.</li> <li>Discusses after care service.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>State the rights and responsibilities of the employees with regards to AIDS.</li> </ul>





Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Basic welding	<b>Grade 5 3<sup>rd</sup> year.</b> Demonstrate how to carry out basic arc welding.	<ul style="list-style-type: none"> <li>Identify petrol and diesel fuel filters.</li> <li>State the purpose of diesel fuel filters.</li> <li>Replace diesel fuel filters.</li> <li>Bleed the fuel system.</li> </ul> <b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses safety precautions when arc welding.</li> <li>Discusses basic arc welding techniques.</li> <li>Discusses and demonstrates how to connect up the arc welding machine, switch on the machine and do a butt weld.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the arc welding equipment and safety apparel.</li> <li>State the purpose of arc welding.</li> <li>Connect up the arc welding machine.</li> <li>Observe safety precautions when arc welding.</li> <li>Carry out a basic butt weld.</li> </ul>
3	Fundamental engine technology	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Discuss the suspension system.</li> <li>Discuss the steering system.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses safety precautions when working on the suspension and steering systems.</li> <li>Discusses the suspension and steering system.</li> <li>Discusses and demonstrates how to replace suspension rubbers.</li> </ul>

Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	<b>Automotive service</b>	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out major service as follows: Replace/gap spark plug. Replace condenser.</li> </ul>	<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the suspension and the steering systems.</li> <li>State the purpose of the steering and suspension systems.</li> <li>Observe safety precautions when working on the suspension and steering system.</li> <li>Remove and replace the suspension rubbers.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the major service.</li> <li>Discusses the purpose of replacing and gapping the spark plug.</li> <li>Discusses the purpose of replacing the condenser.</li> <li>Demonstrates how to replace and gap the spark plug.</li> <li>Demonstrate how to replace the condenser.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the spark plug, the feeler gauge and the condenser.</li> <li>State the purpose of the spark plug and condenser.</li> <li>Replace and gaps the spark plug.</li> <li>Replace the condenser.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions when gas welding.</li> </ul>
	<b>Basic welding</b>	<b>Grade 5 3<sup>rd</sup> year.</b>	



Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	service	<ul style="list-style-type: none"> <li>Carry out major service as follows:</li> <li>Drain coolant, fill antifreeze and water as per requirements.</li> </ul>	<p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of antifreeze.</li> <li>Discusses safety precautions when working with anti freeze.</li> <li>Discusses and demonstrates how to mix the anti freeze with water.</li> <li>Discusses and demonstrates how to drain old anti freeze and fill a new coolant mixture.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the cooling system and anti freeze.</li> <li>State the purpose of antifreeze and the cooling system.</li> <li>Mix anti freeze with water.</li> <li>Drain the old antifreeze and fill new coolant mix.</li> </ul>
	Basic welding	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Demonstrate how to carry out basic gas brazing techniques.</li> </ul>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions when carrying out basic gas brazing techniques.</li> <li>Demonstrates how to set up the regulating valves and light up the nozzle for gas brazing.</li> <li>Discusses and demonstrates how to carry out gas brazing techniques.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the gas brazing equipment.</li> <li>Observe safety precautions when gas brazing.</li> <li>State what the gas brazing equipment is being used for.</li> </ul>



Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Joining of metal	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Demonstrate the use of a soldering iron and soldering techniques.</li> <li>Use adhesive to join an article.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses safety precautions when using the soldering iron.</li> <li>Discusses safety precautions when using adhesives.</li> <li>Discusses the purpose and use of the soldering iron.</li> <li>Discusses and demonstrates how to use the soldering iron and soldering techniques.</li> <li>Demonstrates how to use adhesives to join an article.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Observe safety precautions when using the soldering iron and adhesives.</li> <li>Identify the soldering iron and adhesives.</li> <li>Switch the soldering iron on.</li> <li>Use the soldering iron.</li> <li>Use the soldering iron.</li> <li>Use adhesives to join an article.</li> </ul>
6	Main electrical components	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine components: Tappet cover. Engine sump.</li> </ul>	<b>Grade 5 1<sup>st</sup> year.</b> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the tappet cover and the engine sump.</li> <li>Discusses and demonstrates how to remove and refit the tappet cover and the engine sump.</li> <li>Discusses and demonstrates how to fit new gaskets and gasket sealer when fitting parts.</li> </ul>

Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	<b>Automotive service</b>	<p><b>Grade 5 2<sup>nd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Carry out a major service as follows:</li> <li>Replace diff oil.</li> </ul>	<p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the tappet cover, engine sump and gaskets.</li> <li>State the purpose of the tappet cover and gasket.</li> <li>Remove and refits the tappet cover.</li> <li>Remove and refits the engine sump.</li> <li>Fit new gaskets and gasket sealer.</li> </ul> <p><b>Grade 5 2<sup>nd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the diff and the purpose of the diff oil.</li> <li>Discusses and demonstrates how to drain and refill diff oil.</li> </ul> <p>The learners complete the following activities.</p> <ul style="list-style-type: none"> <li>Participate in the lesson.</li> <li>Identify the diff and drain plug.</li> <li>State the purpose of diff oil in the diff.</li> <li>Drain and refill diff oil.</li> </ul>
	<b>Hand skills</b>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <ul style="list-style-type: none"> <li>Demonstrate how to cut metal using a hacksaw.</li> </ul>	<p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses and demonstrates how to fit a blade in the hacksaw.</li> <li>Discusses and demonstrates how to mark off and cut metal using a hacksaw.</li> </ul> <p>The learners complete the following activities:</p>







Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Joining of metal	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Use bolts to join components together.</li> </ul>	<ul style="list-style-type: none"> <li>Discusses the purpose of the clutch cable.</li> <li>Discusses and demonstrates how to check and adjust the clutch cable.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the clutch cable.</li> <li>Check and adjust the clutch.</li> </ul> <p><b>Grade 5 3<sup>rd</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the different kinds of bolts.</li> <li>Discusses metric and imperial bolts.</li> <li>Discusses and demonstrates how to use bolts to join components together.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify different types of bolts.</li> <li>State the purpose of bolts.</li> <li>Use bolts to join components and dismantle components.</li> </ul>
9	Automotive components	<b>Grade 5 1<sup>st</sup> year.</b> <ul style="list-style-type: none"> <li>Identify, remove and refit the following engine components; Timing chain Timing gear</li> </ul>	<p><b>Grade 5 1<sup>st</sup> year.</b></p> <p>The teacher:</p> <ul style="list-style-type: none"> <li>Discusses the purpose of the timing chain and timing gear.</li> <li>Discusses and demonstrates how to remove and refit the timing chain and timing gear.</li> </ul> <p>The learners complete the following activities:</p> <ul style="list-style-type: none"> <li>Identify the timing chain and timing gear.</li> </ul>

Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	<b>Automotive service</b>	<b>Grade 5 2<sup>nd</sup> year.</b> <ul style="list-style-type: none"> <li>Carry out the major service as follows:</li> <li>Check/replace brake disc pads and brake shoes.</li> </ul>	<ul style="list-style-type: none"> <li>State the purpose of the timing chain and timing gear.</li> <li>Remove and refit the timing chain and gear.</li> </ul> <b>Grade 5 2<sup>nd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses the purpose of brake disc pads and brake shoes.</li> <li>Discusses and demonstrates how to replace brake disc pads and brake shoes.</li> <li>Discusses safety when replacing brake disc pads and brake shoes.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify brake disc pads and brake shoes.</li> <li>State the purpose of brake disc pads and brake shoes.</li> <li>Observe safety when replacing brake disc pads.</li> <li>Replace brake disc pads.</li> </ul>
	<b>Specialist hand tools</b>	<b>Grade 5 3<sup>rd</sup> year.</b> <ul style="list-style-type: none"> <li>Use a tap and die to cut threads.</li> <li>Use a thread file to clean threads on a bolt.</li> </ul>	<b>Grade 5 3<sup>rd</sup> year.</b> The teacher: <ul style="list-style-type: none"> <li>Discusses and demonstrates how to use and care for taps and dies.</li> <li>Discusses the purpose of the thread file.</li> <li>Discusses how to use the thread file.</li> <li>Demonstrates how to use the thread file.</li> </ul> The learners complete the following activities: <ul style="list-style-type: none"> <li>Identify the tap and die set.</li> </ul>

Grade 5: Term 4			
Week	Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			<ul style="list-style-type: none"> <li>• Identify the thread file.</li> <li>• State the purpose of the tap and die set.</li> <li>• State the purpose of the thread file.</li> <li>• Drill a hole for tapping threads.</li> <li>• Tap threads in the hole.</li> </ul>

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Term 4.

Assessment is formally recorded during four (4) practical sessions with a minimum of four (4) skills reported. Learners, regardless of abilities, shall be assessed on the same skill. The following serves as suggestion of skills to record and report on.

Week	Grade 5 1 <sup>st</sup> year	Grade 5 2 <sup>nd</sup> year	Grade 5 3 <sup>rd</sup> year
2	<ul style="list-style-type: none"><li>• Show the different rim sizes.</li><li>• Show the different tyre sizes.</li></ul>	<ul style="list-style-type: none"><li>• Replace the diesel fuel filter.</li><li>• Bleed the fuel system.</li></ul>	<ul style="list-style-type: none"><li>• Connect the arc welding machine.</li><li>• Carry out a basic butt weld.</li></ul>
3	<ul style="list-style-type: none"><li>• Remove the suspension rubber.</li><li>• Replace the suspension rubber.</li></ul>	<ul style="list-style-type: none"><li>• Remove the spark plug.</li><li>• Gap and replace the spark plug..</li></ul>	<ul style="list-style-type: none"><li>• Light the welding gas nozzle.</li><li>• Carry out a simple gas weld.</li></ul>
4	<ul style="list-style-type: none"><li>• Use a multi-meter to fault find.</li><li>• Fix the electrical fault.</li></ul>	<ul style="list-style-type: none"><li>• Drain the anti freeze.</li><li>• Fill correct fix of coolant/anti freeze.</li></ul>	<ul style="list-style-type: none"><li>• Light up the brazing gas nozzle.</li><li>• Carry out a simple gas brazing.</li></ul>
5	<ul style="list-style-type: none"><li>• Remove the engine mounting.</li><li>• Replace the engine mounting.</li></ul>	<ul style="list-style-type: none"><li>• Drain the gear box oil.</li><li>• Fill up the gear box oil.</li></ul>	<ul style="list-style-type: none"><li>• Switch the soldering iron on and off.</li><li>• Use the soldering iron.</li></ul>
6	<ul style="list-style-type: none"><li>• Remove the tappet cover.</li><li>• Refit the tappet cover.</li></ul>	<ul style="list-style-type: none"><li>• Drain the diff oil.</li><li>• Refill the diff oil.</li></ul>	<ul style="list-style-type: none"><li>• Fit a blade in the hacksaw.</li><li>• Cut metal with the hacksaw.</li></ul>
7	<ul style="list-style-type: none"><li>• Remove the cylinder head.</li><li>• Refit the cylinder head.</li></ul>	<ul style="list-style-type: none"><li>• Replace automatic transmission oil.</li><li>• Replace the automatic transmission filter.</li></ul>	<ul style="list-style-type: none"><li>• Switch the cut off saw on and off.</li><li>• Cut metal with the cut off saw.</li></ul>
8	<ul style="list-style-type: none"><li>• Remove the timing belt.</li><li>• Replace the timing belt.</li></ul>	<ul style="list-style-type: none"><li>• Check the clutch.</li><li>• Adjust the clutch.</li></ul>	<ul style="list-style-type: none"><li>• Use bolts to join components.</li><li>• Dismantle the components.</li></ul>
9	<ul style="list-style-type: none"><li>• Remove timing chain/gear.</li><li>• Replace the timing gear.</li></ul>	<ul style="list-style-type: none"><li>• Remove disc pad.</li><li>• Replace the disc pads.</li></ul>	<ul style="list-style-type: none"><li>• Drill a hole in a thick metal.</li><li>• Cut threads in the metal hole.</li></ul>

Theoretical assessment: Term 4.

Four theoretical activities are assessed and recorded, however, a minimum of 1 theoretical activity is reported on. The following serves as suggestions of theoretical activities to report on.

Week	• Grade 5 1 <sup>st</sup> year	• Grade 5 2 <sup>nd</sup> year	• Grade 5 3 <sup>rd</sup> year
2	• State how to prolong tyre life.	• State the purpose of diesel filters.	• State the purpose of arc welding equipment.
3	• State the purpose of the suspension and steering system.	• State the purpose of the spark plugs and condenser.	• State the purpose of gas welding equipment.
4	• State the purpose of the electrical system.	• State the purpose of antifreeze in the cooling system.	• State the purpose of gas brazing.
5	• State the purpose of the engine mountings.	• State the purpose of gear box oil.	• State the purpose of the soldering iron.
6	• State the purpose of the tappet cover.	• State the purpose of diff oil.	• State the purpose of the hacksaw.
7	• State the purpose of the cylinder head.	• State the purpose of the engine oil filter.	• State the purpose of the cut off saw.
8	• State the purpose of the timing belt.	• State the reason why we adjust the clutch cable.	• State the reason why we bolts to join components together.
9	• State the purpose of the timing chain.	• State the purpose of the brake disc pads.	• State the purpose of the tap and die.

## 4 SECTION 4

### ASSESSMENT

Subject specific content to be added to generic section 4 after public comment changes/corrections have been made.

Assessment across the 5 years

Grade 4 – Practical assessment tasks

Task	Week	Grade 4 1 <sup>st</sup> year	Grade 4 2 <sup>nd</sup> year
Term 1			
1	Week 2 or 3	Use a ring spanner. Use a combination spanner	Switch a hand drill on and off. Fit and remove a drill bit to the drill chuck.
2	Week 4 or 5	Use a ratchet. Use a flat and star screwdriver.	Switch the cut off saw on and off. Carry out a straight cut with a cut off saw
3	Week 6 or 7	Use a file. Clean a file with a file brush.	Switch the bench grinder on and off. Grind a piece of metal
4	Week 8 or 9	Set up a torque wrench. Use a torque wrench	Operate an engine hoist to lift an engine. Operate a four post hoist.
Term 2			
1	Week 2 or 3	Set rings on a piston Use a ring squeezer.	Set up an arc welding machine. Switch the arc welding machine on.
2	Week 4 or 5	Use a measuring tape. Use a steel ruler.	Strike a long weld. Weld two plates.

3	Week 6 or 7	Draw a sketch of a typical engine layout. Make a mini model vehicle with an engine.	Adjust the regulator valves. Light up the welding nozzles.
4	Week 8 or 9	Compile a collage of pictures of different types of vehicles. Draw a vehicle with a petrol powered engine and a vehicle with a battery powered motor.	Jack up a vehicle. Remove and refit a tyre.
Term 3			
1	Week 2 or 3	Mixes fuel for a 2 stroke engine. Start up a 2 stroke engine.	Support the gear box with a jack. Removes the gear box.
2	Week 4 or 5	Fit the cylinder head. Torque the cylinder head.	Remove the clutch plate. Remove the pressure plate.
3	Week 6 or 7	Fit fender covers. Fit seat, floor and steering covers.	Adjust the clutch cable. Bleed the clutch slave cylinder
4	Week 8 or 9	Replace a spark plug. Gap a spark plug.	Remove the starter. Refit the starter.
Term 4			
1	Week 2 or 3	Check and top up the engine oil. Check and top up coolant and other fluid levels.	Remove the alternator. Refit the alternator.
2	Week 4 or 5	Remove and replace globes. Remove and replace headlight globes.	Replace the wiper blades. Adjust the wiper blades.
3	Week 6 or 7	Switch a vacuum on and off. Vacuum a vehicle.	Use a welding helmet. Use welding safety apparel.



4	Week 8 or 9	Wash a vehicle's mag rims. Polish and shine a vehicle's mag rims.	Connect and disconnect the pipes and regulators in gas welding equipment. Blow out nozzles after use.
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#### Grade 4 terms 1 – 4: Theoretical assessment tasks

Evidence of one theoretical task of formal assessment between weeks 2 – 09 as in the annual teaching plan must be available for quality assurance.

#### Grade 5 – Practical assessment tasks

Task	Week	Grade 5 1 <sup>st</sup> year	Grade 5 2 <sup>nd</sup> year	Grade 5 3 <sup>rd</sup> year
Term 1				
1	Week 2 or 3	Remove the brake return springs Refit the brake return springs.	Remove the front pulley. Refit the front pulley.	Adjust the handbrake inside the vehicle. Adjust the handbrake under the vehicle.
2	Week 4 or 5	Grind a valve with rough grinding paste. Grind a valve with fine grinding paste.	Fit a piston in a cylinder bore. Remove the piston from the cylinder bore.	Fit the timing belt. Remove the timing belt
3	Week 6 or 7	Fit the honing tool in the hand drill. Use the honing tool.	Remove a welsh plug. Replace the welsh plug.	Remove suspension bushes. Replace suspension bushes.

4	Week 8 or 9	Use a bearing pulley. Remove a bearing.	Hone cylinder bore. Control speed of drill when honing.	Rock the tappets. Adjust the tappets.
Term 2				
1	Week 2 or 3	Use a vernier calliper. Use a digital vernier calliper.	Remove brake disc pads. Refit brake disc pads	Check tyre pressure. Adjust tyre pressure.
2	Week 4 or 5	Set up a dial gauge. Use a dial gauge	Remove brake slave cylinder. Refit brake slave cylinder.	Checks loose nuts and bolts. Tightens loose nuts and bolts.
3	Week 6 or 7	Fit the wheel onto the tyre changing machine. Removes the tyre from the rim.	Remove the ball joint from the tie rod. Refit the ball joint onto the tie rod.	Remove the battery. Refit the battery.
4	Week 8 or 9	Inflate a tyre. Check for and repairs leaks.	Remove the front hub. Remove the CV joint.	Disconnect the battery. Remove the starter.
Term 3				
1	Week 2 or 3	Connects up the wheel balancing machine. Switches the machine on and off.	Checks for defective shock absorbers. Removes the shock absorber.	Strips the starter. Removes the brushes from the starter.
2	Week 4 or 5	Balance the wheel. Remove the wheel from the machine.	Removes the hubs. Removes the bearings.	Remove the alternator wiring. Remove the alternator.
3	Week 6 or 7	Replace defective water pipes. Corrects antifreeze levels.	Remove silencer mountings. Remove the silencer box.	Remove the coil. Replace the coil.

4	Week 8 or 9	Remove the release bearings. Replace the release bearings.	Replace the engine oil. Replace the engine oil filter.	Check and replace the fan belt. Adjust the fan belt.
Term 4				
1	Week 2 or 3	Show the different rim sizes. Show the different tyre sizes.	Replace the diesel fuel filter. Bleed the fuel system.	Connect the arc welding machine. Carry out a basic butt weld.
2	Week 4 or 5	Use a multi-meter to fault find. Fix the electrical fault.	Drain the anti freeze. Fill correct fix of coolant/anti freeze.	Light up the brazing gas nozzle. Carry out a simple gas brazing.
3	Week 6 or 7	Remove the tappet cover. Refit the tappet cover.	Drain the diff oil. Refill the diff oil.	Fit a blade in the hacksaw. Cut metal with the hacksaw.
4	Week 8 or 9	Remove the timing belt. Replace the timing belt.	Check the clutch. Adjust the clutch.	Use bolts to join components. Dismantle the components.

#### Grade 5 terms 1 – 4: Theoretical assessment tasks

Evidence of one theoretical task of formal assessment between weeks 2 – 09 as in the annual teaching plan must be available for quality assurance.

PUBLIC COMMENT