

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

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;

1 5	
1 x teachers table and chair	1 x set steel chisels
• 4 x lockable cupboards	• 4 x set star and flat screwdrivers
• 2 x 4/5 shelf open shelving	2 x stanley knife
• 4 x workbenches	• 4 x scrapers
• 16 x bench vices (4 on each table)	• 2 x riveting gun
• 2 x welding screen	• 4 x G clamps
• 1 x wash basin	• 4 x vice grips
• 2 x Plug points for two phase welding	4 x water pump pliers
equipment	4 x long nose pliers
• 5 x two phase plug points.	4 x combination pliers
• 2 x inverter welding machines	4 x inside circlip pliers
1 x wall mounted drill press	• 4 x side cutters
1 x bench grinder	• 2 x stilson wrench
1 x hydraulic press	• 4 x small adjustable wrench
• 2 x trolley jacks	• 4 x large adjustable wrench
1 x Tyre changing machine	• 4 x set combination spanners 6mm-
• 1 x wheel balancing machine	32mm
1 x engine hoist	• 1 x set open end spanners 6mm-32 mm
 1 x 4 post hoist 	• 4 x complete socket set (includes
1 x battery charger	ratchet, power bar etc) 8mm -32 mm
• 1 x multi-meter	4 x set metric allen keys
• 4 x hydrometer	2 x scissors
• 4 x feeler gauges	• 15 x flat files
• 4 x timing light	• 4 x round file
• 4 x mechanics creeper	• 4 x triangular file
• 1 x mechanics stethoscope	• 4 x half round file
• 4 x digital vernier	• 4 x square file

• 4 x set microscope	• 15 x hacksaws
• 4 x straight edge	• 2 x junior hacksaws
• 4 x tap and die set	• 2 x coping saw
• 4 x valve spring compressor	• 2 x steel dividers
• 4 x piston ring squeezer	• 4 x set plug spanners
• 4 x engine bore honing tool	• 4 x oil filter wrench
• 1 x gear puller	• 4 x bottle jacks
• 4 x prybars	4 x wheel spanner
 1 x 5 metre measuring tape 	• 2 x lead light
• 2 x hand drill	2 x steel brush
• 1 x angle grinder	• 4 x automatic welding helmets
 2 x electrical multi-tester 	• 1 x Set small gas bottles with
1 x crimping tool	attachments
• 1 x claw hammer	• 4 x tin snips
8 x ball pein hammers 200g	 1 x extension cord(10 metres)
• 4 x club hammer	• 2 x steel rules
• 4 x rubber mallet	2 x scriber
• 4 x gasket making hammers	• 2 x tyre pressure gauge
 1 x set centre punches 	4 x torque wrench
 1 x set bell punches 	• 2 x fire extinguishers
	 shadow boards to hang tools

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	Grade 4	Grade 5
	TOPICS	The learner must be able to:	The learner must be able to:
1	Workshop	Identify and remove potential hazards.	Understand the implications of exposure to hazardous
	health and	• Understand the implications of exposure to hazardous	substances and hazards and the prevention of thereof.
	safety	substances and hazards.	 Implement health and safety plans.
			Identify, care and use of protective clothing.
		 Implement health and safety plans. 	Implement statutory requirements.
		Comply with the use of protective clothing.	Identify the location of fire extinguishers hoses and
		Observe statutory requirements.	alarms.
			 Identify, care and use of fire extinguishers.
			Observe procedures for emergencies.
			Report accidents and injuries.
2	Good	 Practice cleanliness and care of equipment. 	Practice good housekeeping routines.
	housekeeping		Realise the impact of poor housekeeping routines.

TOPICS	Grade 4	Grade 5
TOPICS	The learner must be able to:	The learner must be able to:
practices	 Observe safe use of cleaning equipment and materials. Report faulty equipment Keep the workshop clean. Practice relevant safety routines Practice safe handling and use of tools and equipment. Practice cleanliness and tidiness of workshop. 	 Carry out correct and safe use of cleaning equipment an materials. Report faulty equipment Ensure cleanliness of workstation and self. Check equipment and tools for safe and effective Check equipment for safe and effective Set tools and equipment to specification. Set tools and equipment in sequence. Practice good housekeeping and the impact of poor housekeeping. Observe organisational housekeeping policies and procedures. Comply with housekeeping procedures and policies. Identify and report shortcomings in housekeeping practices. Comply with relevant safety routines. Ensure that workstations conform to health and safety requirements. Know how to isolate and replace faulty equipment. Practice cleanliness and tidiness of workshop. Store tools and equipment correctly after use.

	TOPICS	Grade 4	Grade 5
	TOPICS	The learner must be able to:	The learner must be able to:
			Understand the responsibilities of employees with regard
			to good housekeeping in the workplace.
3	HIV/AIDS	Explain the transmission of HIV/AIDS.	Explain the rights and responsibilities of employees in the
		Take precautions to prevent the transmission of AIDS.	workshop with regards to AIDS.
		Practice basic first aid.	 Explain how to prevent the spread of AIDS.
4	Tools		
	Basic hand	Identify, care and use of the following basic hand tools:	
	tools	1. combination spanners	
		2. ring spanners	
		3. open ended spanners	
		4. wheel spanners	
		5. shifting spanners	
		6. socket spanner	
		7. Stilson wrench	
		8. sockets sets	
		9. screwdrivers	
		10. pliers,	
		11. vice grips	
		12. hammers	
		13. hacksaws	
		14. files	
		15. chisels	
		16. punches	
		17. Allen keys	

TOPICS	Grade 4	Grade 5
TOPICS	The learner must be able to:	The learner must be able to:
Specialist	Identify, care and use of:	Identify, care and use of the:
hand tools	1. The torque wrench	1. Brake spring pliers
	2. The piston ring compressor	2. Valve spring lifter
	3. The piston ring spreader	3. Valve grinder
	4. Taps and dies.	4. Timing light
		5. Bearing puller
		6. Stud remover
		7. Piston ring groove cleaner
		8. Cylinder hone
Power tools	Identify, care and use of a:	
	1. Hand drill	
	2. Angle grinder	
	3. Cut off saw	
Measuring	Identify, care and use of a:	Identify, care and use of a:
instruments	1. Measuring tape	1. Digital vernier calliper
	2. Steel rule	2. Digital micrometer
	3. Feeler gauge	3. The dial gauge.
	4. Straight edge	
Garage	Identify, care and use of the :	Identify, care and use of the:
Equipment	1. Drill press	1. Tyre changing machine
	2. Bench grinder	2. Wheel balancing machine
	3. Lifting equipment	3. Battery charger
	4. Hydraulic press	
	5. Arc welding machine	

	TOPICS	Grade 4	Grade 5
	TOPICS	The learner must be able to:	The learner must be able to:
		6. Gas welding equipment	
7	Fundamental	Understand vehicle layout	Discusses the fuel system
	engine	Discusses/understand the internal reciprocating engine	Discuss the ignition system
	technology	Discusses petrol, diesel and alternative fuel vehicles.	 Discuss cooling and lubrication of an engine
		Discusses the four stroke cycle	Discuss the clutch
		Discusses the two stroke cycle	Discuss the gearbox
			Discuss the transmission system
			Discuss the braking system
			Discuss wheels and tyres
			Discuss the suspension system
			Discuss the steering system
			Discuss the electrical system
			Discuss the exhaust system
8	Automotive	Identify, remove and refit a wheel.	Identify, remove and refit an engine.
	components	Identify, remove and refit the following engine	Identify, remove and refit the following engine
		components:	components:
		1. Tappet cover	1. Tappet cover
		2. Engine sump	2. Engine sump
		3. Cylinder head	3. Cylinder head
		4. Inlet manifold	4. Flywheel
		5. Exhaust manifold	5. Front pulley
			6. Timing belt/chain/gear
			7. Water pump

ust be able to:
ust be able to: shaft higs haft pump mp n plugs fy, remove, grind and refit valves in the cylinder a engine cylinder bore fy, remove and refit the radiator. fy, remove and refit the brake disc pads. fy, remove and refit the brake shoes. fy, remove and refit the brake shoes the piston rake shoe cylinder as well as hone the shave er. fy, remove and refit the ball joints in a tie/track rod. fy, remove and refit a Mac Pherson or similar strut. fy, remove and refit a C.V. joint or a prop shaft. fy, remove and replace a shock absorber.
ntif br nde ntif ntif

	TOPICS	Grade 4	Grade 5
	TOFICS	The learner must be able to:	The learner must be able to:
)	Automotive	State what a basic or minor service is.	State what a major service is.
	service	Plan and prepare for a minor service.	Plan and prepare for a major service.
		Carry out a minor service as follows:	Carry out the major service as follows:
		1. Replace engine oil and engine oil filter.	1. Replace engine oil and engine oil filter.
		2. Check/replace air filter	2. Replace air filter.
		3. Gap/replace spark plugs.	3. Replace fuel filters.
		4. Gap/replace points.	4. Replace/gap spark plugs.
		5. Replace condenser	5. Replace condenser.
		6. Check/top up all fluid levels	6. Drain coolant, fill antifreeze and water as per
		7. Carry out further checks as per check sheet.	requirements.
			7. Replace gear box oil.
			8. Replace diff oil.
			9. Change filter in an automatic gearbox.
			10. Check/adjust clutch cable.
			11. Check/replace brake disc pads and brake shoes.
			12. Adjust handbrakes.
			13. Check/replace timing belt.
			14. Check/replace/adjust fan belt.
			15. Check/replace suspension bushes.
			16. Check/replace wiper blades.
			17. Check/adjust tappets.
			18. Check/adjust engine timing.
			19. Check tyre pressure and thread depth.
			20. Check/repair water leaks.

	TOPICS	Grade 4	Grade 5
	TOPICS	The learner must be able to:	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	Inspection and	Top up all oils and coolant levels	Grease all grease nipples.
	lubrication		
11	Basic auto	Observe safety practices and protocols when working on	Observe safety practices and protocols when working on
	electrical.	the auto electrical system and the battery.	the auto electrical systems
	The main	State the reasons for the auto electrical system.	
	electrical	State the purpose of the main electrical components as	
	components.	follows:	
	The battery.	1. The battery	Remove and replace a battery.
		2. The fuse box	Replace blown fuses.
		3. The wiring system	Use a strip connector.
	Testing and	4. The starter	Remove and replace a starter.
	renewal of		Replace brushes on a starter.
	globes.	5. The alternator	Remove and replace an alternator.
		6. The distributor	Remove and replace a distributor.
	The multi-	7. The coil	Remove and replace a coil.
	meter.	8. The ignition system	Replace wiper blades.
		9. The wipers	Charge the battery
		 State the purpose and types of battery. 	
		Use a hydrometer to test the battery.	
		Make an electrolyte mix for the battery.	Test and replace globes.

	TOPICS	Grade 4	Grade 5
	TOPICS	The learner must be able to:	The learner must be able to:
		Replace globes.	Use a multi-meter for basic checks
			Check/replace/adjust a fan belt.
2	Basic	State the different methods of joining metal.	Understand safety precautions when welding.
	welding/joining	Identify different types of metal.	State protective accessories when welding.
	of metals/basic	Observe safety rules when using welding equipment.	Demonstrate how to carry out basic arc welds.
	hand skills	Identify, care and use of Arc welding equipment	Demonstrate how to carry out basic welding and brazing
		Identify care and use of gas welding equipment.	techniques.
			Demonstrate drilling procedures.
			Demonstrate the use of a soldering iron and soldering
			techniques.
			• Demonstrate the use of a riveting gun.
		• File a round bar to a square bar.	Use adhesive to join an article.
		Use cross filing and draw filing techniques	Demonstrate how to cut metal using a hacksaw
			Demonstrate how to cut metal using a cut off saw
			Use bolts to join components together.
			Use a tap and die to cut threads
			• Use a thread file to clean threads on a bolt.
3	Auto valet	Understand the reasons for washing a vehicle.	Polish a vehicle.
		Know how to wash a vehicle with detergents.	Clean mag rims.
		Vacuum a vehicle.	Polish a car tyre.
			• Wash the engine compartment.
4	Customer care		Practise reception of the customer
			Practise courtesy to the customer

	TOPICS	Grade 4	Grade 5
	TOPICS	The learner must be able to:	The learner must be able to:
			Practise after service care
15	World of	Practice good work habits- personal presentation.	Prepare for a job interview.
	work/learner	Practice good work habits-social presentation.	Work with competence.
	work	State the various types of jobs available.	Show good work tolerance.
	experience	• State the basic requirements for different types of jobs.	Practice appropriate social skills training.
	programme		Identify and understand the opportunities in the open
			labour market.
			Perform personal management/activities for daily living.
			Participate in the learner work experience programme
			(LWEP).
			Understand benefits and conditions for the worker in the
			world of work.
			Identify the criteria for the learner work experience
			programme.
16	Driver training	Understand the need for a learner's and drivers licence.	Know how to book for the learner's test.
		Know the age to book for a learner's test.	Know what to expect for a learner's test.
			• Know what to take when booking for a learner's test.
			Know what disqualifies a person from obtaining a learner's
			licence.
			• Know what a learner's licence allow a person to do.
			• Learn the K53 rules of the road and road signs.

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	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
1	Workshop	Grade 4 1 st year.	Grade 4 1 st year
	health and	Understand the subject name and field	The teacher :
	safety	 Identify and remove potential hazards. 	Discusses the benefit of the subject to the learner
		• Understand the implications of exposure to	Discusses the expectations of the teacher and learner
		hazardous substances.	Points out safety hazards
		Identify protective clothing.	The learners complete the following activities:
			Dress in protective clothing
			Clean the workshop
			Comply with the rules of the workshop.
			Identify and remove potential hazards.

		Grade 4	: Term 1
Wk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Good housekeeping practices	 Grade 4 2nd year Practice safe handling and use of tools and equipment. Practice cleanliness and tidiness of workshop. 	 Grade 4 2nd year The teacher: Discusses hazards, safety routines, cleanliness, tidiness etc. with the learners. Shows relevant movies, slides, magazines, books, worksheets and poster to learners. The learners complete the following activities: Handle and care for tools and equipment safely. Participate in cleaning activities within the workshop and practices what the teacher has discussed.
2	Basic hand tools	Grade 4 1 st year. Identify, care and use the following basic hand tools: Combination spanners Ring spanners Open ended spanners	 Grade 4 1st year. The teacher: Discusses and demonstrate the different types and makes of combination spanners, ring spanners and open ended spanners. Discusses the materials that spanners are made from. Discusses the imperial and metric spanners. Discusses and demonstrate the use and care of the spanners. Discusses the incorrect use and damage to spanners. The learners complete the following activities: Name the different types, makes and sizes of spanners. State the different types of spanners. Take care of the spanners.

		Grade 4	: Term 1
Wk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Grade 4 2 nd year.
	Power tools	Grade 4 2 nd year.	The teacher:
		Identify, care and use of a :	Discusses the purpose of the hand drill.
		Hand drill	Discusses and demonstrates the care and use of the hand drill.
			Discusses the hammer function in the drill.
			Discusses proper positioning of the drill bit.
			The learners complete the following activities:
			Participate in the discussion.
			State the purpose of the drill.
			Switch the drill on and off.
			Fit a drill bit to the chuck.
			Drill a hole using the drill.
			Use the hammer function in the drill.
			Remove the drill bit from the drill and cleans and puts drill away.
3	Basic hand	Grade 4 1 st year.	Grade 4 1 st year.
	tools	• Identify, care and use of the following basic	The teacher:
		hand tools:	• Discusses the wheel spanner, shifting spanner, socket spanners and
		Wheel spanners	stilson wrench.
		Shifting spanners	 Discusses and demonstrates the care and use of each tool.
		Socket spanners	The learners complete the following activities:
		Stilson wrench	Identify each tool by name.
			State the purpose of each tool.
			Demonstrate use and care of each tool.

		Grade 4	4 : Term 1	
Wk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
	Power tools	Grade 4 2 nd year.		
		Identify, care and use of a :	Grade 4 2 nd year.	
		Angle grinder	The teacher:	
			Discusses and demonstrates the care and use of the angle grinder.	
			 Discusses and demonstrates the safety aspects when using the angle grinder. 	
			 Discusses and demonstrates how to replace the disc on the angle 	
			grinder.	
			 Discusses the steel cutting and grinding disc. 	
			The learners complete the following activities:	
			Identify the angle grinder.	
			• State and complies with safety precautions when using the angle grinder.	
			 Switch the angle grinder on and off. 	
			Change the disc on the angle grinder.	
			Cut steel with the angle grinder.	
			Grind steel with the angle grinder.	
			Clean and store the angle grinder.	
4	Basic hand	Grade 4 1 st year.	Grade 4 1 st year.	
	tools	Identify, care and use the following basic hand	The teacher:	
		tools:	• Discusses and demonstrates the care and use of the socket set,	
		Socket sets	screwdrivers, pliers and vice grips.	
		Screwdrivers	• Discusses and demonstrates when and why we use the power bar and	
		Pliers	ratchet.	

		Content	: Term 1
Nk	Торіс	The learner must be able to:	Teaching tips, techniques, activities and resources.
		Vice grips	The learners complete the following activities:
			 Identify the names of the tools.
			• State the correct use of the power bar and ratchet.
			• Demonstrate the correct use of the power bar and the ratchet.
			• Demonstrate the use and care of each tool.
	Power tools	Grade 4 2 nd year.	Grade 4 2 nd year.
		Identify, care and use of a:	The teacher:
		Cut off saw	 Discusses and demonstrates the care and use of the cut off saw.
			 Discusses safety aspects when using the cut off saw.
			Discusses and demonstrates how and why to change the disc.
			Discusses and demonstrates how to carry out a straight and mitre c
			with the cut off saw.
			The learners complete the following activities:
			Identify the cut off saw.
			 Practice safety aspects when using the cut off saw.
			Switch the cut off saw on and off.
			Change the disc on the cut off saw.
			Carry out a straight cut on the cut off saw.
			Clean and store the cut off saw away.
,	Basic hand	Grade 4 1 st year.	Grade 4 1 st year.
	tools	Identify, care and use the following basic hand	The teacher:
		tools:	• Discusses and demonstrates the care and use of the hammer and

			: Term 1
Wk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Hammers	hacksaw.
		Hacksaws	Discusses the different types of hammers.
			 Discusses the uses of different types of hammers.
			 Demonstrates how to change a blade on a hacksaw.
			The learners complete the following activities:
			 Identify the different hammers and the hacksaws.
			 Practice safety aspects when using the tools.
			 Use the different types of hammers.
			Use a hacksaw.
			Replace the blade in the hacksaw.
			Grade 4 2 nd year.
	Garage	Grade 4 2 nd year.	The teacher:
	Identify, care and use of a: Drill press		Discusses and demonstrates the care and use of the drill press.
		 Discusses how to adjust the height of the working surface of the dri 	
		press.	
			 Discusses drill speeds and need for a coolant.
			 Demonstrates how to adjust the work surface of the drill press.
			The learners complete the following activities:
			Identify the drill press.
			Practice safety when using the drill press.
			Switch the drill press on and off.
			Fit and remove a drill bit to the chuck.
			 Adjust the working surface of the drill press.

Vk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Drill an object.
			Clean the drill press and surrounding areas.
6	Basic hand	Grade 4 1 st year.	Grade 4 1 st year.
	tools	Identify, care and use the following basic hand	The teacher:
		tools:	Discusses safety when filing.
		Files	 Discusses the different types of files used.
			• Discusses and demonstrates how to clean files using a file brush.
			 Demonstrates how to use and store a file.
			The learners complete the following activities:
			Name the different types of files.
			 Practice safety when using the file.
			• Use a file.
		Clean the file using a file brush.	
			Store the file away.
			Clean up the working area.
			Grade 4 2 nd year.
			The teacher:
	Garage	Identify, care and use of a:	Discusses and demonstrate care and use of the bench grinder.
	equipment	Bench grinder	Discusses and demonstrate how to change a grinding wheel.
			• Discusses and demonstrate why and how to true a grinding wheel.
			The learners complete the following activities:
			Identify the bench grinder.

	_ .	Grade 4	
Nk	Торіс	The learner must be able to:	Teaching tips, techniques, activities and resources.
			 Practice safety when using the bench grinder.
			 Switch the bench grinder on and off.
			Grind a piece of metal on the bench grinder.
7	Basic hand	Grade 4 1 st year.	Grade 4 1 st year.
	tools	• Identify, care and use of the following basic	The teacher:
		hand tools:	Discusses and demonstrates care and use of chisels, punches and Alle
		Chisels	keys.
		Punches	 Discusses the different types of chisels, punches and Allen keys.
		Allen keys	 Discusses metric and imperial Allen keys.
			The learners complete the following activities:
			Participate in the lesson.
			Identify chisels, punches and Allen keys.
			Practice safety when using chisels and punches.
			 Use a chisel, punch and Allen key
	Garage	Grade 4 2 nd year.	Grade 4 2 nd year.
	equipment	• Identify, care and use of the following lifting	The teacher:
		equipment:	Discusses and demonstrates care and use of jacks and axle stands.
		Jacks	 Discusses safety precautions when using jacks and axle stands.
		Axle stands	 Discusses the operation of jacks and axle stands.
			The learners complete the following activities:
			 Identify jacks and axle stands.
			 State the purpose of jacks and axle stands.

Nk	Торіс	Content The learner must be able to:	 Term 1 Teaching tips, techniques, activities and resources.
			Use a jack to jack up a vehicle.
			Use axle stands to support a car.
			Observe safety precautions when using jacks and axle stands.
	Specialist hand	Grade 4 1 st year:	Grade 4 1 st year.
	tools	 Identify, care and use of: 	The teacher:
		The torque wrench	Discusses and demonstrates the care and use of a torque wrench.
			Discusses metric and imperial torque wrenches.
			 Discusses the different types of torque wrenches.
			The learners complete the following activities:
			Identify the torque wrench.
			State the different types of torque wrenches.
			State how to care and use a torque wrench.
		Identify the imperial and metric torque wrenches.	
		Set and use a torque wrench.	
	Garage	Grade 4 2 nd year:	Grade 4 2 nd year.
	• Identify, care and use of the following lifti	The teacher:	
		equipment:	Discusses and demonstrates the use and care of engine hoists, four pre-
	Engine hoists Four post hoist Other lifting equipment	-	hoist and other lifting equipment.
			Discusses the safety aspects when using these equipment.
		Other lifting equipment	Discusses maximum weights that can be lifted.
			Demonstrates how to use other lifting equipment.
			The learners complete the following activities:

			e 4 : Term 1
Wk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Identify the engine hoist, the four post hoist and other lifting equipment.
			State the purpose of the lifting equipment.
			Practice safety procedures when using lifting equipment.
			• Operate an engine hoist, four post hoist and other lifting equipment.
	Specialist hand	Grade 4 1 st year.	Grade 4 1 st year.
	tools	Identify, care and use of:	The teacher:
		The piston ring compressor	Discusses and demonstrates how to use and care for the ring squeeze
			• Demonstrates the position of the ring gaps on the piston when fitting
			piston.
			The learners complete the following activities:
			Identify the ring squeezer.
			Set the rings in the piston.
			Oil the piston and the inside of the ring squeezer.
		Fit a piston using a ring squeezer.	
			Clean the ring squeezer and prepares ring squeezer for storage.
	Garage	Grade 4 2 nd year.	
	equipment	 Identify, care and use of a: 	Grade 4 2 nd year.
		Hydraulic press	The teacher:
			Discusses and demonstrates care and use of the hydraulic press.
			The learners complete the following activities:
			Identify the hydraulic press.
			State the purpose of the hydraulic press.
			Set up the hydraulic press.

	Grade 4 : Term 1			
Wk	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
			Use the hydraulic press.	

Assessment 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.			
Grade 4 2 nd year			
Switch a hand drill on and off.			
• Fit and remove a drill bit to the drill chuc			
• Switch the angle grinder on and off.			
Grind a piece of metal.			
• Switch the cut off saw on and off.			
Carry out a straight cut with a cut off sav			
Switch the drill press on and off.			
Drill a hole.			
• Switch the bench grinder on and off.			
Grind a piece of metal			
Use a jack to jack up a vehicle.			
Use an axle stand.			
Operate an engine hoist to lift an engine			
Operate a four post hoist.			
Adjust the working surface of a hydraulic			
Operate a hydraulic press.			
ever, a minimum of 1 theoretical activity is rep			
Grade 4 2 nd year			
State the purpose of a hand drill.			
• State the purpose of the angle grinder.			
State the purpose of the cut off saw.			
 State the purpose of the cut off saw. State the purpose of a drill press. 			
State the purpose of a drill press.			
State the purpose of a drill press.State the purpose of a bench grinder.			

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

3.2.2	Grade 4 : 1st ye	ear and 2nd year . Term 2	: Term 2
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
1	Good	The learner must be able to: Grade 4 1 st year.	Grade 4 1 st year.
	housekeeping	 Implement health and safety plans. 	The teacher:
	practices	Comply with the use of protective clothing.	 Discusses how to implement health and safety plans.
	-	Observe statutory requirements.	Discusses the use of protective clothing.
			Discusses how to observe statutory requirements.
			The learners complete the following activities:
			State how to implement health and safety plans.
			Use protective clothing.
			Observe statutory requirements.
	HIV/AIDS	Grade 4 2 nd year.	Grade 4 2 nd year.
		• Explain the transmission of AIDS.	The teacher :
		Take precautions to prevention of AIDS.	Discusses AIDS and how it is transmitted.
		Practice first aid.	Discusses how to take precautions against AIDS.
			Discusses and demonstrates how to practice first aid.
			The learners complete the following activities:
			State what AIDS is and how it is transmitted.
			State how to take precautions against AIDS.
			Practice first aid.

Grade 4 :			: Term 2	
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
2	Specialist hand	Grade 4 1 st year.	Grade 4 1 st year.	
	tools	Identify, care and use of:	The teacher:	
		The piston ring spreader.	• Discusses and demonstrate the care and use of a piston ring squeezer.	
			The learners complete the following tasks:	
			Identify the piston ring squeezer.	
			State the use of the piston ring squeezer.	
			• Set the rings in the piston.	
			Use the piston ring compressor to squeeze the rings in the piston.	
	Basic welding	Grade 4 2 nd year.	Grade 4 2 nd year.	
		Identify, care and use of a :	The teacher:	
		Arc welding machine	Discusses and demonstrates how to care and use the arc welding	
			machine.	
			Discusses the parts of the machine.	
			Demonstrates how to use an arc welding helmet.	
			The learners complete the following activities:	
			Identify the arc welding machine, the welding helmet and the parts of the	
			machine.	
			State how to use and care for the machine.	
			State safety precautions observed when using the machine.	
			Observe safety precautions.	
			Connect the machine.	
			Switch the machine on and off.	

Week	Торіс	Content The learner must be able to:	: Term 2 Teaching tips, techniques, activities and resources.
			Use a welding helmet.
			Adjust the amperage in the machine.
	Specialist hand	Grade 4 1 st year.	Grade 4 1 st year.
	tools	Identify, care and use of:	The teacher:
		Taps and dies.	• Discusses and demonstrates how to use and care for taps and dies.
			Discusses imperial and metric taps and dies.
			Discusses lubrication when using taps and dies.
			The learners complete the following activities:
			Participate in the lesson.
			Identify taps and dies.
			State the care and use of taps and dies.
			State the difference between imperial and metric taps and dies.
			Use a tap and die
	Basic welding	Grade 4 2 nd year.	Grade 4 2 nd year.
		Identify, care and use of a :	The teacher:
		Arc welding machine	 Discusses and demonstrates how to care and use the arc welding
			machine.
			Discusses safety precautions when setting up the machine and welding
			Demonstrates how to use a welding helmet.
			The learners complete the following activities:
			State safety precautions when using an arc welding machine.
			 Identify the arc welding machine and the main parts.

		Content	e 4 : Term 2
Week	Торіс	The learner must be able to:	Teaching tips, techniques, activities and resources.
			Set up the machine.
			Switch on the machine.
			Set the amperage.
			Connect a welding rod to the machine.
			Strike an arc.
1	Measuring	Grade 4 1 st year.	Grade 4 1 st year.
	instruments	Identify, care and use of a:	The teacher:
		Measuring tape	Discusses and demonstrates how to care and use the measuring tap
		Steel rule	and the steel rule.
			Discusses how to measure in mm, cm and m.
	• Id		The learners complete the following activities:
		C	Identify the measuring tape and the steel rule.
			State the care and use of the measuring tape and steel rule.
			State the different units of measurements.
			Use a measuring tape to measure.
			Use a steel rule to measure.
		Grade 4 2 nd year	Grade 4 2 nd year.
		Identify, care and use of a:	The teacher:
		Arc welding machine.	• Discusses and demonstrates how to care and use the arc weldin
			machine.
			 Discusses safety precautions when using the arc welding machine.
			 Discusses and demonstrates how to weld two plates.
			 Demonstrates how to use a welding helmet.

		Grade 4 :	: Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			The learners complete the following activities:
			State the safety precautions to be observed.
			Name the parts of the arc welding machine.
			Use a helmet.
			Follow safety precautions.
			Connect the machine.
			Set the amperage.
			Switch on the machine.
			Fit a welding rod to the machine.
			Strike an arc.
			Weld two plates.
5	Measuring	Grade 4 1 st year.	Grade 4 1 st year.
	instruments	Identify, care and use of a:	The teacher:
		Feeler gauge	• Discusses and demonstrates how to care and use the feeler gauge and
		Straight edge	straight edge.
			 Discusses imperial and metric measurements in a feeler gauge.
			The learners complete the following activities:
			 Identify the feeler gauge and straight edge.
			 State how to care and use a feeler gauge and straight edge.
			 Use a feeler gauge to set the gap in a spark plug.
			• Use a feeler gauge and a straight edge to check if a cylinder head is
	Basic welding		warped.
		Grade 4 2 nd year	Grade 4 2 nd year.
		Identify, care and use of:	

		Grade 4	: Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Gas welding equipment	 The teacher: Discusses and demonstrates how to care and use gas welding equipment. Discusses safety when using gas welding equipment. Discusses the importance of the flame arrestor valve. Discusses and demonstrates how to use and adjust gas welding goggles. The learners complete the following activities: State the safety precautions when using gas welding equipment. Identify gas welding equipment, goggles and valves. Connect up the regulating valves in the gas welding equipment. Connect up the flame arrestor valve. Connect the pipes in the gas welding equipment. Adjust regulator valves. Use and adjust a gas welding goggle.
6	Fundamental	Grade 4 1 st year.	Grade 4 1 st year.
	engine	Understand vehicle layout	The teacher:
	technology		Discusses the engine locations in different types of vehicles.
			Discusses the layout on a front engine, front wheel drive.
			Discusses the layout on a front engine, rear wheel drive.
			• Discusses the layout on the rear engine, rear wheel drive.
			Discusses the layout on the mid engine, rear wheel drive.

			: Term 2
Neek	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Draws sketches of the different engine layout
			The learners complete the following activities:
			Participate in the lesson.
			State the different types of engine layouts.
			State the types of vehicles with the different engine layouts and reason
			thereof.
			Draw sketches of the different types of engine layouts.
			Make a mini model of a vehicle with wheels and engine layout.
	Basic welding	Grade 4 2 nd year.	
		Identify, care and use of:	Grade 4 2 nd year.
		Gas welding equipment	The teacher:
			Discusses safety procedures when working with gas welding equipmen
			Discusses and demonstrates how to connect up the gas weldir
			equipment, regulator valves, flame arrestor valve and pipes.
			Discusses the purpose of welding.
			Discusses the purpose of the welding nozzle.
			Demonstrates how to use and adjust gas welding goggles.
			Demonstrates how to light up the welding nozzle.
			Discusses and demonstrate how to shut off a welding nozzle and clear
			out the nozzle.
			The learners complete the following activities:
			Identify the gas welding equipment, gas welding goggles and the weldir
			nozzle.

		Grade 4	: Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
7	Fundamental engine technology		 Feaching tips, techniques, activities and resources. State safety precautions to be observed when using gas welding equipment. Connect up the gas welding equipment, regulator valves, flame arrestor valve and pipes. Connect up and disconnect the welding nozzle. Adjust the regulator valve. Light up and adjust the welding nozzle. Switch the equipment off and clean out the nozzle. Grade 4 1st year. The teacher: Discusses the reason for the name reciprocating engines. Discusses the main differences between petrol and diesel engines. Discusses the main components of the reciprocating engine. Discusses the cylinder, the piston, the connecting rod and the crankshaft. Discusses engine size. Demonstrates how the engine works with a model. The learners complete the following activities: State the reason why the name is given to the engine. State the main parts of the reciprocating engine. State the function of each part.

		Grade 4 :	: Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Basic welding	Grade 4 2 nd year.	Grade 4 2 nd year.
		Identify, care and use of:	The teacher:
		Gas welding equipment.	• Discusses safety precautions when working with gas welding equipment.
			• Discusses and demonstrates how to connect up the gas welding
			equipment, regulator valves, flame arrestor valves, pipes.
			• Discusses and demonstrates how to connect, disconnect and clean the
			brazing nozzle.
		(Discusses the reason for brazing.
			The learners complete the following activities:
			 State the safety precautions when using gas welding equipment.
			• Identify the gas welding equipment, the regulating valve, the flame
			arrestor valve, the brazing goggles and the brazing nozzle.
			• Set up the gas welding equipment, the regulating valve, the flame
			arrestor valve and pipes.
			Connect up the brazing nozzle.
			Adjust the regulator valve.
			Light up the brazing nozzle.
			 Switch off the equipment and cleans the brazing nozzle.
8	Fundamental	Grade 4 1 st year.	Grade 4 1 st year.
	engine	• Discuss petrol, diesel and alternative fuel	The teacher:
	technology	vehicles.	Discusses petrol and diesel fuels in engines.
			 Discusses vehicles using liquid petroleum gas (LPG).

	Contont		: Term 2
Veek	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Discusses hybrid vehicles with petrol engines and electric motor.
			Discusses fuel cell vehicles.
			 Discusses safety precautions when dealing with different engines and/or motors.
			The learners complete the following activities:
			State the different types of fuel vehicles.
			Draw pictures of vehicles using the different types of engines.
			Compile a collage of pictures of different types of fuel vehicles.
			 Inspect vehicles with different types of fuel vehicles.
			Grade 4 2 nd year:
	Automotive	Grade 4 2 nd year.	The teacher:
	components	Identify, remove and refit a wheel.	Discusses the safety precaution observed when removing and refitting
			wheel on a vehicle.
			Discusses jacking points in a vehicle.
			Discusses how to use axle stands before removing the wheel.
			Discusses and demonstrates how to chock up a vehicle.
			Discusses and demonstrates how to loosen wheel nuts.
			Discusses and demonstrates how to jack up a vehicle.
			Discusses and demonstrates how to remove the wheel nuts and remov
			the wheel.
			Discusses and demonstrates how to refit the wheel and wheel nuts.
			Discusses and demonstrates how to jack down the vehicle and torqu
			the wheel nuts.

	Grade 4		: Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
9	Fundamental engine technology	Grade 4 1st year • Discuss and understand the four stroke cycle	 The learners complete the following activities: State the safety precaution observed when removing and refitting a wheel. Identify the wheel, jacking points, the jack, chocks, wheel spanner and axle stands. Chock up a vehicle. Loosen the wheel nuts. Jack up a vehicle. Support vehicle with an axle stand. Remove wheel nuts and wheel. Refit the wheel and wheel nuts. Jack the wheel down and torques the wheel nuts. Grade 4 1st year. The teacher: Discusses the four stroke cycle. Discusses and demonstrates the different strokes on a cutaway model engine. The learners complete the following activities: Identify the piston, crankshaft, valves and spark plug. Turn the engine to each stroke and explain what is happening at each stroke. Explain through demonstration on the cutaway model of the engine what happens in the induction/intake, compression, power, exhaust stroke of

		Grade 4	: Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			the engine.
	Automotive	Grade 4 2 nd year.	
	components	• Identify, remove and refit a propeller shaft.	Grade 4 2 nd year.
			The teacher:
			• Discusses and demonstrate how to remove and refit a propeller shaft.
			The learners complete the following activities:
			Identify the propeller shaft.
			• State safety precautions when removing and refitting a propeller shaft.
			Remove and refit a propeller shaft.

10

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.

	Grade 4 1 st year	Grade 4 2 nd year.
Week 2	Set rings on a piston	Set up an arc welding machine.
	• Use a ring squeezer.	• Switch the arc welding machine on.
Week 3	• Use a tap to cut/clean threads.	Set amperage on an arc weldin
	• Use a die to cut/clean threads.	machine.
		Strike an arc.
Week 4	Use a measuring tape.	Strike a long weld.
	Use a steel ruler.	Weld two plates.
Week 5	Use a feeler gauge.	• Connect the regulating valves in th
	Use a straight edge.	gas welding equipment.
		• Connect up the flame arrestor valve.
Week 6	• Draw a sketch of a typical engine	Adjust the regulator valves.
	layout.	Light up the welding nozzles.
	• Make a mini model vehicle with an	
	engine.	
Week 7	Name the main engine components in	Connect the brazing nozzle.
	the engine model.	Light up the brazing nozzle.
	• Draw a sketch of the engine with a	
	connecting rod.	
Week 8	• Compile a collage of pictures of	Jack up a vehicle.
	different types of vehicles.	Remove and refit a tyre.
	• Draw a vehicle with a petrol powered	
	engine and a vehicle with a battery	
	powered motor.	
Week 9	• Turn engine to induction stroke and	.Remove the propeller shaft.
	explain the induction process	Refit the propeller shaft.
	practically.	
	• Turn the engine to the compression	
	stroke and explain the compression	
	stroke practically.	

MOTOR MECHANICS

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 st year	Grade 4 2 nd year.
Week 2	• State the purpose of the piston ring	 State the purpose of the arc welding machine.
	squeezer.	machine.
Week 3	• State the purpose of taps and dies.	State safety precautions observed
		when using the arc welding machine.
Week 4	• State the purpose of the measuring	State the reasons for welding.
	tape.	
Week 5	• State the purpose of the feeler gauge.	State the purpose of gas welding
		equipment.
Week 6	• State the reasons for different engine	State the reasons for gas welding.
	layouts.	
Week 7	• State the main difference between	State the reasons for brazing.
	petrol and diesel engines.	
Week 8	• State the reasons for battery powered	 State the reasons for chocking wheels
	vehicles.	on a vehicle when jacking a vehicle.
Week 9	• Name the 4 cycles in the 4 stroke	• State the purpose of a propeller shaft.
	cycle.	

3.2.3	Grade 4 : 1st yea	ar and 2nd year . Term 3.	
		Grade 4 :	Term 3
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
1	Good housekeeping practices.	 Grade 4 1st year. Practice cleanliness and care of equipment. Observe correct use of cleaning equipment and materials. 	 Grade 4 1st year. The teacher: Discusses and demonstrates how to clean and keep a workshop tidy. Discusses and demonstrates the correct use of cleaning equipment and materials. The learners complete the following activities: Practice cleanliness of the workshop by sweeping, washing and setting the workshop. Learners are divided into different groups to achieve this.
	World of work/ learner work experience programme.	 Grade 4 2nd year. Practice good work habits-personal presentation. Practice good work habits-social presentation. State the various types of jobs available. State the basic requirements for different types of jobs. 	 Grade 4 2nd year. The teacher: Discusses how to practice good work habits. Discusses the various types of jobs available. Discusses the basic requirements for different types of jobs. The learners complete the following activities: Role play good work habits. State the good work habits.

		Grade 4	: Term 3
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
			 State the different types of jobs available. State the requirements for the different types of jobs related to motor mechanics.
2	Fundamental	Grade 4 1 st year	Grade 4 1 st year.
	engine	Discuss and understand the two stroke cycle.	The teacher
	technology		Discusses the 2 stroke cycle.
			Discusses which vehicles or equipment uses the 2 stroke engine.
			Discusses and demonstrates the different strokes on a cutaway model.
			• Discusses and demonstrates how to mix fuel for a 2 stroke vehicle or equipment.
			Discusses and demonstrates how to drain and refill oil in the engine.
			Discusses and demonstrates how to start a two stroke engine.
			The learners complete the following activities:
			Identify 2 stroke engines.
			State the process in the upward stroke.
			State the process in the downward stroke.
			Mix fuel in a stroke engine.
			Drain and refills engine oil.
			• Start up a 2 stroke engine.
	Automotive	Grade 4 2 nd year.	Grade 4 2 nd year.
	components	Identify and remove a gearbox.	The teacher:
			 Discusses safety precautions when removing a gearbox.

		Grade 4 :	Term 3
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
3	Fundamental engine technology	Grade 4 1 st year. • Identify, remove and refit the following engine components: Tappet cover Engine sump	 Discusses the purpose of the gearbox. Discusses the different types of gearboxes. Discusses the reasons for removing the gearbox. Discusses and demonstrates how to remove the gearbox. The learners complete the following activities: Identify the different gearboxes. State the purpose of the gearbox. State the purpose of the gearbox. State reasons for removing the gearbox. State reasons for removing the gearbox. State the purpose of the gearbox. State reasons for removing the gearbox. State reasons for removing the gearbox. State safety precautions to be observed when removing a gearbox. Support gearbox before removing. Remove gearbox. Grade 4 1 st year. The teacher: Discusses the reasons for a tappet cover and tappet cover gasket. Discusses the reason for a sump and sump gasket. Discusses and demonstrates how to remove and refit the tappet cover. Discusses and demonstrates how to remove and refit the engine sump. The learners complete the following activities: Identify and state the purpose of the tappet cover. Identify and state the purpose of the engine sump.

	Grade 4 : Term 3		
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
			Identify and state the purpose of gaskets.
			Remove and refit the tappet cover.
			Drain the engine oil.
			Remove and refit the engine sump.
	Automotive	Grade 4 2 nd year.	
	components	Align and refit a gearbox.	Grade 4 2 nd year.
			The teacher:
			Discusses safety precautions observed when refitting the gearbox.
			• Discusses how to align the gearbox to the clutch and pressure plate.
			Discusses and demonstrates how to refit the gearbox.
			The learners complete the following activities:
			• State the safety precautions observed when refitting a gearbox.
			Align the gearbox to the clutch and pressure plate.
			Refit the gearbox.
			• Fit and secures the gearbox mountings.
	Automotive	Grade 4 1 st year.	Grade 4 1 st year.
	components	Identify, remove and refit the following engine	The teacher:
		component:	Discusses the purpose of the cylinder head.
		Cylinder head	• Discusses and demonstrates how to remove the cylinder head.
			• Discusses and demonstrates how to fit a new cylinder head gasket.
			Discusses and demonstrates how to fit the cylinder head.
			• Discusses and demonstrates how to torque the cylinder head.

	Grade 4 : Term 3		
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
	Automotive components	Grade 4 2nd year. Identify and remove the clutch and pressure plate.	 The learners complete the following activities: Identify and states the purpose of the cylinder and cylinder head gasket. Remove the cylinder head. Replace the cylinder head gasket. Refit the cylinder head. Torque the cylinder head. Discusses the purpose of the clutch and pressure plate. Discusses the purpose of the release bearing. Demonstrates how to remove the clutch and pressure plate. The learners complete the following activities: Identify the clutch and pressure plate. Remove the clutch and pressure plate.
5	Automotive	Grade 4 1 st year.	Grade 4 1 st year.
	components	Identify, remove and refit the following engine	The teacher:
		components:	 Discusses the purpose of the inlet and exhaust manifold.
		Inlet manifold	• Discusses and demonstrates how to remove and refit the inlet and
		Exhaust manifold	exhaust manifold.
			The learners complete the following activities:
			State the purpose of the inlet and exhaust manifold.

	Grade 4 : Term 3		
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
	Automotive	Grade 4 2 nd year.	 Remove and refit the inlet and exhaust manifold. Grade 4 2nd year.
	components	Align and re-assemble the clutch and pressure	The teacher:
		plate	• Discusses and demonstrates how to align and secure the clutch and
			pressure plate.
			The learners complete the following activities:
			Align the clutch and pressure plate.
			Secure the clutch and pressure plate.
6	Automotive	Grade 4 1 st year	Grade 4 1 st year.
	service	State what a basic or minor service is.	The teacher:
		Plan and prepare for a minor service.	Discusses what a basic service on a vehicle is.
			 Explains the difference between a minor and major service.
			 Discusses how to use a job card to carry out a minor service.
			 Discusses how to plan to carry out a minor service.
			 Discusses and demonstrates how to order parts for a minor service.
			• Discusses and demonstrates how to fit covers inside and outside the
			vehicle.
			• Discusses and demonstrates how to position containers to drain oils
			etc.
			The learners complete the following activities:
			State what a minor service is.
			Order parts to carry out a minor service.

	Grade 4 : Term 3		
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
			 Fit fender covers, steering covers, seat covers and floor mats. Position containers to drain oils etc in correct places.
	Automotive components	 Grade 4 2nd year. Identify, remove, refit and adjust the clutch cable. Bleed the clutch slave cylinder (hydraulic). 	 Grade 4 2nd year: The teacher: Discusses the purpose of the clutch cable. Discusses the purpose of the clutch slave cylinder. Discusses and demonstrates how to remove, refit and adjust the clutch
			 cable. Discusses and demonstrate how to bleed the clutch slave cylinder. The learners complete the following activities: Identify and state the purpose of the clutch cable. Identify and state the purpose of the clutch slave cylinder. Remove, refit and adjust the clutch cable. Bleed the clutch slave cylinder.
7	Automotive	Grade 4 1 st year.	Grade 4 1 st year.
	service	 Carry out a minor service as follows: Replace engine oil and engine oil filter. 	 The teacher: Discusses the purpose of the engine oil and engine oil filter. Discusses and demonstrates how to replace the engine oil and the engine oil filter. The learners complete the following activities: Identify and state the purpose of the engine oil and engine oil filter. Drain the engine oil and removes the engine oil filter.

 ing tips, techniques, activities and resources. Fit new engine oil filter and fills engine oil. Check level of engine oil. 4 2nd year. acher: Discusses safety precautions when working on the auto electrical system and the battery. Discusses the different components of the electrical system.
Check level of engine oil. 4 2nd year. acher: Discusses safety precautions when working on the auto electrical system and the battery.
acher: Discusses safety precautions when working on the auto electrical system and the battery.
Discusses safety precautions when working on the auto electrical system and the battery.
Discusses and demonstrate how to replace a blown fuse. Discusses and demonstrate how to top up battery fluid. anners complete the following activities: Observe safety precautions when working on the electrical system and battery on a vehicle. State the reason for the electrical system. Identify the different components of the electrical system and their purpose. Replace a blown fuse. Top up battery fluid.

	Grade 4 : Term 3		
Week	Veek Topic Content		Teaching tips, techniques, activities and resources.
8	Automotive service	 Grade 4 1st year. Check/replace air filter. Grade 4 2 nd year. State the purpose of the main electrical components as follows: The battery The fuse box. 	 Grade 4 1st year. The teacher: Discusses the purpose of the air filter. Discusses and demonstrates how to replace an air filter. The learners complete the following activities: Identify the air filter. State the purpose of the air filter. Remove the air filter. Replace the air filter. Grade 4 2nd year. The teacher: Discusses the different voltages of batteries. Discusses the different amperages of fuses in the fuse box. Discusses the different amperages of fuses in the fuse box. Discusses and demonstrates how to connect and disconnect a battery. Discusses and demonstrates how to check and top up battery fluid. Discusses and demonstrates how to replace a fuse in the fuse box. The learners complete the following activities: Observe safety precautions when working on the battery and the fuse box.

	Grade 4 : Term 3		
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
			 Identify the different types of batteries. Connect and disconnect a battery. Use the hydrometer to test the electrolyte level in the battery. Identify the fuse box and fuse. Replace a fuse in the fuse box.
9	Automotive	Grade 4 1 st year.	Grade 4 1 st year.
	service	 Gap/replace spark plugs Gap/replace points Replace the condenser 	 The teacher: Discusses and demonstrates how to remove, gap and replace the spark plug. Discusses and demonstrates how to gap and replace points. Discusses and demonstrates how to replace the condenser. The learners complete the following activities: Identify the spark plug, points and condenser. Observe safety precautions when working with the points, spark plug and condenser. State the purpose of the spark plug, points and condenser. Remove, gap and replace the spark plug. Gap and replace the points.

	Grade 4 : Term 3		
Week	Торіс	Content	Teaching tips, techniques, activities and resources.
	The main	Grade 4 2 nd year.	Grade 4 2 nd year.
	electrical	• State the purpose of the main electrical	The teacher:
	components	components as follows:	• Discusses safety precautions observed when working with the wiring
		The wiring system	system and the starter.
		The starter	• Discusses the purpose of the wiring system and the different colour
			wires.
			 Discusses and demonstrates how to remove and refit the starter.
			The learners complete the following activities:
			Observe safety precautions when working with the wiring system and
			the starter,
			 Identify the wiring system and the starter.
			 State the purpose of the wiring system and the starter.
			Remove and refits the starter.

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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 4 1 st year.	Grade 4 2 nd year
number		
Week2	• Mixes fuel for a 2 stroke engine.	• Support the gear box with a jack.
	• Start up a 2 stroke engine.	Removes the gear box
Week 3	Drain the engine oil.	Fit the gearbox.
	• Remove and refit the sump.	Secure all gear box mountings.
Week 4	Fit the cylinder head.	Remove the clutch plate.
	• Torque the cylinder head.	Remove the pressure plate.
Week 5	Remove the exhaust manifold.	• Align the clutch and pressure plate.
	Refit the exhaust manifold.	• Secure the clutch and pressur
		plate.
Week 6	Fit fender covers.	Adjust the clutch cable.
	• Fit seat, floor and steering covers.	Bleed the clutch slave cylinder.
Week 7	Remove the engine oil filter.	 Replace a blown fuse.
	Replace the engine oil filter.	Top up battery fluid.
Week 8	Remove the air filter.	Remove the battery.
	Replace the air filter.	Replace the battery.
Week 9	Replace a spark plug.	Remove the starter.
	Gap a spark plug.	Refit the starter.

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 number	Grade 4 1 st year	Grade 4 2 nd year
Week 2	State the process in the upward stroke of the 2 stroke engine	• State the purpose of the gear box.
Week 3	State the purpose of a gasket.	• State one safety precaution observed when refitting a gear box.
Week 4	State the purpose of the cylinder head.	• State the purpose of the clutch and pressure plate
Week 5	 State the purpose of the inlet manifold. 	• State the reason for aligning the clutch and pressure plate.

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Week 6	• .State the purpose of a out a minor	• State the purpose of a clutch cable.
	service.	
Week 7	State the purpose of a oil filter.	• State the purpose of the battery.
Week 8	• State the purpose of an air filter.	• State the purpose of the fuse box.
Week 9	• State the purpose of the spark plug.	• State the purpose of the starter.
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3.2.4 Grade 4 : 1st year and 2nd year . Term 4.

	Grade 4 : Term 4			
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.	
1	Good	Grade 4 : 1 st year.	Grade 4 1 st year.	
	housekeeping	Report faulty equipment.	The teacher:	
	practices.	Keep the workshop clean.	 Discusses how to report faulty equipment. 	
		Practice relevant safety routines.	Discusses cleanliness of the workshop.	
			 Demonstrates how to clean a workshop. 	
			 Discusses how to practice relevant safety routines. 	
The learners complete			The learners complete the following activities:	
			Report faulty equipment.	
			Sweep, wash and reset the workshop.	
			Carry out good housekeeping practices.	
			Practice relevant safety routines.	
	Driver training.	Grade 4 : 2 nd year.	Grade 4 2 nd year.	
		• Understand the need for a learner's and drivers	The teacher:	
		licence.	 Discusses the need for a learner's and drivers licence. 	
		• Know the age to book for a learner's test.	 Discusses the age to book for a learners test. 	
		Sets the workshop.	Discusses the need to set the workshop.	
			The learners complete the following activities:	
			State the need for a learner's and driver's licence.	

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		Grade 4 : Grade 4 :		
Week	Торіс	The learner must be able to:	Teaching tips, techniques, Activities and resource.	
			State the age to book a learner's test.	
			Set the workshop.	
2	Automotive	Grade 4 : 1 st year.	Grade 4 1 st year.	
	service	Check/top up all fluid levels.	The teacher:	
		 Top up all oil and coolant levels. 	Discusses further checks as per check list.	
		• Carry out further minor service checks as per	• Discusses and demonstrates how to check and top up engine oi	
		check sheet.	brake fluid, coolant and power steering levels.	
			The learners complete the following activities:	
			 State the reasons for minimum and maximum fluid levels. 	
			 State the reason for checking fluid levels. 	
			Check and tops up the different fluid levels.	
	The main	Grade 4 2 nd year.	Grade 4 2 nd year.	
	electrical	State the purpose of the main electrical	The teacher:	
	components	component:	 Discusses safety precautions observed when working on the 	
		The alternator	alternator.	
			Discusses the purpose of the alternator.	
			• Discusses and demonstrates how to remove and refit the alternator.	
			Discusses and demonstrates how to adjust the alternator belt.	
			The learners complete the following activities:	
			Observe safety precautions when working with the alternator.	
			State the purpose of the alternator.	
			Remove and refits the alternator.	

		Grade 4 :	ierm 4
Neek	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			Adjust the alternator belt.
3	The battery	Grade 4 1 st year	Grade 4 1 st year.
		State the purpose and types of batteries.	The teacher:
		• Use a hydrometer to test the battery.	 Discusses the purpose and different types of batteries.
		• Make a correct electrolyte mix for the battery.	Discusses safety precautions when working with battery acid.
			• Discusses and demonstrates how to use the hydrometer.
			Discusses and demonstrates how to correct the electrolyte levels in t
			battery.
			The learners complete the following activities:
			State the purpose of the battery.
			 Identify the different types of batteries.
			Observe safety precautions when working with battery acid.
			Identify and uses the hydrometer.
			Correct the electrolyte level of the battery.
	The main	Grade 4 2 nd year.	Grade 4 2 nd year.
	electrical	• State the purpose of the main electrical	The teacher:
	components	components as follows:	Discusses and demonstrates how to remove and replace t
		The distributor	distributer.
		The coil.	• Discusses and demonstrates how to clean the distributer cap a
			check for cracks.
			Discusses and demonstrates how to remove and refit the coil.
			The learners complete the following activities:

		Grade 4 : Content	
Veek	Торіс	The learner must be able to:	Teaching tips, techniques, Activities and resource.
			Observe safety when working with the distributer and coil.
			Identify the distributer and coil.
			Clean the distributer cap and checks for cracks.
			Remove and refits the coil.
	Testing and	Grade 4 1 st year.	Grade 4 1 st year.
	renewal of	Replace globes.	The teacher:
	globes		 Discusses the types of globes and voltages.
			 Discusses and demonstrates how to replace globes.
			Discusses and demonstrates how to remove and replace light fitting
			to replace globes.
			 Discusses and demonstrates how to replace headlight globes.
			The learners complete the following activities:
			Identify different types of globes.
			 Identify the different voltage globes.
			Remove and refit light fittings to replace globes.
			Replace headlight globes.
			Replace globes.
	The main	Grade 4 2 nd year.	Grade 4 2 nd year.
	electrical	• State the purpose of the main electrical	The teacher:
	components	components as follows:	 Discusses the purpose of the ignition system and the wipers.
		The ignition system	Discusses the operation of the ignition system.
		The wipers.	Discusses the operation of the wipers.

		Grade 4 :	
Veek	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			Discusses and demonstrates how to replace and adjust wiper blades
			The learners complete the following activities:
			• Identify the ignition system and the wipers.
			• State the purpose of the ignition system and the wipers.
			Replace the wiper blades.
			Adjust the wiper blades.
	Auto valet	Grade 4 1 st year.	Grade 4 1 st year.
		• Understand the reasons for washing a vehicle.	The teacher:
		Know how to wash a vehicle with detergents.	Discusses water as a scarce resource.
		(Discusses and demonstrates how to prepare a vehicle for washing.
			 Discusses and demonstrates how to wash a vehicle with detergents.
			• Discusses and demonstrates how to dry a vehicle after washing.
			The learners complete the following activities:
			• State the reasons for washing a vehicle.
			• State the type of detergents to use when washing a vehicle.
			Wash a vehicle.
			• Dry a vehicle.
	Basic welding/	Grade 4 2 nd year.	
	joining of metal	State the different methods of joining metal.	Grade 4 2 nd year.
	Je	 Identify the different types of metals. 	The teacher:
		• Identity the different types of metals.	Discusses the basic methods of joining metals.
			Discusses how to join metals by bolting together.
			 Discusses how to join metals by welding.

		Grade 4 :	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			Discusses the different methods of joining metal.
			Discusses the different types of metal.
			Discusses and demonstrates how to drill holes in metal plates.
			Discusses and demonstrate how to join metal by riveting.
			The learners complete the following activities:
			State the different methods of joining metal.
			• State the different types of metals and where they can be used.
			Drill holes in two pieces of metal.
			Rivet the 2 pieces of metal together.
6	Auto valet	Grade 4 1 st year	Grade 4 1st year.
		Vacuum a vehicle	The teacher:
			Discusses the purpose of vacuuming a vehicle.
			• Discusses how to check and remove coins and objects, articles that
			would jam the vacuum cleaner.
			Discusses and demonstrates how to switch a vacuum cleaner on and
			off.
			Demonstrates how to vacuum a vehicle.
			The learners complete the following activities:
State the purpose of the v		State the purpose of the vacuum cleaner.	
			Switch a vacuum cleaner on and off.
			Vacuum a vehicle.
	Basic welding	Grade 4 2 nd year.	Grade 4 2 nd year.
		Observe safety rules when using welding	

		Grade 4	: Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
		equipment.	 The teacher: Discusses safety rules and precautions to be observed when using welding equipment. Discusses the purpose and use of the welding screen. Discusses the use and purpose of welding gloves, apron, leggings and cap. Discusses the purpose and use of a welding helmet. Demonstrates how to use a welding screen. Demonstrates how to use the welding gloves, apron, leggings and cap. Demonstrates how to use the welding gloves, apron, leggings and cap. Demonstrates how to use the welding helmet. The learners complete the following activities: State safety rules and precautions to be observed when welding. Identify the welding screen, welding helmet, welding glove, welding apron, welding leggings and welding cap. Use a welding screen, helmet, apron, gloves, leggings and cap.
7	Auto valet	Grade 4 1 st year.	Grade 4 1 st year.
		Polish a vehicle.	 The teacher: Discusses the purpose of polishing a vehicle. Discusses the different types of polishes. Discusses and demonstrates how to prepare a vehicle for polishing. Discusses and demonstrates how to polish a vehicle. Discusses and demonstrates how to shine a vehicle. The learners complete the following activities:

		Grade 4 :	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			State the purpose of polishing a vehicle.
			Prepare a vehicle for polishing.
			Polish a vehicle.
			Shine a vehicle.
	Basic welding Grade 4 2 nd year.		Grade 4 2 nd year.
	g	Identify, care and use of arc welding	The teacher:
		equipment.	
		equipment.	Discusses the care and use of arc welding equipment.
			Discusses the different types of arc welding equipment.
			Discusses and demonstrates how to check and fill oil in an oil cooled
			welding machine.
			Discusses and demonstrates how to connect and disconnect welding
			cables.
			The learners complete the following activities:
			Observe safety precautions when using arc welding equipment.
			State how to care and use arc welding equipment.
			Identify the different types of arc welding equipment.
			Fill oil in an oil cooled welding machine.
			Connect and disconnect the cables in a welding machine.
8	Auto valet	Grade 4 1 st year.	Grade 4 1 st year.
		Clean the mag rims of a vehicle	The teacher:
			Discusses the reasons for using mag rims.
			Discusses and demonstrates how to wash mag rims.

		Term 4
Neek Topic	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
Basic welding	Grade 4 2 nd year. • Identify, care and use of gas welding equipment.	 Discusses and demonstrates how to use a mag rim brush to clean marins. Discusses and demonstrates how to polish and shine mag rims. The learners complete the following activities: Identify mag rims. State the reason for using mag rims in a vehicle. State how to clean mag rims. Wash mag rims. Clean mag rims. Clean mag rims. Polish and shine mag rims. Grade 4 2nd year: The teacher: Discusses how to care and use gas welding equipment. Discusses where and how to store gas welding equipment. Discusses and demonstrates how to connect and disconnect pipes and regulating valves. The learners complete the following activities: Identify gas welding equipment. Observe safety precautions when using gas welding equipment. State the purpose of gas welding equipment. Blow out nozzles after use.

		Grade 4 :	lerm 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			Connect and disconnects pipes and regulating valves.
			Store away gas welding equipment.
)	Auto valet	Grade 4 1 st year	Grade 4 1 st year.
		Polish a vehicles tyres	The teacher:
		Wash the engine compartment	Discusses and demonstrates how to wash the vehicle tyres.
			Discusses and demonstrates how to polish and shine a vehicle's tyres
			• Discusses and demonstrates how to wash the engine compartment.
			The learners complete the following activities:
			Identify the tyres in a vehicle.
		(State the types of polish used to polish a tyre.
			Wash the vehicle's tyres.
			Polish and shines the tyres.
			Wash the engine compartment.
	Basic hand	Grade 4 2 nd year.	Grade 4 2 nd year:
	skills	• File a round bar to a square bar.	The teacher:
		Use cross filing and draw filing techniques.	Discusses the skills involved in the process.
			Discusses the types of files used.
			Discusses and demonstrates cross filing techniques.
			Discusses and demonstrates draw filing techniques.
			 Discusses and demonstrate how to filing a round bar to a square bar.
			The learners complete the following activities:
			Identify the different files.

		Grade 4 :	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, Activities and resource.
			Cut a 30mm piece of round bar.
			 Use cross filing techniques when filing the bar.
			 Use draw filing methods when filing the bar.
			File a round bar square.

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 st year	Grade 4 2 nd year.
2	• Check and top up the engine oil.	Remove the alternator.
	• Check and top up coolant and other fluid	Refit the alternator.
	levels.	
3	Use a hydrometer.	Remove the coil.
	• Correct the electrolyte level in a battery.	Refit the coil.
4	Remove and replace globes.	Replace the wiper blades.
	• Remove and replace headlight globes.	Adjust the wiper blades.
5	• Wash a vehicle.	Drill holes in two pieces of metal.
	• Dry a vehicle.	• Rivet the 2 pieces of metal.
6	• Switch a vacuum on and off.	Use a welding helmet.
	Vacuum a vehicle.	Use welding safety apparel.
7	Polish a vehicle.	• Fill oil a an oil cooled welding machine.
	• Shine a vehicle.	Connect and disconnect welding cables
8	Wash a vehicle's mag rims.	Connect and disconnect the pipes an
	• Polish and shine a vehicle's mag rims.	regulators in gas welding equipment.
		Blow out nozzles after use.
9	• Polish and shine a vehicle's tyres.	Use cross filing methods to file a roun
	• Wash out the engine compartment.	bar.
		• Use draw filing methods to file a roun
		bar.

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 st year.			Grade 4 2 nd year.	
2	•	State reasons for maximum and minimum fluid levels.	•	State the purpose of the alternator.	
3	•	State the purpose of the battery.	٠	State the purpose of the battery.	
4	•	State a reason for single and double filament globes.	•	State the purpose of wiper blades.	
5	•	State the reasons for washing a vehicle.	٠	State 2 method of joining metals.	

	6	• State a reason for vacuuming a vehicle.	• State the main reason for using a
			welding helmet.
	7	• State the purpose of polishing a vehicle.	• State the reason for filling oil in a welding
			machine.
	8	State the reason for using mag rims in a	• State the purpose of gas welding
		vehicle.	equipment in a vehicle.
	9	• State the purpose of polishing a vehicle.	Name 2 methods of filing metal.

3.2.5 Grade 5: 1^{st} , 2^{nd} and 3^{rd} 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	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources		
1	Health and	Grade 5 1 st year:	Grade 5 1 st year:		
	safety.	Understand the implications of exposure to	The teacher:		
		hazardous substances and hazards and	 Discusses health and safety issues with regards to hazardous 		
		prevention thereof.	substances.		
		Implement health and safety plans.	Discusses health and safety plans.		
		Identify, care and use of protective clothing.	Discusses care and use of protective clothing.		
		Implement statutory requirements.	The learners complete the following activities:		
			Remove all potential hazards from the workshop.		
			Identify, care and use protective clothing.		
			Practice safety in the workshop.		
			Sweep, clean and wash the workshop.		
			Reset the workshop and tool room.		
	Good	Grade 5 2 nd year.	Grade 5 2 nd year:		
	housekeeping practices.	 Check equipment and tools for safe and 	The teacher:		
		effective.	Discusses the reasons for checking tools and equipment for safety and		
		Set tools and equipment to specification and	effectiveness.		
		sequence.			

		Grade 5:	Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Driver training.	 Practice good housekeeping and know the impact of poor housekeeping. Grade 5 3rd year. Know what disqualifies a person from obtaining learners licence. Know what a learner's licence allows a person to do. Learns the K53 rules of the road and road signs. 	 Discusses how to set tools and equipment. Discusses how to practice good housekeeping and the effects of poor housekeeping. The learners complete the following activities: State the reasons for checking tools and equipment. Set tools and equipment. Practice good housekeeping. State the impact of poor housekeeping. Grade 5 3rd year. The teacher: Discusses driver training and K53. The learners complete the following activities: State what a person needs to obtain a learner's licence. Know the K53 rules of the road and road signs.
2	Specialist	Grade 5 1 st year.	Grade 5 1 st year.
	hand tools	 Identify, care and use of the: Brake spring pliers. 	 The teacher: Discusses safety when using the brake spring pliers. Discusses and demonstrates how to remove the rear brake drums. Discusses and demonstrates how to use the brake spring pliers. The learners complete the following activities: Identify the brake spring pliers. Observe safety precautions when using the brake spring pliers. Remove the rear brake drums. Use the brake spring pliers to remove

Grade 5: Term 1			Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Automotive	Grade 5 2 nd year.	and refit brake springs.
	components	• Identify, remove and refit the following engine	Grade 5 2 nd year:
		components:	The teacher:
		Flywheel	Discusses the purpose of the front pulley and the flywheel.
		Front pulley	Demonstrates how to remove and refit the front pulley.
			Demonstrates how to remove and refit the flywheel.
			The learners complete the following activities:
			 Identify the front pulley and the flywheel.
			 State the purpose of the front pulley and the flywheel.
		(Remove and refit the front pulley.
			Remove and refit the flywheel.
	Automotive	Grade 5 3 rd year.	
	service	Carry our major service as follows:	Grade 5 3 rd year:
		Adjust handbrakes.	The teacher:
			Discusses safety precautions when adjusting the handbrakes.
			Discusses the purpose of the handbrakes.
			• Discusses and demonstrates how to adjust the handbrakes inside the
			vehicle.
			• Discusses and demonstrates how to adjust the vehicle under the
			vehicle.
			The learners complete the following activities:
			State the purpose of the handbrake.
			Observe safety precautions when adjusting the handbrakes.
			Adjust the handbrakes inside the vehicle.

		Grade 5:	Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
			Adjust the handbrakes under the vehicle.
3	Specialist	Grade 5 1 st year.	Grade 5 1 st year.
	hand tools	Identify, care and use of the:	The teacher:
		Valve spring lifter.	• Discusses and demonstrates how to use the valve spring lifter to
			remove and refit a valve.
			The learners complete the following activities:
			 Identify the valve spring lifter.
			 Observe safety precautions when using a valve spring lifter.
			 Use the valve spring lifter to remove a valve.
			Use a valve spring lifter to refit a valve.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	Identify, remove and refit the following engine	The teacher:
		components:	Discusses the purpose of the water pump.
		Water pump.	• Discusses and demonstrates how to check the water pump for water
			leaks and a worn or collapsed bearing.
			Discusses and demonstrates how to remove and refit a water pump.
			The learners complete the following activities:
			Identify the water pump.
			Check for water leaks and worn or collapsed bearings.
			Remove and refit the water pump.
	Automotive	Grade 5 3 rd year.	
	components	Carry out major service as follows:	Grade 5 3 rd year
	•		The teacher:

		Grade 5:	Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
		Check, remove timing belt.	Discusses the purpose of the timing belt.
			• Discusses and demonstrates how to remove and refit the timing belt
			cover.
			• Discusses and demonstrates how to replace the timing belt.
			The learners complete the following activities:
			 Identify the timing belt cover and the timing belt.
			 Remove and refit the timing belt cover.
4	Specialist	Grade 5 1 st year.	Grade 5 1 st year.
	hand tools	Identify, care and use of the :	The teacher:
		Valve grinder.	 Discusses and demonstrates how to remove a valve.
			• Discusses and demonstrates how to grind a valve with grinding paste.
			Discusses and demonstrates how to refit a valve.
			The learners complete the following activities:
			Identify the valve grinding equipment.
			Remove a valve.
			Grind a valve with rough grinding paste.
			Grind a valve with smooth grinding paste.
			Refit the valve.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	• Identify, remove and refit the following engine	The teacher:
		components:	 Discusses the purpose of the piston ring squeezer, the piston and the
		Piston	

		Grade 5	: Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Automotive service	Fiston rings. Piston rings. Grade 5 3 rd year. • Carry out major service as follows: Check valve timing. Fit timing belt.	 piston rings. Discusses and demonstrates how to set the rings in the piston. Discusses and demonstrates how to use the piston ring squeezer to fit the piston in the cylinder bore. Discusses and demonstrates how to remove a piston from the cylinder bore. The learners complete the following activities: Identify the piston ring squeezer, the piston and the piston rings. Set the rings in the piston. Use a piston ring squeezer to squeeze the rings a in the piston and fit the piston in the cylinder bore. Grade 5 3rd year. The teacher: Discusses and demonstrates how to set vale timing. Discusses and demonstrates how to set a timing belt. The learners complete the following activities: Identify the piston from the cylinder bore.

		Grade 5:	Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
5	Specialist	Grade 5 1 st year.	Grade 5 1 st year.
	hand tools	Identify, care and use of the:	The teacher:
		Piston ring groove cleaner.	 Discusses the purpose of the piston groove cleaner.
			Discusses and demonstrates how to remove the piston rings.
			 Discusses and demonstrates how to clean the piston grooves.
			The learners complete the following activities:
			 Identify the piston, the piston rings and the piston groove cleaner.
			Remove the rings from the piston.
			Clean the piston grooves.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	Identify, remove and refit the following engine	The teacher:
	components: Crankshaft Camshaft.		 Discusses the purpose of the crankshaft and camshaft.
			• Discusses and demonstrates how to remove and refit the crankshaft
		and camshaft.	
			The learners complete the following activities:
			 Identify the crankshaft and camshaft.
			Remove and refit the crankshaft and camshaft.
	Automotive	Grade 5 3 rd year.	Grade 5 3 rd year.
	service	Carry out major service as follows:	The teacher:
		Check/replace/adjust fan belts.	Discusses the purpose of the fan belts.

		Grade 5:	: Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
			Discusses and demonstrates how to check, replace and adjust a fan
			belt.
			The learners complete the following activities:
			Identify the fan belt.
			Check, replace and adjust the fan belt.
	Specialist	Grade 5 1 st year	Grade 5 1 st year.
	hand tools	Identify, care and use of the:	The teacher:
		Cylinder hone.	Discusses and demonstrates how to fit the cylinder bore honing tool in
			the hand drill.
			Discusses and demonstrates how to use the cylinder bore hone.
			The learners complete the following activities:
			Identify the cylinder bore hone.
			Observe safety precautions when using the tool.
			Fit the tool in the hand drill.
			• Use the tool to hone the cylinder bore with paraffin.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	Identify, remove and refit the following engine	The teacher:
		components:	• Discusses the functions of the fuel pump, oil pump and welsh plugs.
		Fuel pump	Demonstrates how to remove and refit the fuel pump.
		Oil pump	Demonstrates how to remove and refit the oil pump.
		Welsh plugs.	 Demonstrates how to remove and replace the welsh plug.
			The learners complete the following activities:

		Grade 5	5: Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
			 Identify and state the functions of the fuel pump, oil pump and welsh plugs. Remove a welsh plug. Replace a welsh plug.
	Automotive	Grade 5 3 rd year.	Grade 5 3 rd year.
	service	Carry our major service as follows:	The teacher:
		Check/replace suspension bushes.	 Discusses the purpose of the suspension bushes.
			Discusses and demonstrates how to check and replace suspension
			bushes.
		The learners complete the following activities:	
			Identify suspension bushes.
			Observe safety precautions when replacing suspension bushes.
			Check suspension bushes.
			Remove and replace suspension bushes.
7	Specialist	Grade 5 1 st year.	Grade 5 1 st year.
	hand tools	Identify, care and use of the:	The teacher:
		Timing light.	Discusses the use of the timing light.
			Discusses and demonstrates how to connect up the timing light.
			Discusses and demonstrates how to use the timing light.
			The learners complete the following activities:
			Identify the timing light.
			Observe safety precautions when using the timing light.

tomotive mponents	The learner must be able to:	Compart the timing light
		Connect the timing light.
mponents	Grade 5 2 nd year.	Use the timing light.
•	 Identify, remove, grind and refit valves in the 	Grade 5 2 nd year.
	cylinder head.	The teacher:
		 Discusses the use of the grinding paste and valve grinding tool.
		 Discusses safety when removing and refitting the valve.
		 Discusses and demonstrates how to remove, grind and replace the
		valve.
		The learners complete the following activities:
		 Identify the valve, valve grinding tool and the grinding paste.
		Observe safety precautions when using the valve spring compressor.
		Remove the valve.
		 Attach the valve grinding tool to the valve.
		Grind the valve.
		Refit the valve.
tomotive	Grade 5 3 rd year.	
Service Carry out major service as follows: Check/replace/adjust wiper blades.	Carry out major service as follows:	Grade 5 3 rd year.
	The teacher:	
		Discusses the purpose of wiper blades.
		 Discusses how to check, replace and adjust wiper blades.
		 Demonstrates how to check, replace and adjust wiper blades.
		The learners complete the following activities:
		Identify the wiper blades.
		• Carry out major service as follows:

		Grade S	5: Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
			Check, replace and adjusts the wiper blades.
8	Specialist	Grade 5 1 st year.	Grade 5 1 st year.
	hand tools	• Identify, care and use of the :	The teacher:
		Bearing puller.	Discusses the purpose of the bearing puller.
			 Discusses and demonstrates how to use the bearing puller.
			The learners complete the following activities:
			Identify the bearing puller.
			Use the bearing puller.
			Remove a bearing using a bearing puller.
	Specialist	Grade 5 2 nd year.	Grade 5 2 nd year.
	hand tools • Hone a cylinder bore.	Hone a cylinder bore.	The teacher:
			Discusses safety precautions when using the cylinder hone.
			• Discusses and demonstrates how to fit tool in drill and hone cylinder
			bore.
			Discusses and demonstrate how to control the speed of the drill to get
			correct crisscrossing of lines.
			The learners complete the following activities:
			• Identify the cylinder bore hone, the hand drill and cylinder bore.
			Fit tool into the hand drill.
			Lubricate clean bore with paraffin.
			Hone the cylinder bore with honing tool.
			Control drill speed to give correct crisscrossing of lines in cylinder bore.

		Grade 5	: Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
	Automotive service	 Grade 5 3rd year. Carry out the major service as follows: Check/adjust tappets. 	 Grade 5 3rd year. The teacher: Discusses the reasons for checking tappets in a vehicle. Discusses and demonstrates how to set the engine to check tappets. Discusses and demonstrates how to check and adjust tappets. The learners complete the following activities:
			 Identify the tappets and the feeler gauge. Set the engine to adjust the tappets using the rocking method. Check and adjusts the tappets.
9	Specialist	Grade 5 1 st year.	Grade 5 1 st year
	hand tools	Identify, care and use of the: Stud remover.	 The teacher: Discusses and demonstrates how to shock and lubricate the stud before removal. Discusses and demonstrates how to use the stud remover to remove a broken stud. The learners complete the following activities: Identify the stud remover. Shock and lubricate the broken stud. Use the stud remover to remove the broken stud. Grade 5 2nd year.
	Automotive	Grade 5 2 nd year.	The teacher:
	components	Identify, remove and refit a radiator.	Discusses and demonstrates how to drain the water in the radiator.

Grade 5: Term 1			Term 1
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources
			 Discusses and demonstrates how to remove and refit the radiator. The learners complete the following activities: Identify the radiator and the draining points. Observe safety precautions when removing and refitting the radiator. Drain the water from the radiator. Remove and refit the radiator.
	Automotive service	 Grade 5 3rd year. Carry out the major service as follows: Check/adjust engine timing. 	 Grade 5 3rd year. The teacher: Discusses and demonstrates how to connect the timing light. Discusses and demonstrates how to check and adjust timing. The learners complete the following activities: Observe safety precautions when checking and adjusting engine timing. Identify correct the timing marks on the engine block.
			Identify the timing light.Connect up the timing light.Check and adjusts engine timing.

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	Gr	ade 5 1 st year	Gr	ade 5 2 nd year	Gr	ade 5 3 rd year
2	•	Remove the brake	٠	Remove the front pulley.	٠	Adjust the handbrake
		return springs	•	Refit the front pulley.		inside the vehicle.
	•	Refit the brake return			•	Adjust the handbrake
		springs.				under the vehicle.
3.	٠	Use a valve spring lifter	٠	Remove the water pump.	٠	Remove the timing be
		to remove a valve.	•	Refit the water pump.		cover.
	•	2. Use a valve spring			•	Refit the timing be
		lifter to refit a valve.				cover.
4	٠	Grind a valve with rough	٠	Fit a piston in a cylinder	•	Fit the timing belt.
		grinding paste.		bore.	•	Remove the timing belt
	•	Grind a valve with fine	•	Remove the piston from		
		grinding paste.		the cylinder bore.		
5	•	Remove the piston rings	٠	Remove the crankshaft	٠	Replace a fan belt.
		from the piston.		from the engine block.	•	Adjust the fan belt.
	•	Clean piston grooves.	•	Refit the crankshaft to the		
				engine block.		
6	•	Fit the honing tool in the	•	Remove a welsh plug.	٠	Remove suspensio
		hand drill.	•	Replace the welsh plug.		bushes.
	•	Use the honing tool.			•	Replace suspensio
						bushes.
7	٠	Connect timing light.	٠	Remove a valve.	٠	Remove wiper.
	•	Use timing light.	٠	Refit a valve.	•	Replace wiper blade.
8	•	Use a bearing pulley.	٠	Hone cylinder bore.	٠	Rock the tappets.
	•	Remove a bearing.	•	Control speed of drill	•	Adjust the tappets.
				when honing.		
9	1.	Shock and lubricate	1.	Remove radiator.	1.	Connect timing light.
		broken stud.	2.	Refit radiator.	2.	Adjust distributor timing
	2.	Remove broken stud.				

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

Week	Grade 5 1 st year	Grade 5 2 nd year.	Grade 5 with different 3"
			year.
2	• State the purpose of the brake spring pliers.	• State the purpose of the front pulley.	State the purpose of th handbrake.
3	State the purpose of the valve spring compressor.	State the purpose of the water pump.	State the purpose of th timing light.
4	State the purpose of the valve grinder.	• State the purpose of the piston.	State why we replace the timing belt.
5	State the purpose of the piston ring groove cleaner.	State the purpose of the crankshaft.	• State why we adjust th fan belt.
6	• State the purpose of the cylinder hone.	State the purpose of welsh plugs.	State the purpose of suspension bushes.
7	State the purpose of the timing light.	• State why we grind the cylinder head valves.	State the purpose of th wiper blades.
8	State the purpose of the bearing puller.	• State why we use paraffin to hone the cylinder bore.	 State why we adjust tappets.
9	• State the purpose of the stud remover.	• State the purpose of the radiator.	State why we set engin timing.

3.2.6 Grade 5: 1^{st} , 2^{nd} and 3^{rd} year. Term 2.

		Grade 5: Te	erm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
1	World of	Grade 5 1 st year.	Grade 5 1 st year.
	Work/learner	Identify the criteria for the learner work experience	The teacher:
	work	programme.	 Discusses the criteria for the work experience programme.
	experience	• State the benefits and conditions for the worker in	 Discusses the benefits and conditions for the worker.
	programme.	the world of work.	• Discusses how and when the learner can participate in the work
		Participate in the learner work experience	experience programme.
		programme (LWEP).	The learners complete the following activities:
			 State the criteria for the work experience programme.
			State the benefits for the worker in the world of work.
			Participate in the work experience programme.
	World of work.	 Grade 5 2nd year. Prepare for a job interview. 	Grade 5 2nd year. The teacher:
		Work with competence.	 Discusses how to prepare for a job interview.
		Have good work tolerance.	Discusses how to work with competence.
			 Discusses how to have good work tolerance.
			The learners complete the following activities:
			State how to prepare for a job interview.
			State how to work with competence and have good work tolerance.
			Take part in mock job interviews.
	Driver training.		

		Grade 5: Te	erm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Grade 5 3 rd year.	Grade 5 3 rd year.
		 Know how to book for a learners test. 	The teacher:
		Know what to expect for a learner's test.	 Discusses how to book for a learner's test.
		• Know what to take when booking for a learners	Discusses what to expect for a learners test.
		test.	Discusses the content of the K53 manual.
			 Discusses what to take when booking for a learner's test.
			The learners complete the following activities:
			State how to book for a learner's test.
			Practice the K53 book.
			 State what to take when booking for a learner's test.
2.	Measuring	Grade 5 1 st year.	Grade 5 1 st year.
	instruments	Identify, care and use of a	The teacher:
		Vernier calliper:	• Discusses the purpose of the vernier calliper and the digital vernier
		Digital vernier calliper.	calliper.
			 Discusses and demonstrates how to use both callipers.
			The learners complete the following activities:
			State the purpose of the vernier.
			 Identify the vernier calliper and the digital vernier calliper.
			• Use the vernier calliper and the digital vernier calliper.
	Automotive	Grade 5 2nd year.	Grade 5 2 nd year.
	components	 Identify, remove and refit brake disc pads. 	The teacher:
			Discusses the purpose of the brake disc pads.

		Grade 5: 1	Ferm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive service	Grade 5 3 rd year. • Carry out the major service as follows: Check/adjust tyre pressures. Check depth of tyre thread.	 Discusses and demonstrate how to remove and refit brake disc pads. Discusses safety precautions when removing and refitting brake disc pads. The learners complete the following activities: State the purpose of the disc pads. Identify brake disc pads. Observe safety precautions when working on the brake disc pads. Remove and refit brake disc pads. Grade 5 3rd year. The teacher: Discusses and demonstrates how to check and adjust tyre pressures. Discusses and demonstrates how to check thread depth. The learners complete the following activities: State the purpose of tyre pressure. Identify the tyre, the tyre thread, the tyre valves and the tyre pressure gauge. Check the tyre pressure. Adjust the tyre pressure.
3	Engineering	Grade 5 1 st year.	Grade 5 1 st year.
	measuring	Identify, care and use of a :	The teacher:
	tools	Micrometer	Discusses and demonstrates how to use the micrometer and the digital
		Digital micrometer.	micrometer.
			The learners complete the following activities:

		Grade 5:	Term 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Automotive components	Grade 5 2nd year Identify, remove and refit brake shoes. 	 State the purpose of the micrometer. Identify the micrometer and the digital micrometer. Use the micrometer and the digital micrometer. Grade 5 2nd year. The teacher: Discusses and demonstrates how to remove and refit the brake shoes. Discusses safety precautions when removing and refitting the brake
			 shoes. The learners complete the following activities. State the purpose of the brake shoes. Identify the brake shoes. Observe safety precautions when removing and refitting brake shoes. Remove and refit brake shoes.
	Automotive service	Grade 5 3 rd year. • Carry out the major service as follows: Check/repair water leaks. Check/repair oil leaks.	 The teacher: Discusses and demonstrates how to check and repair water and oil leaks. Discusses safety precautions observed when repairing water and oil leaks. The learners complete the following activities: States the purpose of repairing water and oil leaks. Observes safety precautions when repairing water and oil leaks.

		Grade 5: 1	Ferm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Checks and repair water and oil leaks.
4	Engineering	Grade 5 1 st year.	Grade 5 1 st year.
	measuring	Identify, care and use of a:	The teacher:
	tools	Dial gauge	• Discusses and demonstrates how to set and use the dial gauge.
			The learners complete the following activities:
			State the purpose of the dial gauge.
			 Identify the dial gauge and the magnetic base.
			Set up and uses the dial gauge.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	Identify, remove and refit the brake slave cylinder.	The teacher:
			Discusses the purpose of the brake slave cylinder.
			• Discusses and demonstrates how to remove and refit the brake slave
			cylinder.
			The learners complete the following activities:
			State the purpose of the brake slave cylinder.
			Identify the brake slave cylinder.
			Remove and refit the brake slave cylinder.
			Grade 5 3 rd year.
	Automotive	Grade 5 3 rd year.	The teacher:
	service	Carry out the major service as follows:	• Discusses and demonstrates how to check and tighten loose nuts and

	-	Grade 5: To	erm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Check/tighten loose nuts and bolts.	bolts.
			The learners complete the following activities:
			Identify loose nuts and bolts.
			Check and tighten loose nuts and bolts.
5	Garage	Grade 5 1 st year.	Grade 5 1 st year.
	equipment	• Identify, care and use of a tyre changing machine.	The teacher:
		Breaking a bead on the tyre.	• Discusses and demonstrates how to care and use the tyre changing
			machine.
			Discusses safety precautions when using the tyre changing machine.
			 Discusses how to break the bead on the tyre.
			Discusses and demonstrates how to break the bead on the tyre.
			The learners complete the following activities:
			Identify the tyre changing machine.
	Automotive	Grade 5 2 nd year.	State the purpose of the tyre changing machine.
	equipment	Identify, remove and refit the rubber seals from the	Observe safety precautions when using the tyre changing machine.
		piston in a brake slave cylinder as well as hone the	Set up the tyre changing machine.
		cylinder.	 Break the bead on a tyre using the tyre changing machine.
			Grade 5 2 nd year.
			The teacher:
			• Discusses and demonstrates how to remove and refit the seals in the
			piston in the brake slave cylinder.
			 Discusses and demonstrates how to hone the brake slave cylinder and
			refit seals in the cylinder.

Grade 5: Term 2				
/eek	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
			 Discusses and demonstrates how to bleed the brakes. 	
			The learners complete the following activities:	
			 Identify the brake slave cylinder pistons and seals. 	
			• State the reason for changing seals in the brake slave cylinder.	
			Remove the seals in the cylinder.	
			Hone the cylinder and replace the seals in the piston in the cylinder	
			Bleed the brakes.	
			Grade 5 3 rd year.	
	Automotive	Grade 5 3 rd year.	The teacher:	
	service	Carry out the major service as follows:	Discusses further checks to be carried out in a major service.	
		Carry out further checks as per major service check	Discusses and demonstrates how to grease the grease nipples.	
		sheet.	 Discusses and demonstrates how to fill up the grease gun. 	
	Inspection and	Grease all grease nipples.	• Demonstrates how to carry out further checks as per major service.	
	lubrication		The learners complete the following activities:	
			Carry out further checks as per major service.	
			 Identify the grease gun and the grease nipples. 	
			State the reason for greasing a vehicle.	
			• Fill up the grease gun.	
			Grease the grease nipples.	
	Garage	Grade 5 1 st year.	Grade 5 1 st year.	
	equipment	• Identify, care and use of the tyre changing	The teacher:	
		machine.	• Discusses safety precautions when removing the tyre from the rim.	

		Grade 5: Te	erm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Remove the tyre from the rim.	 Discusses and demonstrates how to fit the tyre onto the tyre changing machine. Discusses and demonstrates how to remove the tyre from the rim. The learners complete the following activities. Observe safety precautions when removing the tyre from the rim. State the reason for removing the tyre from the rim. Fit the tyre onto the tyre changing machine. Remove the tyre from the rim.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	• Identify, remove and refit the ball joints in a tie	The teacher:
		rod/track rod.	 Discusses the purpose of the ball joints in a tie/track rod. Discusses and demonstrates how to remove/adjust/ replace the ball joint in the tie/track rod. The learners complete the following activities. Identify the ball joint and the tie/track rod. State the purpose of the ball joint. Remove/adjust/replace the ball joint in the tie/track rod.
	The battery	Grade 5 3rd year. Observe safety practices and protocols when working on auto electrical systems. Remove and replace the battery.	 Grade 5 3rd year. The teacher: Discusses the purpose of the battery. Discusses safety precautions and protocols when working on auto electrical systems.

		Grade 5: Te	erm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Discusses how to remove and replace a battery.
			 Demonstrates how to remove and replace a battery.
			The learners complete the following activities.
			Identify the battery.
			Observe safety precautions and protocol when working on auto
			electrical systems.
			State the purpose of the battery.
			Remove and replace the battery.
7	Garage	Grade 5 1 st year.	Grade 5 1 st year.
	equipment	• Identify, care and use of the tyre changing	The teacher:
		machine.	• Discusses safety precautions observed when fitting the tyre onto the
		Fitting a tyre onto a rim	rim.
			• Discusses and demonstrates how to lubricate the tyre with soapy water.
			 Discusses and demonstrates how to fit the tyre onto the rim.
			The learners complete the following activities:
			Observe safety precautions when fitting the tyre onto the rim.
			Lubricate the tyre with soapy water.
			Fit the tyre onto the rim.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	Identify, remove and refit a MacPherson or similar	The teacher:
		strut.	 Discusses the purpose of the MacPherson or similar strut.
			 Discusses safety precautions when removing and refitting a

		Grade 5: Te	erm 2	
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
	The main electrical components	Grade 5 3 rd year. Replace a blown fuse. Use a strip connector.	 MacPherson or similar strut. Discusses and demonstrates how to remove and refit a MacPherson strut. The learners complete the following activities: Identify the MacPherson or similar strut. State the purpose of the MacPherson strut. Observe safety precautions when removing or refitting the Macpherson or similar strut. Remove and refit the strut. Grade 5 3rd year. The teacher: Discusses and demonstrates how to replace a fuse. Discusses and demonstrates how to use a strip connector. The learners complete the following activities: Identify the fuse and strip connector. State the purpose of the fuse and strip connector. Replace a blown fuse. Use a strip connector. 	
8	Garage equipment	 Grade 5 1st year. Identify, care and use of the tyre changing 	Grade 5 1st year. The teacher:	
	- 1	machine.	 Discusses safety precautions when inflating a tyre and repairing leaks. 	
		 Inflating the tyre and checking and repairing leaks. 	• Discusses and demonstrates how to inflate a tyre and check for leaks.	
			The learners complete the following activities:	

		Grade 5: T	erm 2
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Observe safety precautions when inflating a tyre.
			• State the purpose for inflating the tyre and checking for leaks.
			Identify the tyre pressure gauge.
			Inflate a tyre and checks for leaks.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	equipment	 Identify and remove a CV joint or a propeller shaft. 	The teacher:
			Discusses the purpose of the CV joint or propeller shaft.
			Discusses safety precautions observed when removing a CV joint or a
			propeller shaft.
			• Discusses and demonstrates how to remove a CV joint or propeller
			shaft.
			The learners complete the following activities:
			Identify the CV joint or propeller shaft.
			State the purpose of the CV joint or propeller shaft.
			Observe safety precautions when removing the CV joint or propeller.
			Remove the CV joint or propeller shaft.
	T I		
	The main	Grade 5 3 rd year.	Grade 5 3 rd year.
	electrical	Remove a starter.	The teacher:
	components		Discusses safety precautions observed when removing the starter.
			Discusses the purpose of the starter.
			Discusses and demonstrates how to remove the starter.
			The learners complete the following activities:

	Grade 5: Term 2				
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.		
			Observe safety precautions when removing the starter.		
			State the purpose of the starter.		
			Disconnect the battery.		
			Remove the starter.		
9	Garage	Grade 5 1 st year.	Grade 5 1 st year.		
	equipment	• Identify, care and use of the battery charger.	The teacher:		
			 Discusses the purpose of the battery charger. 		
			• Discusses safety precautions observed when using the battery charger.		
			• Discusses and demonstrates how to connect up the battery charger.		
			 Discusses and demonstrates how to connect up a battery. 		
			Discusses and demonstrates how to charge a battery.		
			The learners complete the following activities:		
			Identify the battery charger.		
			State the purpose of the battery charger.		
			 Observe safety precautions when using a battery charger. 		
			Connect up the battery charger.		
			Connect up and charge a battery.		
			Grade 5 2 nd year.		
	Automotive	Grade 5 2 nd year.	The teacher:		
	components	Identify and fit a CV joint or a propeller shaft.	Discusses the purpose of the CV joint.		
			 Discusses safety precautions when fitting a CV joint or propeller shaft. 		
			 Discusses and demonstrates how to fit a CV joint or propeller shaft. 		

Grade 5: Term 2					
Week Topic	Content The learner must be able to:	Teaching tips, techniques, activities and resources.			
The ma electrical components	ain Grade 5 3 rd year. Replace a starter.	 The learners complete the following activities: Observe safety precautions when fitting the CV joint or propeller shaft. Fit the CV joint or propeller shaft. Grade 5 3rd year. The teacher: Discusses safety precautions when fitting the starter. Discusses and demonstrates how to replace the starter. Discusses and demonstrates how to connect up the battery. The learners complete the following activities: Observes safety precautions when fitting the starter. Fits the starter. Connects the battery. 			

10 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	Gr	ade 5 1 st year	Gr	ade 5 2 nd year	Gr	ade 5 3 rd year
2	•	Use a vernier calliper. Use a digital vernier	•	Remove brake disc pads. Refit brake disc pads.	•	Check tyre pressure. Adjust tyre pressure.
		calliper.				
3	•	Use a micrometer.	•	Remove brake shoes.	•	Repair water leaks.
	•	Use a digital micrometer.	•	Refit brake shoes.	•	Repair oil leaks.
4	•	Set up a dial gauge.	٠	Remove brake slave	•	Checks loose nuts an
	•	Use a dial gauge.		cylinder.		bolts.
			•	Refit brake slave cylinder.	•	Tightens loose nuts an
						bolts.
5	•	Set up the tyre changing	•	Remove the seals in the	•	Fills up the grease gun.
		machine.		brake slave cylinder.	•	Grease the greas
	•	Break the tyre bead.	•	Hone the cylinder and		nipples.
				replace seals.		
6	•	Fit the wheel onto the	•	Remove the ball joint from	٠	Remove the battery.
		tyre changing machine.		the tie rod.	•	Refit the battery.
	•	Removes the tyre from	•	Refit the ball joint onto the		
		the rim.		tie rod.		
7	•	Lubricate the tyre with	٠	Remove the strut.	٠	Replace a blown fuse.
		soapy water.	•	Refit the strut.	•	Use a strip connector.
	•	Fit the tyre onto the rim.				
8	•	Inflate a tyre.	٠	Remove the front hub.	٠	Disconnect the battery.
	•	Check for and repairs	•	Remove the CV joint.	•	Remove the starter.
		leaks.				
9	•	Connect up the battery	٠	Fit the CV joint.	٠	Fit the starter.
		charger.	•	Fit the hub.	•	Connect the battery.
	•	Connect the battery and				
		charge.				

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 st year	Grade 5 2 nd year	Grade 5 3 rd year
2	State the purpose of the vernier.	State the purpose of the disc pads.	State the reasons fo correct tyre pressures.
3	State the purpose of the micrometer.	State the purpose of the brake shoes.	 State the reason for repairing water and or leaks.
4	State the purpose of the dial gauge.	State the purpose of the brake slave cylinder.	State the reason for tightening loose nuts and bolts.
5	 State the purpose of the tyre changing machine. 	State the reason for bleeding the brakes.	 State the reason for greasing the vehicle.
6	 State the reason fo removing the tyre from the rim. 		State the purpose of th battery.
7	 State the reason fo lubricating the tyre before fitting on a rim. 		State the purpose of fuse.
8	 State the reason fo inflating a tyre and checking for air leaks. 		State the purpose of starter.
9	State the purpose of the battery charger.	State the reason for greasing the CV joints.	 State the reasons for changing the brushes i the starter.

3.2.7 Grade 5: 1^{st} , 2^{nd} , 3^{rd} year. Term 3.

		Grade 5:	5: Term 3		
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.		
1	Workshop health and safety	 Grade 5 1st year. Identify the location of the fire extinguisher. Identify, care and use of the fire extinguisher. 	 Grade 5 1st year. The teacher: Discusses the location of fire extinguishers. 		
		 Observe procedures for emergencies. Report accidents and emergencies. 	 Discusses the care and use of fire extinguishers. Discusses emergency procedures. Discusses how to report accidents and emergencies. The learners complete the following activities: State where fire extinguishers must be located. Identify, care and uses fire extinguishers. Observe procedures for emergencies. Report accidents and emergencies. 		
	Good housekeeping	 Grade 5 2nd year Observe organisational housekeeping policies and procedures. Comply with housekeeping procedures and policies. Identify and report shortcomings in housekeeping practices. Comply with relevant safety routines. Ensure that workstations conform to health and safety requirements. 	 Grade 5 2nd year. The teacher: Discusses and demonstrates how set tools and equipment in sequence. Discusses good housekeeping procedures. Discusses and demonstrates housekeeping procedures and policies. Discusses how to identify and report shortcomings in housekeeping practices. The learners complete the following activities: State the reasons for placing tools and equipment in sequence. 		

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
		· · · · ·	State the reasons for good housekeeping practices.
			Set tools and equipment in the workshop.
			Clean up and reset the workshop and tool room.
	World of work		Grade 5 3 rd year.
		Grade 5 3 rd year.	The teacher:
		Practice appropriate social skills training.	 Discusses appropriate social skills in the work environment.
		• Be orientated to the open labour market.	 Discusses how to be orientated to the open labour market.
		Perform personal management/activities for	Discusses daily planning.
		daily living.	Discusses the Learner work experience programme (LWEP).
			Demonstrates appropriate social skills in the workplace.
			The learners complete the following activities:
			• State the appropriate social skills practiced in the work environment.
			State ways to be orientated in the open labour market.
			Carry out daily planning.
			Demonstrate appropriate social skills practices in the worl
			environment.
			Compile a CV.
			Participate in a work experience programme.
2	Garage	Grade 5 1 st year.	Grade 5 1 st year.
	equipment	• Identify, care and use of the wheel balancing	The teacher:
		machine.	Discusses and demonstrates how to use and care for a whee
			balancing machine.
	1		

	Grade 5: Term 3				
ek	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.		
			Discusses safety when using the machine.		
			The learners complete the following activities:		
			Identify the machine.		
			State the purpose of the machine.		
			Observe safety precautions when using the machine.		
			Connect up the machine.		
			Switch the machine on and off.		
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.		
	components	 Identify and remove a shock absorber. 	The teacher:		
			Discusses the purpose of the shock absorber.		
			Discusses how to test for a defective shock absorber.		
			• Discusses and demonstrates how to check and remove the sh		
			absorber.		
			The learners complete the following activities:		
			Identify the shock absorber.		
			• State the purpose of the shock absorber.		
			Check for a defective shock absorber.		
			Remove the shock absorber.		
	The mein				
	The main electrical	Grade 5 3 rd year.	Grade 5 3 rd year.		
		 Remove brushes from a starter. 	The teacher:		
	components		Discusses the purpose of the starter.		

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
			Discusses the purpose of the brushes in the starter.
			• Discusses and demonstrates how to remove the brushes in the starter.
			Demonstrates how to strip a starter.
			The learners complete the following activities:
			Identify the starter.
			State the purpose of the starter.
			• Strip the starter.
			Remove the brushes from the starter.
3	Garage	Grade 5 1 st year.	Grade 5 1 st year.
	equipment	• Identify, care and use of the wheel balancing	The teacher:
		machine.	Discusses safety precautions when balancing a wheel.
			Discusses and demonstrates how to fit a tyre on the wheel balancing
			machine.
			• Discusses and demonstrate how to set the machine to balance the
			tyre.
			The learners complete the following activities:
			Observe safety precautions when balancing the wheel.
			Fit the wheel onto the machine.
			Set the machine to balance the wheel.
	Automotive	Grade 5 2 nd year	Grade 5 2 nd year.
	equipment	 Identify and refit a shock absorber. 	The teacher:
			 Discusses the reason for refitting a shock absorber.

		Grade 5:	5: Term 3		
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.		
	The main electrical components	 Grade 5 3rd year. Replace brushes on a starter. Test the starter. 	 Discusses and demonstrates how to refit and secure the shock absorber. The learners complete the following activities: State the reason for replacing the shock absorber. Refit the shock absorber. Grade 5 3rd year. The teacher: Discusses the reason for replacing the brushes in the starter. Discusses and demonstrates how to replace the brushes in the starter. Discusses and demonstrates how to reassemble the starter. Discusses and demonstrates how to reassemble the starter. The learners complete the following activities: State the reason for replacing the brushes in the starter. Discusses and demonstrates how to reassemble the starter. Use a soldering iron. Use a soldering iron. Replace the brushes in the starter. 		
4	Garage	Grade 5 1 st year.	Grade 5 1 st year.		
	equipment	• Identify, care and use of the wheel balancing	The teacher:		
		machine.	 Discusses and demonstrates how to switch the machine on. 		
			 Discusses the purpose of the tyre weights. 		

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Automotive equipment	 Grade 5 2nd year. Identify and remove the front hubs and bearings. 	 Discusses and demonstrates how to balance the wheel using different weights. Discusses and demonstrates how to switch off the machine and remove the wheel. The learners complete the following activities: State the purpose of the wheel weights. Switch the machine on. Balance the wheel using different weights. Switch the machine off and removes the wheel. Grade 5 2nd year. The teacher: Discusses and demonstrates how to remove the front hubs and bearings. Discusses and demonstrates how to remove the front hubs and bearings. The learners complete the following activities: Identify the hub and bearing. Observe safety precautions when removing the hub. Remove the hub and bearings.
	The main electrical	 Grade 5 3rd year. Remove an alternator. 	Grade 5 3rd year. The teacher:

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	components		States the purpose of the alternator.
			• Discusses and demonstrates how to disconnect wires from the
			alternator.
			Discusses and demonstrates how to remove the alternator.
			The learners complete the following activities:
			Identify the alternator.
			State the purpose of the alternator.
			Remove the wires from the alternator.
			Remove the alternator.
5	Fundamental	Grade 5 1 st year.	Grade 5 1 st year.
	engine	Discuss the fuel system.	The teacher:
	technology	Discuss the ignition system.	Discusses the purpose of the fuel system.
			Discusses and demonstrates how to remove and replace the fuel
			filters.
			Discusses the purpose of the ignition system.
			The learners complete the following activities:
			Identify the fuel system.
			Identify the ignition system.
			State the purpose of the fuel system.
			State the purpose of the ignition system.
	Automotive		Remove and replace the fuel filters.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	components	 Identify and refit the front hubs and bearings. 	The teacher:

	Grade 5: Term 3			
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.	
	The mail electrical components	Grade 5 3 rd year. • Replace an alternator.	 Discusses and demonstrates how to wash and inspect wheel bearings. Discusses and demonstrates how to replace wheel bearings. Discusses and demonstrates how to repack wheel bearings with grease. Discusses and demonstrates how to refit front hubs and bearings. The learners complete the following activities: Wash and inspect the wheel bearings. Replace wheel bearings. Refit hubs and wheel bearings. Grade 5 3rd year. The teacher: Discusses and demonstrates how to replace the alternator. Discusses and demonstrates how to fit wiring back to the alternator. The learners complete the following activities: Replace the alternator and wiring. Replace the alternator. Replace the alternator. 	
6	Fundamental	Grade 5 1 st year.	Grade 5 1 st year.	
	engine	Discuss cooling and lubrication of an engine.	The teacher:	
	technology	Discusses cooling of an engine.		
			Discusses and demonstrates how to check water pipes.	

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
	Automotive components	Grade 5 2 nd year. • Identify and remove the silencer box.	 Discusses and demonstrates how to check and correct anti-freeze levels. Discusses lubrication of the engine. The learners complete the following activities: Identify the cooling and lubrication systems in the engine. State the purpose of the cooling and lubrication systems. Check and replaces defective water pipes. Check and correct antifreeze levels. Grade 5 2nd year. The teacher: Discusses the purpose of the exhaust system and the silencer box. Discusses and demonstrates how to replace the exhaust system and the silencer box. Identify the exhaust system and the silencer box. Identify the exhaust system and the silencer box. State the purpose of the exhaust system and the silencer box. Remove and the silencer box.
	Automotive components	 Grade 5 3rd year. Remove and replace a distributor. Remove and replace a coil. 	 Grade 5 3rd year. The teacher: Discusses the purpose of the distributor and the coil. Discusses and demonstrates how to remove and replace the distributer and the coil.

	Grade 5: Term 3				
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.		
			The learners complete the following activities:		
			Identify the distributor and the coil.		
			• State the purpose of the distributor and the coil.		
			Remove and replace the coil.		
7	Automotive	Grade 5 1 st year.	Grade 5 1 st year.		
	components	• Discuss the clutch.	The teacher:		
		Discuss the gearbox.	 Discusses the purpose of the clutch and the gear box. 		
			 Discusses safety precautions when working on the clutch and the gear 		
			box.		
			• Discusses and demonstrates how to remove and refit the clutch and		
			the gear box.		
			The learners complete the following activities:		
			Identify the clutch and the gear box.		
			State the purpose of the clutch and the gear box.		
			Remove the clutch.		
			Remove the gearbox.		
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.		
	components	 Identify and refit the silencer box. 	The teacher:		
			Discusses the purpose of the silencer box.		
			Discusses and demonstrates how to refit the silencer box.		
			 Discusses and demonstrates how to repair the silencer box. 		
			The learners complete the following activities:		

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
			Identify the silencer box and the gaskets.
			• State the purpose of the silencer box and the gaskets.
			Refit the silencer box.
			Repair the silencer box.
	Automotive	Grade 5 3 rd year.	Grade 5 3 rd year.
	service	Replace wiper blades.	The teacher:
		Charge the battery.	 Discusses and demonstrates how to Replace the wiper blades.
		Test and Replace globes.	Discusses and demonstrates how to charge the battery.
			Discusses and demonstrates how to test and Replace globes.
			The learners complete the following activities:
			• Identify the wiper blade, the battery, the battery charger, the globes
			and the multi-meter.
			State the purpose of replacing the wiper blades.
			State the purpose of charging the battery.
			Replace the wiper blade.
			Charge the battery.
			Test and replace globes.
8	Fundamental	Grade 5 1 st year.	Grade 5 1 st year.
	engine	Discuss the transmission system.	The teacher:
	technology		Discusses the transmission system and its purpose.
			Discusses the clutch and gearbox.
			• Discusses and demonstrates how to remove and refit the gear lever.

	Grade 5: Term 3			
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.	
Week	Automotive service	 Grade 5 2nd year. State what a major service is. Plan and prepare for a major service. Carry out the major service as follows: Replace engine oil and filter. 	 Discusses and demonstrates how to remove and replace the release bearing. The learners complete the following activities: Identify the transmission system. State the purpose of the gear lever. States the purpose of the release bearing. Remove and replace the gear lever. Remove and replace the release bearing. Grade 5 2nd year. The teacher: Discusses how to plan and prepare for a major service. Discusses and demonstrates how to replace the engine oil filter and the engine oil. The learners complete the following activities: State how to plan and prepare for a major service. State how to plan and prepare for a major service. 	
	The multi- meter. Checking and replacing of	 Grade 5 3rd year. Use a multi-meter for basic checks. Check/replace/adjust fan belt. 	 Grade 5 3rd year. The teacher: Discusses and demonstrates how to use the multi-meter. Discusses and demonstrates how to check, replace and adjust fan 	

		Grade 5:	Term 3
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.
9 9	fan belts Fundamental	Grade 5 1 st year.	belts. The learners complete the following activities: Identify the multi-meter. State the purpose of the multi-meter. State why we check, replace and adjust the fan belt. Use the multi-meter to fault find. Check, replace and adjust the fan belt. Grade 5 1 st year.
	engine	Discuss the braking system.	The teacher:
	technology		 Discusses the braking system. Discusses and demonstrates how to replace the brake fluid in the system. Discusses and demonstrates how to bleed the system. Demonstrates how to secure all brake pipes. The learners complete the following activities: Identify the different parts of the braking system. State the reason for replacing the brake fluid in the system. Replace the brake fluid in the system. Bleed the braking system.
	Automotive service	 Grade 5 2nd year. Carry out major service as follows: Replace air filter. 	 Grade 5 2nd year. The teacher: Discusses the purpose of the air filter. Discusses and demonstrates how to remove and replace the air filter.

	Grade 5: Term 3				
Week	Торіс	Content The learner must be able to;	Teaching tips, techniques, activities and resources.		
Week	Basic welding	 The learner must be able to; Grade 5 3rd year. Observe safety precautions when welding. State safety protection when welding. 	 The learners complete the following activities: Identify the air filter. State the purpose of the air filter. Remove and replace the air filter. Grade 5 3rd year. The teacher: Discusses safety precautions observed when welding. Discusses and demonstrates how use the leather apron, welding gloves, leather spats, welding helmet and welding cap. 		
		C	 The learners complete the following activities. Observe safety precautions when welding. Use leather apron, welding gloves, leather spats, welding helmet and welding cap when welding. 		

N

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 st year.	Grade 5 2 nd year.	Grade 5 3 rd year.
2	• Connects up the wheel balancing	Checks for defective shock absorbers.	Strips the starter.
	machine.	Removes the shock absorber.	Removes the brushes from the starter
	• Switches the machine on and off.		
3	• Fit the wheel to the wheel balancing	Refits the shock absorber.	Use a soldering iron.
	machine.	Secures the shock absorber.	• Replaces the brushes in the starter.
	• Set the wheel balancing machine.		
4	Balance the wheel.	Removes the hubs.	Remove the alternator wiring.
	• Remove the wheel from the	Removes the bearings.	Remove the alternator.
	machine.		
5	Remove the fuel filter.	Wash the wheel bearings.	Replace the alternator.
	Replace the fuel filter.	Pack the wheel bearings with grease.	Refit the alternator wiring.
6	Replace defective water pipes.	Remove silencer mountings.	Remove the coil.
	Corrects antifreeze levels.	Remove the silencer box.	Replace the coil.
7	Remove the clutch.	Refit the silencer box.	Charge the battery.
	Remove the gear box.	Refit the silencer mountings.	Test and replace globes.
8	Remove the release bearings.	Replace the engine oil.	Check and replace the fan belt.
	Replace the release bearings.	Replace the engine oil filter.	Adjust the fan belt.
9	Remove brake fluid from the braking	Remove the air filter.	Use a welding apron.
	system.	Replace the air filter.	Use a welding helmet.
	Bleed the braking system.		

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 st year	Grade 5 2 nd year.	Grade 5 3 rd year.
2	• State the purpose of the wheel balancing machine.	• State the purpose of the shock absorber.	State the purpose of the starter.
3	• State the purpose of the balancing weights.	• State the reason for replacing shock absorbers	State the purpose of the soldering iron.
4	• State the reason for balancing a wheel.	State the purpose of the hubs.	• State the purpose of the alternator.
5	• State the purpose of the fuel system.	• State the reason for greasing the wheel bearings.	• State the purpose of the alternator belt.
6	• State the purpose of antifreeze.	• State the purpose of the exhaust system.	State the purpose of the coil.
7	State the purpose of the coil.	• State the purpose of the exhaust gasket.	State the reasons for testing defective globes.
8	• State the purpose of the gear lever.	• State the purpose of the engine oil filter.	• State the reason why we adjust the fail belt.
9	State reason for replacing brake fluid.	• State the purpose of the air filter.	 State the reason for using welding protective gear.

3.2.8 Grade $5:1^{st}$, 2^{nd} , 3^{rd} year. Term 4.

	Grade 5: Term 4			
Week	Veek Topic Content The learner must be able to:		Teaching tips, techniques, activities and resources.	
1	Good	Grade 5 1 st year.	Grade 5 1 st year.	
	housekeeping	Practice good housekeeping routines.	The teacher:	
		Realise the impact of poor housekeeping	Discusses and demonstrates how to practice good housekeeping	
		routines.	routines.	
		Carry out correct and safe use of cleaning	 Discusses the impact of poor housekeeping routines. 	
		equipment and materials.	 Discusses how to report faulty equipment. 	
		Report faulty equipment.	 Demonstrates how to practice cleanliness and care of equipment. 	
		Ensure cleanliness of workstation and self.	Demonstrates how to use and care for equipment and materials.	
			The learners complete the following activities:	
			State the reasons for good housekeeping routines.	
			Clean the workshop.	
			Carry out good housekeeping practices.	
	• C		Clean and care for equipment.	
			Set and record material.	
			Report faulty equipment.	
	Good	Grade 5 2 nd year.	Grade 5 2 nd year.	
	housekeeping.	• Know how to isolate and replace faulty	The teacher:	
		equipment.	Discusses the OSH Act.	
		• Practice safe handling, use and care of tools	Discusses relevant safety routines.	
		and equipment.	 Discusses the reasons for workstations complying with health and 	
		• Store tools and equipment correctly after use.	safety requirements.	

Veek	Торіс	Grade 5: Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Understand the responsibilities of employees with regard to good housekeeping in the workplace.	 Discusses and demonstrates how to isolate and replace faulty equipment. Discusses and demonstrates safe handling, use and care of equipment. Demonstrates safety routines. The learners complete the following activities: State why the one must comply with the OSH Act. State the reasons for workstations complying with health and safety requirements. Carry out safety routines. Isolate and replace faulty equipment. Handle, use and care for equipment safely.
	HIV/AID Customer care.	 Grade 5 3rd year. Explain the rights and responsibilities of employees in the workshop with regards to AIDS. Explain how to prevent the spread of AIDS. Reception of the customer. Courtesy to the customer. After service care. 	 Grade 5 3rd year. The teacher: Discusses the rights and responsibilities of employees in the workplace with regards to AIDS. Discusses how to prevent AIDS. Discusses courtesy and reception of the customer. Discusses after care service. The learners complete the following activities: State the rights and responsibilities of the employees with regards to AIDS.

	Grade 5: Term 4			
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
			State how to prevent AIDS.	
			State how you would receive and treat a customer.	
			State how you to carry out after service care.	
2	Fundamental	Grade 5 1 st year.	Grade 5 1 st year.	
	engine	Discuss wheels and tyres.	The teacher:	
	technology		Discusses wheels and tyres.	
			Discusses different rim sizes and makes.	
			• Discusses and demonstrates the different tyre make, profiles and	
			sizes.	
			Demonstrates the different rim sizes.	
			The learners complete the following activities:	
			Identify the different types of tyres.	
			Identify rim sizes and makes.	
			Show the different rim sizes.	
			• Show the educator the different tyre sizes and profiles from the	
			markings on the tyres.	
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.	
	service	Carry out major service as follows:	The teacher:	
		Replace fuel filters.	 Discusses the different types of petrol and diesel fuel filters. 	
			 Discusses and demonstrates how to replace diesel fuel filters. 	
			 Discusses and demonstrates how to bleed the fuel system. 	
			The learners complete the following activities:	

		Grade 5:	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Identify petrol and diesel fuel filters.
			State the purpose of diesel fuel filters.
			Replace diesel fuel filters.
			Bleed the fuel system.
	Basic welding	Grade 5 3 rd year.	Grade 5 3 rd year.
		Demonstrate how to carry out basic arc welding.	The teacher:
			 Discusses safety precautions when arc welding.
			Discusses basic arc welding techniques.
			• Discusses and demonstrates how to connect up the arc welding
			machine, switch on the machine and do a butt weld.
			The learners complete the following activities:
			Identify the arc welding equipment and safety apparel.
			State the purpose of arc welding.
			Connect up the arc welding machine.
			Observe safety precautions when arc welding.
			Carry out a basic butt weld.
3	Fundamental	Grade 5 1 st year.	Grade 5 1 st year.
	engine	Discuss the suspension system.	The teacher:
	technology	Discuss the steering system.	• Discusses safety precautions when working on the suspension and
			steering systems.
			Discusses the suspension and steering system.
			Discusses and demonstrates how to replace suspension rubbers.

	Grade 5: Term 4			
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
Week	Topic Automotive service		 Teaching tips, techniques, activities and resources. The learners complete the following activities: Identify the suspension and the steering systems. State the purpose of the steering and suspension systems. Observe safety precautions when working on the suspension and steering system. Remove and replace the suspension rubbers. Grade 5 2nd year. The teacher: Discusses the major service. Discusses the purpose of replacing and gapping the spark plug. Discusses the purpose of replacing the condenser. Demonstrates how to replace the condenser. Demonstrate how to replace the condenser. The learners complete the following activities: Identify the spark plug, the feeler gauge and the condenser. Replace and gaps the spark plug. Replace the condenser. 	
			Grade 5 3 rd year. The teacher:	
	Basic welding	Grade 5 3 rd year.	Discusses safety precautions when gas welding.	

		Grade 5:	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
		Demonstrate how to carry out basic gas welding techniques.	 Discusses the purpose of gas welding. Discusses and demonstrates how to set up the equipment and carry out gas welding techniques. Demonstrates how to carry out a simple gas weld. The learners complete the following activities: Observe safety precautions when gas welding. Identify the gas welding equipment and safety apparel. State the purpose of the gas welding equipment. Set up the gas welding equipment. Carry out a simple gas weld.
4	Fundamental	Grade 5 1 st year.	Grade 5 1 st year.
	engine	Discuss the electrical system.	The teacher:
	technology	Discuss the exhaust system.	 Discusses the electrical and exhaust system. Discusses safety precautions when working on the electrical and exhaust system. Discusses and demonstrates how to use the multi-meter to fault find. The learners complete the following activities: Identify the electrical and exhaust system. State the purpose of the electrical and exhaust system. Fault find in the electrical system. Use a multi-meter to fault find.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.

Grade 5: Term 4			
Veek	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	service	Carry out major service as follows:	The teacher:
		• Drain coolant, fill antifreeze and water as per	 Discusses the purpose of antifreeze.
		requirements.	 Discusses safety precautions when working with anti freeze.
			• Discusses and demonstrates how to mix the anti freeze with water.
			 Discusses and demonstrates how to drain old anti freeze and fill a ne coolant mixture.
			The learners complete the following activities:
			 Identify the cooling system and anti freeze.
			 State the purpose of antifreeze and the cooling system.
			Mix anti freeze with water.
			Drain the old antifreeze and fill new coolant mix.
	Basic welding	Grade 5 3 rd year.	
		Demonstrate how to carry out basic gas	Grade 5 3 rd year.
		brazing techniques.	The teacher:
			Discusses safety precautions when carrying out basic gas brazir
			techniques.
			• Demonstrates how to set up the regulating valves and light up the
			nozzle for gas brazing.
			Discusses and demonstrates how to carry out gas brazing techniques
			The learners complete the following activities:
			 Identify the gas brazing equipment.
			Observe safety precautions when gas brazing.
			 State what the gas brazing equipment is being used for.

		Grade 5	: Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Set up the nozzle and lights up the torch.
			Carry out gas brazing.
5	Automotive	Grade 5 1 st year.	Grade 5 1 st year.
	components	Identify, remove and refit an engine.	The teacher:
			Discusses safety precautions when removing and refitting the engine.
			• Discusses and demonstrates how to remove and refit the engine and
			engine mountings.
			The learners complete the following activities:
			Identify the engine.
			Observe safety when removing and refitting the engine.
			Remove and refit the engine mountings.
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.
	service	Carry out the major service as follows:	The teacher:
		Replace gear box oil.	• Discusses and demonstrates how to drain and refill the gear box oil.
			• Discusses the reason for draining and refilling the gear box.
			The learners complete the following activities:
			Identify the gearbox and drain plug.
			• State the purpose of the gear box oil.
			• State the purpose of draining and refilling the gear box oil.
			Drain and refills the gear box oil.

		Grade 5:	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Joining of	Grade 5 3 rd year.	Grade 5 3 rd year.
	metal	• Demonstrate the use of a soldering iron and	The teacher:
		soldering techniques.	Discusses safety precautions when using the soldering iron.
		Use adhesive to join an article.	Discusses safety precautions when using adhesives.
			Discusses the purpose and use of the soldering iron.
			• Discusses and demonstrates how to use the soldering iron and
			soldering techniques.
			 Demonstrates how to use adhesives it join an articles
			The learners complete the following activities:
			Observe safety precautions when using the soldering iron and
			adhesives.
			 Identify the soldering iron and adhesives.
			Switch the soldering iron on.
			Use the soldering iron.
			Use the soldering iron.
			Use adhesives to join an article.
6	Main electrical	Grade 5 1 st year.	Grade 5 1 st year.
	components	Identify, remove and refit the following engine	The teacher:
		components:	• Discusses the purpose of the tappet cover and the engine sump.
		Tappet cover.	Discusses and demonstrates how to remove and refit the tappet cover
		Engine sump.	and the engine sump.
			Discusses and demonstrates how to fit new gaskets and gasket sealer
			when fitting parts.

_	Grade 5: Term 4			
Veek	Торіс	The learner must be able to:	Teaching tips, techniques, activities and resources.	
			The learners complete the following activities:	
			 Identify the tappet cover, engine sump and gaskets. 	
			• State the purpose of the tappet cover and gasket.	
			Remove and refits the tappet cover.	
			Remove and refits the engine sump.	
			• Fit new gaskets and gasket sealer.	
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.	
	service	Carry out a major service as follows:	The teacher:	
		Replace diff oil.	 Discusses the diff and the purpose of the diff oil. 	
			Discusses and demonstrates how to drain and refill diff oil.	
			The learners complete the following activities.	
			Participate in the lesson.	
			Identify the diff and drain plug.	
			• State the purpose of diff oil in the diff.	
		Grade 5 3 rd year.	Drain and refill diff oil.	
	Hand skills	Demonstrate how to cut metal using	a Grade 5 3 rd year.	
		hacksaw.	The teacher:	
			 Discusses and demonstrates how to fit a blade in the hacksaw. 	
			 Discusses and demonstrates how to mark off and cut metal using 	
			hacksaw.	
			The learners complete the following activities:	

		Grade 5:	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
			Identify the hacksaw and the hacksaw blade.
			Fit a blade in the hacksaw.
			 Mark off metal and cut metal using a hacksaw.
7	Automotive	Grade 5 1 st year.	Grade 5 1 st year.
	components	Identify, remove and refit the following engine	The teacher:
		component:	 Discusses the purpose of the cylinder head.
		Cylinder head.	Discusses and demonstrates how to remove and refit the cylinder
			head.
			 Discusses and demonstrate how to replace the head gasket.
			 Discusses and demonstrate how to torque the cylinder head.
			The learners complete the following activities:
			Identify the cylinder head, the cylinder head gasket and the torque
			wrench.
			State the purpose of the cylinder head.
			Remove and refit the cylinder head.
			Grade 5 2 nd year.
	Automotive	Grade 5 2 nd year.	The teacher:
	service	Carry out a major service as follows:	Discuss the purpose of the oil filter and oil in the automatic
		Change the oil and oil filter in an automatic	transmission.
		transmission.	Discusses and demonstrates how to replace the oil and oil filter in the
			automatic transmission.
			The learners complete out the following activities:
			 Identify the automatic transmission and the oil filter.

	Grade 5: Term 4			
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
	Hand skills	 Grade 5 3rd year. Demonstrate how to cut metal using a cut off saw. 	 State the purpose of the automatic transmission oil filter and oil. Replace the oil and oil filter in the automatic transmission. Grade 5 3rd year. The teacher: Discusses the purpose of the cut off saw. Discusses safety precautions when using the cut off saw. Discusses and demonstrates how to cut metal using the cut off saw. The learners complete the following activities: Observe safety precautions when using the cut off saw. Identify the cut off saw. State the purpose of the cut off saw. Cut metal using the cut off saw. 	
8	Automotive	Grade 5 1 st year.	Grade 5 1 st year.	
	components	 Identify, remove and refit the following engine components. Timing belt 	 The teacher: Discusses the purpose of the timing belt. Discusses and demonstrates how to remove and refit the timing belt. The learners complete the following activities: Identify the timing belt. State the purpose of the timing belt. Remove and refit the timing belt. 	
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.	
	service	Carry out the major service as follows:Check/adjust clutch cable.	The teacher:	

		Grade 5:	Term 4
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.
	Joining of metal	Grade 5 3 rd year. • Use bolts to join components together.	 Discusses the purpose of the clutch cable. Discusses and demonstrates how to check and adjust the clutch cable. The learners complete the following activities: Identify the clutch cable. Check and adjust the clutch. Grade 5 3rd year. The teacher: Discusses the different kinds of bolts. Discusses metric and imperial bolts. Discusses and demonstrates how to use bolts to join components together. The learners complete the following activities: Identify different types of bolts. State the purpose of bolts. Use bolts to join components and dismantle components.
9	Automotive components	 Grade 5 1st year. Identify, remove and refit the following engine components; Timing chain Timing gear 	 Grade 5 1st year. The teacher: Discusses the purpose of the timing chain and timing gear. Discusses and demonstrates how to remove and refit the timing chain and timing gear. The learners complete the following activities: Identify the timing chain and timing gear.

Grade 5:			i: Term 4	
eek	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
			State the purpose of the timing chain and timing gear.	
			Remove and refit the timing chain and gear.	
	Automotive	Grade 5 2 nd year.	Grade 5 2 nd year.	
	service	Carry out the major service as follows:	The teacher:	
		Check/replace brake disc pads and brake	 Discusses the purpose of brake disc pads and brake shoes. 	
		shoes.	Discusses and demonstrates how to replace brake disc pads a	
			brake shoes.	
			Discusses safety when replacing brake disc pads and brake shoes.	
			The learners complete the following activities:	
			 Identify brake disc pads and brake shoes. 	
			State the purpose of brake disc pads and brake shoes.	
			Observe safety when replacing brake disc pads.	
			Replace brake disc pads.	
	Specialist	Grade 5 3 rd year.	Grade 5 3 rd year.	
	hand tools • Us	• Use a tap and die to cut threads.	The teacher:	
		• Use a thread file to clean threads on a bolt.	 Discusses and demonstrates how to use and care for taps and dies. 	
			Discusses the purpose of the thread file.	
			Discusses how to use the thread file.	
			 Demonstrates how to use the thread file. 	
			The learners complete the following activities:	
			Identify the tap and die set.	

	Grade 5: Term 4			
Week	Торіс	Content The learner must be able to:	Teaching tips, techniques, activities and resources.	
			Identify the thread file.	
			• State the purpose of the tap and die set.	
			State the purpose of the thread file.	
			Drill a hole for tapping threads.	
			Tap threads in the hole.	

10 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	Gr	ade 5 1 st year	Gra	Grade 5 2 nd year		Grade 5 3 rd year	
2	٠	Show the different rim	٠	Replace the diesel fuel	٠	Connect the arc welding	
		sizes.		filter.		machine.	
	•	Show the different tyre	•	Bleed the fuel system.	•	Carry out a basic butt	
		sizes.				weld.	
3	٠	Remove the	•	Remove the spark plug.	•	Light the welding gas	
		suspension rubber.	•	Gap and replace the		nozzle.	
	•	Replace the		spark plug	•	Carry out a simple gas	
		suspension rubber.				weld.	
4	٠	Use a multi-meter to	•	Drain the anti freeze.	•	Light up the brazing gas	
		fault find.	•	Fill correct fix of		nozzle.	
	٠	Fix the electrical fault.		coolant/anti freeze.	•	Carry out a simple gas	
						brazing.	
5	٠	Remove the engine	•	Drain the gear box oil.	•	Switch the soldering iron	
		mounting.	•	Fill up the gear box oil.		on and off.	
	٠	Replace the engine			•	Use the soldering iron.	
		mounting.					
6	•	Remove the tappet	•	Drain the diff oil.	•	Fit a blade in the	
		cover.	•	Refill the diff oil.		hacksaw.	
	٠	Refit the tappet cover.			•	Cut metal with the	
						hacksaw.	
7	•	Remove the cylinder	•	Replace automatic	٠	Switch the cut off saw on	
		head.		transmission oil.		and off.	
	•	Refit the cylinder head.	•	Replace the automatic	•	Cut metal with the cut off	
				transmission filter.		saw.	
8	•	Remove the timing	•	Check the clutch.	•	Use bolts to join	
		belt.	•	Adjust the clutch.		components.	
	•	Replace the timing			•	Dismantle the	
		belt.				components.	
9	•	Remove timing	•	Remove disc pad.	•	Drill a hole in a thick	
		chain/gear.	•	Replace the disc pads.		metal.	
	•	Replace the timing			•	Cut threads in the metal	
		gear.				hole.	

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.

	٠	Grade 5 1 st year	•	Grade 5 2 nd year	•	Grade 5 3 rd year
Week						
2	٠	State how to prolong	٠	State the purpose of	٠	State the purpose of an
		tyre life.		diesel filters.		welding equipment.
3	•	State the purpose of	•	State the purpose of the	٠	State the purpose of ga
		the suspension and		spark plugs and		welding equipment.
		steering system.		condenser.		
4	٠	State the purpose of	•	State the purpose of	•	State the purpose of ga
		the electrical system.		antifreeze in the cooling		grazing.
				system.		
5	٠	State the purpose of	•	State the purpose of gear	•	State the purpose of th
		the engine mountings.		box oil.		soldering iron.
6	٠	State the purpose of	•	State the purpose of diff	•	State the purpose of th
		the tappet cover.		oil.		hacksaw.
7	٠	State the purpose of	•	State the purpose of the	٠	State the purpose of th
		the cylinder head.		engine oil filter.		cut off saw.
8	٠	State the purpose of	•	State the reason why we	•	State the reason why w
		the timing belt.		adjust the clutch cable.		bolts to join component
						together.
9	٠	State the purpose of	•	State the purpose of the	٠	State the purpose of th
		the timing chain.		brake disc pads.		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

Tas	k Week	Grade 4 1 st year	Grade 4 2 nd year					
Terr	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.					
Terr	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 Use a measuring tape. Use a steel 5 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.
Terr	m 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.
Terr	m 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	Wash a vehicle's mag rims. Polish and	Connect and disconnect the pipes and
	9	shine a vehicle's mag rims.	regulators in gas welding equipment. Blow out
			nozzles after use.

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 st year	Grade 5 2 nd year	Grade 5 3 rd year			
Term	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.			

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.
2			
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.
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.
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.
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.
3			
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.
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.
Week 6 or 7	Replace defective water pipes. Corrects antifreeze levels.	Remove silencer mountings. Remove the silencer box.	Remove the coil. Replace the coil.
	9 2 Week 2 or 3 Week 4 or 5 Week 6 or 9 3 Week 8 or 9 3 Week 2 or 3 Week 2 or 3 Week 4 or 5	9Remove a bearing.2Week 2 or 3Use a vernier calliper. Use a digital vernier calliper.Week 4 or 5Set up a dial gauge. Use a dial gaugeWeek 6 or 7Fit the wheel onto the tyre changing machine. Removes the tyre from the rim.Week 8 or 9Inflate a tyre. Check for and repairs leaks.Week 2 or 3Connects up the wheel balancing machine. Switches the machine on and off.Week 4 or 5Balance the wheel from the machine.Week 4 or 7Balance the wheel from the machine.Week 6 or 7Replace defective water pipes. Corrects antifreeze	9Remove a bearing.speed of drill when honing.2Week 2 or 3Use a vernier calliper. Use a digital vernier calliper.Remove brake disc pads. Refit brake disc padsWeek 4 or 5Set up a dial gauge. Use a dial gaugeRemove brake slave cylinder. Refit brake slave cylinder.Week 6 or 7Fit 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.Week 8 or 9Inflate a tyre. Check for and pairs leaks.Remove the front hub. Remove the CV joint.3Week 2 or Switches the machine on and off.Checks for defective shock absorbers. Removes the shock absorber.Week 4 or 5Balance the wheel Remove the wheel from the machine.Removes the balarsing. Removes the balarsing.Week 6 or 7Replace defective water pipes. Corrects antifreezeRemove silencer mountings. Remove the silencer box.

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	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 annualteachingplanmustbeavailableforqualityassurance.

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MOTOR MECHANICS