

NATIONAL SKILLS QUALIFICATIONS

(NSQ)

FOR

PLUMBING LEVEL 1-3

AUGUST 2021

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NATIONAL SKILLS QUALIFICATIONS

(NSQ)

FOR

PLUMBING LEVEL 1

AUGUST 2021

NATIONAL SKILLS QUALIFICATION
NSQ LEVEL 1 – PLUMBING IN CONSTRUCTION
GENERAL INFORMATION

PURPOSE OF QUALIFICATION: This qualification is aimed at developing competence of learner in plumbing construction for youth employment and development.

QUALIFICATION OBJECTIVES: To achieve this qualification, the plumber attendant should be able to demonstrate the knowledge of;

1. Health and Safety in Plumbing.
2. Communication in Plumbing.
3. Team Work in Plumbing.
4. Arrangement of Work Place
5. Basic Plumbing
6. Material Handling & Storage.
7. Cutting and Threading Pipes.
8. Bending of plumbing pipes

To gain level 1 qualification in plumbing (technician assistant) Learners must achieve 8 mandatory credit units

NSQ LEVEL 1 PLUMBING IN CONSTRUCTION

QUALIFICATION SUMMARY					
UNIT	REF NO	UNIT TITLE	REMARKS	CREDIT VALUE	GLH
Unit 01	CON/PL001/L1	Health and Safety in Plumbing.	Mandatory	2	20
Unit 02	CON/PL002/L1	Communication in Plumbing.	Mandatory	1	10
Unit 03	CON/PL003/L1	Team Work in Plumbing.	Mandatory	1	10
Unit 04	CON/PL004/L1	Arrangement of Work Place	Mandatory	3	30
Unit 05	CON/PL005/L1	Basic Plumbing	Mandatory	1	10
Unit 06	CON/PL006/L1	Material Handling & Storage.	Mandatory	3	30
Unit 07	CON/PL007/L1	Cutting and Threading Pipes.	Mandatory	2	20
Unit 08	CON/PL008/L1	Bending of plumbing pipes	Mandatory	3	30
		TOTAL		15	160

Total learning hours 160 +

Guided learning hours	Independent learning hours	Work-based learning hours
160		+

Unit 004: ARRANGEMENT OF WORK PLACE**Reference number: CON/PLO04/L1****NSQ level: 1****Credit value: 3****Guided learning hours: 30****Unit Purpose:**

To enable learner have knowledge and competency skills required for arrangement of workplace, by understanding workflow and space arrangement, safety requirements and security need.

Unit assessment requirements/evidence requirements**The evidence required for this level includes:**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 004: ARRANGEMENT OF WORK PLACE

LO (Learning outcome)		Criteria:-	Evidence Type					Evidence Ref Page number		
LO 1: Understand work flow and space arrangement	1.1	Identify the equipment and tools required for work.								
	1.2	Identify material required in the work place.								
	1.3	Determine space requirement for labor operations.								
	1.4	Recognize the sequence of work.								
	1.5	Arrange material equipment and labor in accordance to sequence of work.								
LO 2: Understand safety requirement in work place	2.1	Explain the importance of good housekeeping.								
	2.2	Identify safety gadget required in the work place.								
	2.3	Identify exit route in case of emergency.								
	2.4	Initiate safe access to work place.								
	2.5	Adopt emergency procedure in work place.								
	2.6	Return every safety gadget after work.								
	2.7	Maintain appropriate safety measures.								
LO 3: Understand security needs in work place	3.1	Identify security personnel in work place								
	3.2	Maintain procedure to keep work environment secure.								
	3.3	Describe the procedure for reporting any security threat in work place.								

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 005: BASIC PLUMBING**Unit reference number: CON/PL005/L1****NSQ level: 1****Credit value: 3****Guided learning hours: 30****Unit Purpose:**

Learner should understand and demonstrate competency skills required in Basic Plumbing on types of pipes, application, basic tools, equipment, water supply and distribution.

Unit assessment requirements/evidence requirements:**The evidence required for this level includes:**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 005: BASIC PLUMBING

Learning outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref	Page number
LO 1: Know the Types of Pipes and its Application in Plumbing.	1.1	Explain various types of pipe used in plumbing.			
	1.2	Describe plumbing signs and symbol.			
	1.3	State 3 types of pipes that can be used in cold and hot water supply and their application			
	1.4	Identify fittings that match various types of pipes mentioned in 1.3 above.			
	1.5	Select fittings that match various types of pipes identified.			
	1.6	Perform connection of 2 pipes and fittings identified.			
LO 2: Demonstrate the Use of basic tools and equipment required for simple tasks.	2.1	Identify tools and equipment for plumbing installation.			
	2.2	Select tools, equipment and materials that can be used for installation of wash hand basin and water closet.			
	2.3	Apply the appropriate tools and equipment to perform the WC and wash hand basin installation.			
	2.4	Use appropriate tools and equipment in accordance with health and safety.			
LO 3: Understand basic water supply and distribution	3.1	Identify sources of water supply.			
	3.2	Sketch water supply at a height of a bungalow building. Show by sketch the method of connecting water supply from overhead tank			
	3.3	Differentiate between direct and indirect water supply by sketching			
LO 4:	4.1	Differentiate between clean and contaminated water.			

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 006: MATERIAL HANDLING AND STORAGE**Unit reference number: CON/PL006/L1****NSQ level: 1****Credit value: 1****Guided learning hours: 10hours****Unit Purpose:**

Learners should have knowledge, attitude and demonstrate competency skills required for material handling and storage, procedures, processes of storage and stacking of tools.

Unit assessment requirements/evidence requirements:**The evidence required for this level includes;**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 006: MATERIAL HANDLING AND STORAGE

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Demonstrate Material Handling	1.1	Identify the simple procedures for loading and offloading of plumbing materials in line with environmental health and safety requirement.		
	1.2	Carry out lift and shift operations in accordance with workplace environmental health and safety requirement.		
	1.3	Carry out proper storing and stacking of tools and materials.		
	1.4	Observe individual work and teamwork for lifting, loading and offloading of materials.		
LO 2: Use the Procedures and process of storage and stacking of tools.	2.1	Use material storage method last in first out (LIFO) and first in last out (FILO).		
	2.2	Load and offload materials such as pipes and fittings.		
	2.3	Use the procedure of storing and stacking of inflammables construction materials		
	2.4	Carryout maintenance requirements of tools and equipment.		
	2.5	Apply safety rules for material storage.		
	2.6	Use safe access to storage areas.		
	2.7	Checks for safe storage conditions with up-to-date records.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 007: CUTTING, THREADING AND COUPLING OF PIPES**Unit reference number:** CON/PL007/L1**NSQ level:** 1**Credit value:** 3**Guided learning hours:** 30**Unit Purpose:**

Learners should demonstrate knowledge and competency skills on cutting, threading and coupling pipes

Unit assessment requirements/evidence requirements:

1. Work product
2. Personal statement
3. Witness testimony
4. Direct observation
5. Question and answer
6. Assignment

Unit 007: CUTTING, THREADING AND COUPLING OF PIPES.

Learning outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Demonstrate Pipe Cutting process.	1.1	Identify the different cutting tools for pipe cutting.		
	1.2	Select the cutting tool use for cutting light gauge copper, PVC and PPR Pipes.		
	1.3	Explain at least 3 importance of using pipe cutting tools.		
	1.4	Use cutting tools to cut out PVC, PPR and Light gauge copper pipes.		
LO 2: Demonstrate Pipes Threading.	2.1	Identify 3 types of pipes that can be threaded		
	2.2	Select the right size of dies for threading pipes of w.c and bath supply		
	2.3	Perform basic threading on the following PVC pipes, ½” and 1”		
	2.4	Explain the importance of using the right size of dies for cutting threads.		
	2.5	Couple the threaded pipes to form a simple network.		
LO 3: Demonstrate Coupling Mild Steel, Light gauge copper and PVC Pipes.	3.1	Explain joint in mild steel, light gauge copper and pvc/plastic pipes.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 008: BENDING OF PLUMBING PIPES**Reference number: CON/PL008/L1****\NSQ level: 1****Credit value: 3****Guided learning hours: 30****Unit Purpose:**

Learner should understand and demonstrate competency skills required for bending of plumbing pipes on mild steel, light gauge copper and plastic pipes.

Unit assessment requirements/evidence requirements**The evidence required for this level includes:**

- 1 Observation (OBS)
- 2 Question and Answer (QA)
- 3 Witness statement (WS)
- 4 Recognition of Prior learning (RPL)
- 5 Personal statement/Reflective Journal (PS)
- 6 Work product (WP)

Unit 008: BENDING OF PLUMBING PIPES

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Demonstrate method of Bending mild steel pipe in plumbing work	1.1	Explain bending of plumbing pipe		
	1.2	Describe machine bending of mild steel and G.I pipes in plumbing work		
	1.3	Enumerate 6 types of tools used in mild steel bending of plumbing pipes.		
	1.4	Sketch a working drawing or template for making 90' bend		
	1.5	Follow the operational steps and make a 90' bend of galvanize or mild steel pipe with hydraulic bending machine		
LO 2: Demonstrate method of bending light gauge copper pipe in plumbing work	2.1	Explain light gauge copper pipe machine bending		
	2.2	Describe floor mounted bending machine to make a 90' light		
	2.3	Enumerate 6 types tools used in light gauge copper pipe machine		
	2.4	BendSketch a working drawing or template for making the center of the bend		
	2.5	Use the operational steps and make a 90' light gauge copper pipe bend		

	heat length for a 90° bend from the working drawing.								
4.6	Use the step by step process of working out the heat length for a 90° bends on a piece of 25mm diameter plastic pipe.								

Learners Signature:**Date:**

Assessors Signature:

Date:

IQA Signature(if
sampled)

Date:

EQA Signature(if sampled)**Date:**



LIST OF PARTICIPANTS AT THE WORKSHOP FOR THE DEVELOPMENT OF NATIONAL OCCUPATIONAL STANDARD (NOS) FOR PLUMBING IN CONSTRUCTION HELD FROM 16TH – 21ST AUGUST, 2021 AT THE NBTE CONSULT, NO. 8 KAJURU CLOSE, U/RIMI, KADUNA

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NATIONAL SKILLS QUALIFICATIONS

(NSQ)

FOR

PLUMBING LEVEL 2

AUGUST 2021

**NATIONAL SKILLS QUALIFICATION
NSQ LEVEL 2 – PLUMBING IN CONSTRUCTION
GENERAL INFORMATION**

PURPOSE OF QUALIFICATION: This qualification is aimed at developing competence of learner in plumbing construction for youth employment and development.

QUALIFICATION OBJECTIVES: To achieve this qualification, the plumber attendant should be able to demonstrate the knowledge of;

1. Communication in Plumbing Work.
2. Team Work in Plumbing Work.
3. Health and safety in Plumbing.
4. Work Plan in Plumbing.
5. Checking and Testing of Installation.
6. Use of Power Tools.
7. Basic Mathematical Skills in plumbing.
8. Piping Laying in plumbing. 9. Installation of Domestic Piping System.

To gain level 2 qualification in plumbing (technician II) Learners must achieve 9 mandatory credit units

National Skills Qualification
NSQ LEVEL 2 PLUMBING IN CONSTRUCTION

	QUALIFICATION SUMMARY				
UNIT	REF NO	UNIT TITLE	REMARKS	Credit Value	GLH
Unit 001	PL001	Communication in Plumbing Work.	Mandatory	1	10
Unit 002	PL002	Team Work in Plumbing Work.	Mandatory	1	10
Unit 003	PL003	Health and safety in Plumbing.	Mandatory	2	20
Unit 004	PL004	Work Plan in Plumbing.	Mandatory	2	20
Unit 005	PL005	Checking and Testing of Installation.	Mandatory	2	20
Unit 006	PL006	Use of Power Tools.	Mandatory	2	20
Unit 007	PL007	Basic Mathematical Skills in plumbing.	Mandatory	2	20
Unit 008	PL008	Piping Laying in plumbing.	Mandatory	3	30
Unit 009	PL009	Installation of Domestic Piping System.	Mandatory	3	30
			Total	18	180

GENERAL INFORMATION**PURPOSE OF QUALIFICATION:**

At the end of the units within this level, the Learner should be able to:

1. Use plumbing code and communication gadget
2. Understand Positive working relationship with colleagues
3. Determine appropriate resources for installation
4. Organize work resources in line with specification
5. Demonstrate power tools operation
6. Know how to measure angles, dimension, temperature and pressure scales
7. Understand different types of pipes and fittings
8. Carry out test on pipes

To gain level 2 qualification in plumbing (Technician Plumber II) Learners must achieve 5 mandatory credit units and at **least** 3 optional credit units.

Unit 001: COMMUNICATION IN PLUMBING WORK**Unit reference number: CON/PL001/L2****NSQ level: 2****Credit value: 1****Guided learning hours: 10****Unit Purpose:**

To establish a quality communication system that is responsive and subject to change in meeting workers and employers need in work environment.

Unit assessment requirements/evidence requirements:**The evidence required for this level includes:**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 001: COMMUNICATION IN PLUMBING WORK

Learning Outcome (LO)	Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Know means of communication in plumbing.	1.1 Define communication in Plumbing.		
	1.2 Explain two mode of communication.		
	1.3 List 4 types of communication use in plumbing.		
	1.4 Use oral means of communication in plumbing.		
	1.5 Explain the equation of pipe laying to your client.		
LO 2: Communicate to the immediate job supervisor or customer, circumstances that affect the progress of work.	2.1 Identify the circumstances that affect progress of installation.		
	2.2 Recognize line of communication.		
	2.3 Report simple instructions.		
LO 3: Use of Plumbing code and communication gadget.	3.1 Identify basic plumbing codes.		
	3.2 Operate simple communication gadget		
	3.3 Identify and use basic symbol to communicate.		
	3.4 Record and carry out instruction.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 002: TEAM WORK IN PLUMBING**Unit reference number:** CON/PL002/L2**NSQ level:** 2**Credit value:** 1**Guided learning hours:** 10**Unit Purpose:**

To impart on the learner; skills, knowledge and understanding required to develop team spirit and positive working relationship with colleagues.

Unit assessment requirements/evidence requirements**The evidence required for this level includes:**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 002: TEAM WORK IN PLUMBING

Learning Outcome (LO)		Performance Criteria:-	Evidence Type		Evidence Ref Page number
LO 1: Understand Positive working relationship with colleagues.	1.1	Identify the need for developing positive working			
	1.2	Recognize the importance of relating with other people in a way that makes them feel valued and respected.			
	1.3	Assist team members when required.			
	1.4	Report to the appropriate personnel when request for assistance fall outside area of responsibility.			
	1.5	Communicate information to colleagues about own work that might affect others.			
LO 2: Take responsibilities within the team.	2.1	Recognize own role and responsibilities within the team.			
	2.2	Perform individual tasks in line with the team rules and regulations.			
	2.3	Participate effectively in teamwork.			
LO 3: Comply with policy of organization.	3.1	Work in line with organizational standard.			
	3.2	Use organization code of practice.			
	3.3	Explain organizational code of conduct.			

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 003:	HEALTH AND SAFETY IN PLUMBING
Unit reference number:	CON/PL003/L2
NSQ level:	2
Credit value:	2
Guided learning hours:	20

Unit Purpose:

To enable learners have the basic knowledge of health and safety on a construction site.

Unit assessment requirements/evidence requirements**The evidence required for this level includes:**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 003: HEALTH AND SAFETY IN PLUMBING.

Learning Outcome (LO)		Performance Criteria:	Evidence Type	Evidence Ref Page
LO 1: Determine Appropriate Resources For Installation.	1.1	Perform simple and routine task using appropriate tools on site in line with health and safety practices in the building and construction industry.		
	1.2	Identify tools and equipment in a secure and friendly environment.		
	1.3	Select intended appropriate tools to yield result in safe environment.		
	1.4	Use of tools and equipment in line with health and safety practices in the construction industry.		
	1.5	Operate equipment based on approved health and safety practices.		
	1.6	Couple equipment after usage in line with approved health and safety practices in the building and construction industry.		
LO 2: Take Actions To Prevent The Unauthorized Systems	2.1	Perform task based on health and safety procedures during work at heights.		
	2.2	Explain the use and content of first aid box.		
	2.3	Identify precautionary actions in a workshop.		
	2.4	Identify systems or operations that cause accident and avoid them based on health and safety in the construction industry.		

	2.5	Use personal protective equipment such as head fall protector, foot protector, face and eye protector, hand and body protector and respiratory protector.							
LO 3: Understand Of Signs And Symbols	3.1	Explain precautionary symbols in order to prevent accident.							
	3.2	Sketch signs and symbols signifying danger to visitors and operators.							
	3.3	Sketch readable signs on systems components on appropriate methods of operations in line with health and safety standards.							

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT 004: WORK PLAN IN PLUMBING

Unit reference number:	CON/PL004/L2
NSQ level:	2
Credit value:	2
Guided learning hours:	20

Unit Purpose:

To enable learner to develop work plan for effective site organization for an enhanced productivity in work place.

Unit assessment requirements/evidence requirements**The evidence required for this level includes:**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 004: WORK PLAN IN PLUMBING

Learning outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Understand Plumbing specification.	1.1	Plan a work sequence on accurate use of tools equipment in a given plumbing task.		
	1.2	Identify tools, plants, vehicles and equipment required to carry out plumbing task effectively.		
	1.3	Execute a workable and defined work plan that will enable effective management of equipment available for use in a construction site.		
LO 2: Demonstrate Plumbing Work Plan Development.	2.1	Execute routine task to proper accurate estimate on work environment.		
	2.2	Plan an appropriate programme of works which will aid productivity		
	2.3	Interpret plan that will aid effective coordination on construction site		
LO 3: Demonstrate Work Plan Compliance.	3.1	Sketch the work plan to aid routine task in a work environment.		
	3.2	Check the planned steps and out come to ensure conformity with instructions.		
	3.3	Deliver a plan of work for compliance in workplace		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 005: CHECKING AND TESTING OF INSTALLATION**Unit reference number: CON/PL005/L2****NSQ level: 3****Credit value: 3****Guided learning hours: 30****Unit Purpose:**

The unit is about carrying out pre-commissioning check and test on systems. The learner must be able to undertake the various checks and tests necessary before the system is brought in operation.

Unit assessment requirements/evidence requirements**The evidence for this unit can be generated through the following methods:-**

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)
7. Professional discussion

Unit 005: CHECKING AND TESTING OF INSTALLATION

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref	Page number
LO 1: Perform Quality Check on Installed Pipe Work and Component.	1.1	Carry out checks on the installed pipe network to ascertain any loose joint (not water tight) on the network.			
	1.2	Identify any inferior pipes and fittings used for the installation.			
	1.3	Perform quality checks on the installed components to identify any low quality components used for the installation.			
	1.4	Explain the advantages of using the high quality pipes and components.			
	1.5	Check installation and correct position of component in line with designed specification.			
LO 2: Types of test and procedure for testing leakage.	2.1	Carry out hydrostatic test of the installed pipe network to ascertain whether there are leakages.			
	2.2	Perform testing on the appliances installed to full working capacity and in accordance with the working Standards and specifications.			
	2.3	Report to the immediate supervisor on the test carried out on the installation.			
LO 3: Demonstrate faults Plumbing Connection to specification.	3.1	Cut opening in wall and floors to accommodate pipes and pipe fittings.			
	3.2	Locate faults through interpretation of information on system or component performance, visual inspection, checks, or diagnose of test.			
	3.3	Initiate action to take when the system or components does not work to full performance specification.			
	3.4	Rectify fault in accordance with safety and work procedures in pipes and sanitary			

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 006: USE OF BASIC POWER TOOLS**Unit reference number: CON/PL006/L2****NSQ level: 2****Credit value: 2****Guided learning hours: 20****Unit Purpose:**

To enable the learner to identify, use and maintain different types of power tools.

Unit assessment requirements/evidence requirements

The evidence for this unit can be generated through the following methods:-

1. Work product
2. Personal statement
3. Witness testament
4. Direct Observation
5. Recognition of prior learning
6. Question and answer

Unit 006: USE OF BASIC POWER TOOLS

LO(Learning outcome)			Criteria:-		Evidence Type				Evidence Ref Page number			
LO 1: Understand Basic power tools.	1.1	Identify various types of power tools.										
	1.2	Select power tools that can be used for cutting wall and floor openings.										
	1.3	<u>Demonstrate</u> safety procedures in handling power tools										
LO 2: Demonstrate Basic power tools operation.	2.1	<u>Specify</u> power tools according to standard, workshop procedure and manufacturers specification.										
	2.2	Test power tools after installation before full operation.										
	2.3	Operate power tools in accordance to manufacturer's recommendation.										
LO 3: Maintain Basic Power Tools	3.1	Identify unsafe and faulty power tools.										
	3.2	Analyze fault and defects of power tools										
	3.3	Repair faulty and defective power tools										

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 007: BASIC MATHEMATICAL SKILL IN PLUMBING**Unit reference number: CON/P007/L2****NSQ level: 2****Credit value: 2****Guided learning hours: 20****Unit Purpose:**

To enable learner know the basic knowledge of mathematics in relation to plumbing.

Unit assessment requirements/evidence requirements**The evidence for this unit can be generated through the following methods:-**

1. Work product
2. Personal statement
3. Witness testament
4. Direct Observation
5. Recognition of prior learning
6. Question and answer
7. Assignment

Unit 007: BASIC MATHEMATICAL SKILL IN PLUMBING

Learning outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Understand Simple Mathematical solutions	1.1	Identify the four signs of addition, subtraction, multiplication and division.		
	1.2	Solve mathematical problems using proportions.		
	1.3	Solve mathematical problems involving percentage.		
	1.4	Solve mathematical problems involving numerical expression.		
	1.5	Explain set-squares use in making plumbing angles.		
	1.6	Mention 2 types of set-squares i.e 45', 30'/60' set-squares		
	1.7	Identify the 3 basic construction of angles i.e Bisect		
	1.8	Use drawing procedures and draw 90' and 135' bend to 100mm radius.		
LO 2: Demonstrate Measurement in Plumbing Work.	2.1	Explain measurement in Plumbing Work.		
	2.2	Identify types of plumbing measuring tools.		
	2.3	Explain 5 application of measurement in plumbing work.		
	2.4	Use appropriate tools to measure, pressure, angles and length.		
LO 3: Demonstrate the understanding of Unit Systems	3.1	Identify imperial unit system.		
	3.2	Identify metric unit system.		
	3.3	Convert the imperial unit to metric unit systems.		
	3.4	Convert metric to imperial unit systems.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 008: PIPING IN PLUMBING**Unit reference number: CON/PL008/L2****NSQ level: 2****Credit value: 3****Guided learning hours: 30****Unit Purpose:**

To impart learners with the knowledge and practical skill necessary to install pipe work and other components, including carrying out leakage test.

Unit: Assessment Requirements/Evidence Requirements

The evidence for this unit can be generated through the following methods:-

1. Work product
2. Personal statement
3. Witness testament
4. Direct Observation
5. Recognition of prior learning
6. Question and answer

Unit 008: PIPING IN PLUMBING

Learning outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Understand different types of pipes and fittings	1.1	Recognize different types of pipes, differentiate between domestic and industrial pipes		
	1.2	Identify 5 different types of fittings, used for domestic industrial work.		
	1.3	Mention the advantages and disadvantages of different pipes for domestic and industrial		
	1.4	Use an appropriate fittings to connect water supply pipe 25mm diameter to Bath tub and wash hand basin		
LO 2: Demonstrate pipe joining	2.1	Select necessary tools and materials required for the job.		
	2.2	Carry out preparatory work for joining 3 pieces of 300mm (12 inch) length pipes each and fittings to form a u shape joint by measuring, cutting, and threading.		
	2.3	Carry out Joints by using the following: a) Two pieces of 20mm diameter Galvanized pipe and 20mm diameter Gate valve. b) Three pieces of 13mm diameter plastic pipes using 13mm diameter		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 009: INSTALLATION OF DOMESTIC PLUMBING SYSTEMS.**Unit reference number: CON/PL009/L2****NSQ level: 2****Credit value: 3****Guided learning hours: 30****Unit Purpose:**

Learner should demonstrate knowledge, attitude and skills required for installation of domestic plumbing systems on interpreting a basic building drawing, pipe laying and sanitary wares.

Unit assessment requirements/evidence requirements

The evidence for this unit can be generated through the following methods:-

1. Work product
2. Personal Statement
3. Witness testament
4. Direct Observation
5. Recognition of prior learning
6. Question and answer

Unit 009: INSTALLATION OF DOMESTIC PLUMBING SYSTEMS.

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page Number
LO 1: Interpret a Basic Building Drawing.	1.1	Identify and explain various type of Building plan.		
	1.2	Recognize various symbols used in Architectural and Mechanical drawing.		
	1.3	Identify the different plumbing drawing in a plan.		
	1.4	Set out mechanical building drawing.		
LO 2: Demonstrate Domestic Pipe Laying.	2.1	Make a sketch/line diagram of pipe lay out.		
	2.2	Identify the tools and equipment to be used.		
	2.3	Estimate material to be used.		
	2.4	Perform cutting operation of pipe according to sketch in line diagram.		
	2.5	Perform by installation of pipe network (measuring, cutting, threading, sealing and connect) in line with safety measures.		
	2.6	Identify three type of sealant in plumbing system.		
	2.7	Carry out pressure test in pipe connected and amend where necessary.		
	2.8	Conceal the pipe work with sand and cement moter.		
	2.9	Observe safety measure in pipe layout.		
LO 3: Demonstrate Installation of Sanitary Wares.	3.1	Identify connect tools and equipment to install choosing sanitary ware.		
	3.2	Estimate material to be used for choosing sanitary ware.		
	3.3	Assemble the chosen sanitary ware according to specification.		
	3.4	Install choose sanitary according to specification.		
	3.5	Test run installed choose sanitary ware and amend where necessary.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 010: PLUMBING SANITARY WARES**Unit reference number: CON/PL010/L2****NSQ level: 2****Credit value: 4****Guided learning hours: 40****Unit Purpose:**

To enable learner understand, knowledge and demonstrate competency skills required for plumbing sanitary wares on toilets bowl, squat, wall hung, closed couple, standard sink and bath tub devices.

Unit assessment requirements/evidence requirements

The evidence for this unit can be generated through the following methods:

1. Work product
2. Personal Statement
3. Witness testament
4. Direct Observation
5. Recognition of prior learning
6. Question and answer

Unit 010: PLUMBING SANITARY WARES.

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page Number
LO 1: Understand knowledge on Toilet Bowls, Squat, Wall hung and Closed couple.	1.1	Explain toilet sanitary wares.		
	1.2	Enumerate components of toilet bowls i.e: <ul style="list-style-type: none"> • Flush cistern cover, • Flushing cistern (tank), • Toilet seat cover, • Toilet seat rim, • Water drain handle, • Hydraulic shower, • Float valve, • Siphon and • Trap. 		
	1.3	Describe 4 different types of toilet wares i.e: <ul style="list-style-type: none"> • Bowls, • Squat, • Wall attached toilets. 		
	1.4	Locate 3 types of toilet release in to the sewage system i.e: <ul style="list-style-type: none"> • Horizontal out let, • Vertical out let and • Oblique release. 		
	1.5	Sketch the different types of a toilet flush i.e: <ul style="list-style-type: none"> • Direct flush and • Pivot flush 		
	1.6	Explain smart toilet and its functions i.e: <ul style="list-style-type: none"> • Built in bidet function, • Heated seat, • Adjustable automatic seat cover, automatic spraying of air freshener, and • Irradiation of inner surface of the toilet with ultraviolet light. 		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:



**LIST OF PARTICIPANTS AT THE WORKSHOP FOR THE DEVELOPMENT OF
NATIONAL OCCUPATIONAL STANDARD (NOS) FOR PLUMBING IN
CONSTRUCTION HELD FROM 16TH – 21ST AUGUST, 2021 AT THE NBTE CONSULT,
NO. 8 KAJURU CLOSE, U/RIMI, KADUNA**

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NATIONAL SKILLS QUALIFICATIONS

(NSQ)

FOR

PLUMBING LEVEL 3

AUGUST 2021

**NATIONAL SKILLS QUALIFICATION
NSQ LEVEL 3 – PLUMBING IN CONSTRUCTION
GENERAL INFORMATION**

PURPOSE OF QUALIFICATION: This qualification is aimed at developing competence of learner in plumbing construction for youth employment and development.

QUALIFICATION OBJECTIVES: To achieve this qualification, the plumber attendant should be able to demonstrate the knowledge of;

1. Health and Safety in Plumbing
2. Communication in Plumbing
3. Team Work in Plumbing
4. External Plumbing Pipe Layout
5. Checking / Testing of Installations
6. Cutting and Threading of Pipes
7. Arrange Work Place

To gain level 3 qualification in plumbing (technician I) Learners must achieve 15 mandatory credit units

**NATIONAL SKILLS QUALIFICATION
NSQ LEVEL 3 IN PLUMBING WORK**

QUALIFICATION SUMMARY					
UNIT	REF NO	UNIT TITLE	REMARKS	Credit Value	GLH
Unit01	PL001/L3	Health and Safety in Plumbing	Mandatory	3	30
Unit02	PL002/L3	Communication in Plumbing	Mandatory	3	30
Unit03	PL003/L3	Team Work in Plumbing	Mandatory	3	30
Unit04	PL004/L3	External Plumbing Pipe layout	Mandatory	3	30
Unit05	PL005/L3	Checking / Testing of Installations	Mandatory	3	30
Unit06	PL006/L3	Cutting and Threading of Pipes	Mandatory	3	30
Unit07	PL007/L3	Arrange Work Place	Mandatory	2	20
				20	200

UNIT 001: HEALTH, SAFETY AND SECURITY IN PLUMBING.**Unit Reference Number: CON/PL001/L3****NSQ level: 3****Credit value: 3****Guided learning hours: 35****Unit Purpose:** At the end of this unit, the learner should be able to'

1. Explain the meaning and importance of team work in plumbing profession
2. Identify own role and responsibilities within the team.
3. Recognize the benefit and scope of work to be executed

Unit assessment requirements/evidence requirements

The evidence required for this level includes:

1. Observation
2. Questioning
3. Witness statement
4. Prior learning
5. Personal statement
6. Work product
7. Professional discussion

UNIT 001: HEALTH, SAFETY AND ENVIRONMENT

Learning Outcome		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Demonstrate Personal health and hygiene	1.1	State the importance of maintaining good personal hygiene.		
	1.2	Wear clean, smart and appropriate personal Protective Equipment.		
	1.3	Work safely at all times, complying with health and safety and other relevant regulations and guidelines.		
	1.4	Describe how to deal with cuts, grazes and wounds and why it is important to do so		
	1.5	Get any cut, grazes and wounds treated by the appropriate person		
	1.6	Report illness and infection promptly to the appropriate person.		
	1.7	Supervise the use of Personal Protection Equipment such as Head Protection, Foot Protection, Face and eye Protection, Hand and Body protection and regulatory protection.		
	1.8	Summarize own responsibility under the health and safety Act as it relates to own occupation.		
	1.9	Guide others general rules on hygiene that must be followed.		
LO 2: Maintain hygienic, safe and hazard free workplace	2.1	State the importance of working in a healthy, safe and hygienic workplace.		
	2.2	Report any accidents or near accidents quickly and accurately to the proper person.		
	2.3	Promote health, hygiene and safety procedures during work.		
	2.4	Practice emergency procedures during work.		
	2.5	Ensure organizational security procedures are followed.		
	2.6	Ensure the disposal of waste and Pollution control with organic and inorganic waste disposal methods.		

LO 3: Demonstrate Safe and Secure Workplace	2.7	Promote sound and noise control and protection methods.																	
	2.8	Supervise identification of any hazards or potential hazards and deal with these correctly.																	
	2.9	State where information about health and safety in your workplace can be obtained.																	
	2.10	Describe the types of hazards in the workplace that may occur and how to deal with them.																	
	2.11	Differentiate between hazards that can be dealt with personally and those that should be reported to appropriate personnel.																	
	3.1	Carry out organizational procedures on how to warn other people about hazards and why this is important.																	
	3.2	State why accidents and near- accidents should be reported and who they should be reported appropriately.																	
	3.3	Describe the types of emergencies that may happen in the workplace and how to deal with them.																	
	3.4	Indicate where to find the first-aid equipment and locate the authorized personnel.																	
	3.5	Lift and handle materials in line with work environment procedure.																	
	3.6	State other ways of working safely that are relevant to own position responsibility and its importance.																	
	3.7	Describe organizational emergencies procedures, in particular fire, and how these should be followed.																	
	3.8	State the possible causes for fire in the workplace.																	
	3.9	Describe how to minimize the possibility of fire in the workplace.																	
	3.10	State where to find the alarms and how to set them off.																	
	3.11	State why a fire should never be approached unless it is safe to																	
	3.12	State the importance of following the fire safety laws																	

3.13	Describe organizational security procedures and why these are important									
3.14	Ensure security of equipment's in work environment within your responsibility									
3.15	Ensure security procedure for the movement of personnel and visitors are followed in your work environment									
3.16	State the importance of reporting all usual or non- routine incidents to the appropriate personnel									

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT 002: COMMUNICATION SYSTEMS IN PLUMBING.**Unit reference number:** CON/PL002/L3**QCF level:** 3**Credit value:** 3**Guided learning hours:** 30**Unit Purpose:** At the end of this unit, the learner should be able to'

1. Explain the meaning and importance of team work in plumbing profession
2. Identify own role and responsibilities within the team.
3. Recognize the benefit and scope of work to be executed

Unit assessment requirements/evidence requirements

The evidence required for this level includes:

1. Observation
2. Questioning
3. Witness statement
4. Prior learning
5. Personal statement
6. Work product
7. Professional discussion

UNIT 002: COMMUNICATION SYSTEMS IN PLUMBING

Learning Outcome (LO)		Performance Criteria	Evidence Type				Evidence Ref Page Number
L01: Understand Complex Communication System in a Work Environment	1.1	Describe simple non-verbal means of communication.					
	1.2	Interpret concept of symbols and signs					
	1.3	Appropriate Supervise the use of audio and electronic means to pass on necessary information.					
L02: Understand Source of Information and Management in a Work Environment	2.1	Participate in creating and making functional the source of information in an organization and work environment.					
	2.2	Make accessible the source of information in an organization or work					
	2.3	Environment relate appropriately with the source of information.					
	2.4	Use the various information flow system in an organization or work environment to overcome challenges.					
	2.5	Ensure proper documentation retrieval of information in accordance to procedure in a work environment.					
L03: Understand Communication Process in a Work Environment	3.1	Ensure the accessibility of the communication equipment in the work environment.					
	3.2	Describe the effective use of the various communication channels in a work.					
	3.3	Environment demonstrate the use of various communication means in a work environment.					
	3.4	Ensure effective information flow to the right personnel					
	3.5	Ensure the effective deployment of the use of symbols, signs and codes.					

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

UNIT 003:	TEAM WORK
Unit reference number:	CON/PL003/L3
NSQ level:	3
Credit value:	3
Guided learning hours:	30

Unit Purpose: At the end of this unit, the learner should be able to'

- 1 Explain the meaning and importance of team work in plumbing profession
- 2 Identify own role and responsibilities within the team.
- 3 Recognize the benefit and scope of work to be executed

Unit assessment requirements/evidence requirements:

The evidence required for this level includes:

- 1 Observation
- 2 Questioning
- 3 Witness statement
- 4 Prior learning
- 5 Personal statement
- 6 Work product
- 7 Professional discussion

Unit 003: TEAM WORK

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref	Page Number
LO 1: Understand Various Team Roles on the Construction Site	1.1	Distinguish among various teams e.g. Masonry, Carpentry, Iron bending, Plumbing etc.			
	1.2	Identify the role of each team.			
	1.3	Discuss the importance of each team			
	1.4	Deliver quality output as a team player.			
LO 2: Supervise Team Activity	2.1	Discuss the method of carrying out activities with team members.			
	2.2	Distribute work load and supervise activities.			
	2.3	Select materials and tools required for each team activity.			
	2.4	Interpret and ensure understanding of directives to team members.			
LO 3: Understand Communication Flow	3.1	Communicate work related information/ requirement clearly to team members.			
	3.2	Inform co-workers and superiors about any kind of deviation from work plan.			
	3.3	Address the problems effectively if need be to superiors appropriately.			
	3.4	Gather instructions from superiors and respond effectively.			
	3.5	Communicate to team members/subordinates of the right work techniques and methods.			
	3.6	Obtain clarification and advice from superiors as per work information were necessary.			

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 004:	EXTERNAL PLUMBING PIPING LAYOUT
Unit reference number:	CON/PL004/L3
QCF level:	3
Credit value:	3
Guided learning hours:	30

Unit Purpose:

The learner should be able to understand and demonstrate skill competency on installation of external plumbing pipes, laying of water supply pipe layout, storage tank and pumping machine.

Unit assessment requirements/evidence requirements.

The evidence required for this level includes:

1. Observation
2. Questioning
3. Witness statement
4. Prior learning
5. Personal statement
6. Work product
7. Professional discussion

Unit 004: EXTERNAL PLUMBING PIPE LAYOUT.

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref Page number
LO 1: Demonstrate Water Supply Pipe Layout.	1.1	Make a sketch drawing or line diagram of pipe work.		
	1.2	Identify appropriate pipe, size, and fittings.		
	1.3	Select appropriate pipe, sizes, and fittings in line with sketch.		
	1.4	Select tools and equipment to be used.		
	1.5	Used selected tools and material to install pipe according to specification.		
	1.6	Quality checks the installed pipe.		
LO 2: Demonstrate Water Storage Tank Installation.	2.1	Identify the tools and equipment to install a water storage tank.		
	2.2	Interpret the drawing and identify requirement in reference to 1.1 above		
	2.3	Install a water storage tank to the required specification.		
	2.4	Mention two different storage tank faults.		
	2.5	Explain the procedure of clearing and disinfection in storage tank fault.		
LO 3: Demonstrate Pumping Machine Installation.	3.1	Identify tools and equipment to install pumping machine.		
	3.2	Select appropriate pumping machine in line with the specification reference to 1.1 above.		
	3.3	Quality checks the installed pumping machine.		
	3.4	Mention 3 different type of pumping machine used for water supply.		
LO 4: Demonstrate sewage pipe laying in Plumbing work.	4.1	Identify appropriate tools and equipment material to be used.		
	4.2	Select appropriate tools and equipment material to be used.		
	4.3	Identify the position of septic tank and soak away.		
	4.4	Excavate to get the appropriate slope level (ratio 1:100) at 1cm drop of 1m		
	4.5	Laying of pipes to the direction of specific and soak away.		
	4.6	Back full the laid pipe appropriately.		

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 005: CHECKING AND TESTING EXTERNAL PLUMBING INSTALLATION**Unit reference number:** CON/PL005/L3**NSQ level:** 3**Credit value:** 3**Guided learning hours:** 30**Unit Purpose:**

To enable learner to understand knowledge of checking and testing external plumbing installation and demonstrate skill competencies to carry out checking of external pipe work, pumps connection and correct faulty system to specification.

Unit assessment requirements/evidence requirements**The evidence required for this level includes:**

1. Observation
2. Questioning
3. Witness statement
4. Prior learning
5. Personal statement
6. Work product
7. Professional discussion

Unit 005: CHECKING AND TESTING EXTERNAL PLUMBING INSTALLATION

Learning Outcome (LO)		Performance Criteria:-	Evidence Type	Evidence Ref	Page number
LO 1: Check Installed Pipe Work and Component.	1.1	Carry out checks on the installed external pipe network to ascertain any loose joint (not water tight) on the network.			
	1.2	Identify any inferior pipes and fittings used for the installation			
	1.3	Address the fault by taking different approach within an area of work specified			
	1.4	Explain the disadvantages of using the low quality pipes and components.			
	1.5	Check installation and correct positioning of component in line with designed specification.			
LO 2: Test Plumbing Installation.	2.1	Carry out hydrostatic test of the installed pipe network to ascertain whether there are leakages.			
	2.2	Perform testing on the appliances installed to full working capacity and in accordance with the working standards and specifications.			
	2.3	Reporting test result to the immediate supervisor on the test carried out on the installation.			
LO 3: Correct Faults in Plumbing Systems to Specification	3.1	Demonstrate the ability to isolate or prevent unauthorized use of unsafe systems or components.			
	3.2	Locate faults through interpretation of information on system or component Performance, visual inspection, checks, or diagnose of test.			
	3.3	Initiate action to take when the system or components does not work to full performance specification.			
	3.4	Carry out Maintenance of fault in accordance with safety and work place procedure.			

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 006: CUTTING AND THREADING OF PIPES**Unit reference number:** CON/PL006/L3**NSQ level:** 3**Credit value:** 3**Guided learning hours:** 30**Unit Purpose:**

To enable learner understand the knowledge and demonstrate competency skill on cutting and threading of pipes in plumbing system.

Unit assessment requirements/evidence requirements

1. Work product
2. Personal statement
3. Witness testimony
4. Direct observation
5. Question and answer
6. Assignment

Unit 006: CUTTING AND THREADING OF PIPES.

Learning Outcome (LO)		Performance Criteria:-	Evidence Type		Evidence Ref Page number
LO 1: Apply Pipe Cutting Tools of Copper, Galvanize, Stainless steel and Plastic	1.1	Identify the different cutting tools for pipe cutting.			
	1.2	Select the appropriate cutting tools used for cutting copper, galvanize and plastic pipes.			
	1.3	Explain the importance of using appropriate pipe cutting tool.			
	1.4	Use cutting tools appropriately to cut the following pipes, copper, galvanize and plastic.			
LO 2: Thread of Plastic, Galvanize and Stainless steel Pipes	2.1	Identify pipes that can be threaded			
	2.2	Select the right size of dies for threading the following pipes; a) G.I 25mm b) Plastic 20mm			
	2.3	Perform basic threading on the selection of 2.2 PC above.			
	2.4	Explain the importance of using the right size of dies for threading.			
	2.5	Assemble the threaded pipes to form a simple network.			

Learner's Signature:	Date:
Assessor's Signature:	Date:
IQA Signature (if sampled)	Date:
EQA Signature (if sampled)	Date:

Unit 007:	ARRANGE WORK PLACE
Reference number:	CON/PL007/L3
NSQ level:	1
Credit value:	2
Guided learning hours:	20

Unit Purpose:

To enable the learner knowledge, understanding and skill competency on arrangement of work flow, space, safety requirement and security needs.

Unit assessment requirements/evidence requirements:

The evidence required for this level includes:

1. Observation (OBS)
2. Question and Answer (QA)
3. Witness statement (WS)
4. Recognition of Prior learning (RPL)
5. Personal statement/Reflective Journal (PS)
6. Work product (WP)

Unit 007: ARRANGE WORK PLACE

Learning Outcome (LO)		Performance Criteria:-	Evidence Type		Evidence Ref Page number
LO 1: Understand work flow and space arrangement	1.1	Identify the equipment and tools required for work.			
	1.2	Identify material required in the work place.			
	1.3	Determine space requirement for labor operations.			
	1.4	Recognize the sequence of work			
	1.5	Arrange material equipment and labor in accordance to sequence of work.			
LO 2: Understand Safety Requirement in Work Place	2.1	Explain the importance of good housekeeping.			
	2.2	Identify safety gadget required in the work place.			
	2.3	Identify exit route in case of emergency.			
	2.4	Initiate safe access to work place.			
	2.5	Adopt emergency procedure in work place.			
	2.6	Return every safety gadget after work.			
	2.7	Maintain appropriate safety measures.			
LO 3: Understand Security Needs in Work Place	3.1	Identify security personnel in work place			
	3.2	Maintain procedure to keep work environment secure			
	3.3	Report any security threat in work place.			

Learner's Signature:

Date:

Assessor's Signature:

Date:

IQA Signature (if sampled)

Date:

EQA Signature (if sampled)**Date:**



**LIST OF PARTICIPANTS AT THE WORKSHOP FOR THE DEVELOPMENT OF
NATIONAL OCCUPATIONAL STANDARD (NOS) FOR PLUMBING IN
CONSTRUCTION HELD FROM 16TH**

**- 21ST AUGUST, 2021 AT THE NBTE CONSULT, NO. 8 KAJURU CLOSE, U/RIMI,
KADUNA**

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