



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

Directorate of Industrial Training



**Assessment and Training
Package**

**For an
ENERGY SAVING STOVE
MAKER**

Qualification Level: 1

Occupational Cluster: Technology and Design

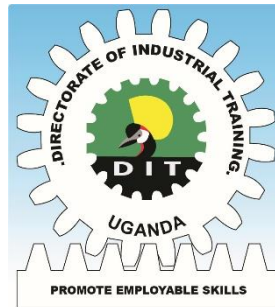
September 2020

Reviewed by:

**Qualifications Standards Department
Directorate of Industrial Training**

Funded by:

Government of Uganda



Assessment and Training Package

For an Energy Saving Stove Maker

Qualification Level: 1

Occupational Cluster: Technology and Design

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Under BTVET Act, 2008, the functions of the Directorate of Industrial Training are:

- (a) To identify the needs of the labour market for occupational competencies that fall under the UVQF.
- (b) To regulate apprenticeship schemes.
- (c) To foster and promote entrepreneurial values and skills, as an integral part of the UVQF.
- (d) To secure adequate and sustainable financing for the efficient operations of the Directorate.
- (e) To accredit training institutions or companies as assessment centres.
- (f) To determine fees payable under the Act.
- (g) To develop, apply, expand and improve the purposeful application of Uganda vocational qualifications defined in the UVQF.
- (h) To assess and award Uganda Vocational Qualifications.
- (i) To promote on-the-job training in industry for apprenticeship, traineeship and indenture training and for other training such as further skills training and upgrading.
- (j) To prescribe the procedure for the making of training schemes.

Further to the above provisions, there is an established Uganda Vocational Qualifications Framework (UVQF), under part V of the BTVET Act, 2008. It is stated that:

The purpose of the UVQF is to;

- (a) Define occupational standards in the world of work.
- (b) Define assessment standards.
- (c) Award vocational qualifications of learners who meet the set standards of different studies.
- (d) Provide guidelines for modular training.

The UVQF shall follow principles of Competence Based Education and Training (CBET) which include:

- (a) Flexible training or learning modules.
- (b) Positive assessment and certification.
- (c) Assessment of prior learning.
- (d) Recognition of formal and non-formal training.
- (e) Self-paced or individual learning.
- (f) Work place learning.

For award and recognition of certificates, the BTVET Act, 2008 provides that:

- (1) The Directorate and other examination boards established under the Act shall award certificates and diplomas for Business, Technical or Vocational Education and Training under the UVQF.
- (2) The Certificates and Diplomas to be awarded shall be in the form prescribed by the Minister on the recommendation of the Industrial Training Council.
- (3) The Certificates and Diplomas awarded under the Act shall be recognised in the Uganda education system and by the labour market.

Under the TVET Implementation Standards 2020, the proposed new mandate of the Directorate of Industrial Training shall be restricted to promoting the highest standards in the quality and efficiency of industrial training in the country and ensuring an adequate supply of properly trained manpower at all levels in the industry and the world of work.

The functions shall include:

- (a) Regulating Industrial Training and Trainers.
- (b) Developing Industrial Training Curricula.
- (c) Harmonising Curricula and Certificates of competence.
- (d) Assessing Industrial Training.
- (e) Development of Occupational Standards and Assessment and Training Packages (ATPs) for Trade Testing for the industry and world of work.
- (f) Awarding certificates in that respect.

At operational level in the Directorate, the Qualification Standards Department performs development tasks related to concepts, procedures and instruments for establishment of the UVQF in close collaboration with both public and private stakeholders in vocational training.

In particular, the Department organises and coordinates the development of Assessment and Training Packages for use in competence-based vocational training as well as standards-based assessment and certification.

The Directorate has therefore produced this Assessment and Training Package for use in implementing Competence-Based Education and Training mechanisms.

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Word from Permanent Secretary

The Kajubi Report (1989) and the Uganda Government White Paper on Education Review (1992) emphasised that the Uganda Secondary School Education should be vocationalised.

The World Bank Report on education in Uganda 2007 observed that although Uganda was experiencing steady economic growth on one hand, the secondary education curriculum was inadequately addressing the social and economic needs of the country on the other. The Report further noted that it is not the very top academic cadres that contribute most to the growth of the GDP but rather the competent middle level technicians that are flexible and technologically literate that the economy needs in the labour market at all levels.

Correspondingly, the NDP III 2020/21- 2024/5 highlights (i) low labour productivity (ii) high youth unemployment (38%) (iii) low transition rates from training to employment (35%) as some of the key challenges to Human Capital Development in Uganda.

In order to overcome these challenges, NDP III 2020/21- 2024/5, under objective 2 peaks the need to train the learners for the urgently needed skills and mainstream a dual education and training system. This paved way for the development of the lower secondary school vocational curriculum which supports both academic and vocational training.

The afore is in line with the Uganda Vision 2040. Under section 261, it emphasises that learners will be accorded opportunities to excel in the skills areas they are placed into. These will range from sports and cut to technical and vocational training. Hitherto, section 262 clearly states that the entire education system will be changed to emphasise practical skills, attitude and moral values.

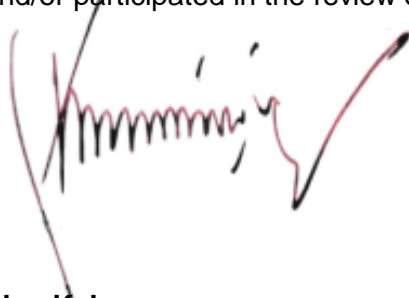
Government of Uganda through the Ministry of Education and Sports rolled out the New Lower Secondary Curriculum in secondary schools countrywide during the first term of the academic year 2020. The overall goal of this curriculum is to produce graduates with employable skills and who are competitive in the labour market. It should be emphasised that vocational training will produce graduates who are employable. In the New curriculum, emphasis will be on equipping learners with employable skills and competencies. This will enable learners perform the requisite duties of the specified occupations. This is the reason why the lower secondary school vocational curriculum was tailored to the assessment requirements of the world of work.

Reading from the Curriculum Framework page 12, it is stated that the learners will be assessed by DIT. Upon assessment and certification, the graduates will be employable and competitive in the labour market. It's against this background that DIT, within its mandate vested in the BTVET Act, 2008 comes on board to take the lead in the development of the requisite Assessment and Training Packages (ATPs) for the various occupations that will be assessed under the Lower Secondary Curriculum.

The ATPs can be used by any training provider and/or those who wish to present themselves for Occupational Assessment and Certification.

Herewith, the Directorate of Industrial Training presents the Assessment and Training Package for training, assessment and certification of an Energy Saving Stove Maker **QUALIFICATION LEVEL 1.**

Finally, I thank all individuals, organisations and review partners who have contributed and/or participated in the review of this noble document.



Alex Kakooza
Permanent Secretary

Executive Summary

This Assessment and Training Package is a Competence-Based Education and Training (CBET) tool and consists of three major parts:

- 0.1 **PART I: The Occupational Profile (OP) of an Energy Saving Stove Maker.** This Occupational Profile which was reviewed by Energy Saving Stove Makers practicing in the world of work mirrors the duties and tasks that Energy Saving Stove Makers are expected to perform.
- 0.2 **PART II: Training Modules** in the form of guidelines to train Energy Saving Stove Makers both on the job as well as in training centres (or combinations of both venues of learning). The Training Modules herein have been reviewed basing on the Occupational Profile and hence are directly relevant for employment.
- 0.3 **PART III: Assessment Instruments** in the form of performance (Practical) and written (theory) test items that can and should be used to assess whether a person complies with the requirements of employment as an Energy Saving Stove Maker. These assessment instruments were reviewed jointly by job practitioners (Energy Saving Stove Makers) and instructors based on the occupational profile and training modules.
- 0.4 While the Occupational Profile (OP) contained in PART I of this document provides the information on **WHAT a person is expected to do** competently in the world of work, the test items, - including performance criteria- of PART III qualify the **HOW and/or HOW WELL a person must do the job.**
- 0.5 The modular format of the curriculum (PART II) allows learners to acquire job specific skills and knowledge (i.e. competencies) module by module. A single module can be accomplished within a relatively short duration allowing flexibility for learners to move directly into an entry level job, go for further modules or advance to higher levels of training. Modular courses allow more learners to access the training system because training centres as well as companies can accommodate more learners in a given period of time.
- 0.6 In addition to improved access, equity and relevance of BTVET, the UVQF will also enable people who are convinced to have acquired competencies laid down in this ATP through prior training and on-the-job experience to access assessment and certification directly; be it on the basis of a single module, a group of modules or all modules pertaining to the occupation at once. This achievement will facilitate Recognition of Prior Learning (RPL).

0.7 The parts of this Assessment and Training Package were sequentially reviewed as follows:

- i Part 1: Occupational Profile: **August 2020**
- ii Part 2: Training Modules: **August 2020**
- iii Part 3: Assessment Instruments (initial bank): **August 2020**

This ATP (or parts of it) may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions.

DIT takes responsibility of any shortcomings that might be identified in this publication and welcomes suggestions for effectively addressing the inadequacies. The suggestion can be communicated to DIT through P.O. Box 20050, Kampala or through email uvaf.dit@gmail.com.



Patrick Byakatonda
Ag. Director

Acknowledgement

The Qualifications Standards Department of DIT wishes to sincerely acknowledge the valuable contributions to the review of this Assessment and Training Package by the following persons, Institutions and organisations:

- Members of the DIT Industrial Training Council,
- The Director and staff of DIT,
- Ministry of Education and Sports,
- The practitioners from the world of work,
- Teachers of Technology and Design from various Secondary Schools,
- Energy Saving Stove Maker Curriculum Specialists from NCDC,
- Examination Specialists from UNEB,
- The facilitators involved in guiding the review panel in their activities,
- The Government of Uganda for financing the review of this ATP.

Abbreviations and Acronyms

A&C	Assessment and Certification
ATP	Assessment and Training Packages
CBET	Competency Based Education and Training
DIT	Directorate of Industrial Training
ITC	Industrial Training Council
GoU	Government of Uganda
LWA	Learning-Working Assignment
MC	Modular Curriculum
MoES	Ministry of Education and Sports
OP	Occupational Profile
PEX	Practical Exercise
PTI	Performance (Practical) Test Item
QS	Qualification Standards
RPL	Recognition of Prior Learning
TIB	Test Item Bank
TVET	Technical, Vocational Education and Training
UVQ	Uganda Vocational Qualification
UVQF	Uganda Vocational Qualifications Framework
WTI	Written (Theory) Test Item

Key definitions

Assessment	Assessment is the means by which evidence is gathered and judged to decide if an individual has met the stipulated assessment standards or not. Testing is a form of formal assessment.
Certification	Certification is a formal procedure to issue a certificate (qualification) to an individual that has demonstrated during formal assessment that he/she is competent to perform the tasks specified in the occupational profile.
Competence	Integration of skills, knowledge, attitudes, attributes and expertise in doing /performing tasks in the world of work to a set standard.
Competency	(Occupational) competency is understood as the ability to perform tasks common to an occupation to a set standard.
CBET	Competence-based education and training means that programmes: <ol style="list-style-type: none">1. have content directly related to work2. focus is on 'doing something well'3. assessment is based upon industry work standards, and4. curricula are developed in modular form
Duty	A Duty describes a large area of work in performance terms. A duty serves as a title for a cluster of related Tasks (see also: TASK).
Learning-Working Assignment (LWA)	LWA are simulated or real job situations / assignments that are suitable for learning in a training environment (e.g. "small projects"). In a working environment LWA are real work situations/assignments.
Module	Modules are part(s) of a whole curriculum. Modules can be considered as "self-contained" partial qualifications which are described by learning outcomes or competencies and which can be assessed and certified individually.

Occupational Profile (OP) An Occupational Profile is an overview of the duties and tasks a job incumbent is expected to perform competently in employment.

Occupational Profiles developed by practitioners from the world of work enhance the relevance of training and learning to the requirements of the world of work.

Occupational Profiles which define what a person is supposed to do which become the reference points for developing assessment standards and modular curricula.

Qualification A qualification is a formal reward for demonstrating competence, based on formal assessment against set standards and provided to the individual in the form of a certificate specifying the nature of the competence.

Task Job tasks represent the smallest unit of job activities with a meaningful outcome. Tasks result in a product, service, or decision. They represent an assignable unit of work and have a definite beginning and ending point. Tasks can be observed and measured. (*Also see: Duty*)

1.0 ATP-PART I

Occupational Profile for an ENERGY SAVING STOVE MAKER

- 1.1 The OCCUPATIONAL PROFILE (OP) for “ENERGY SAVING STOVE MAKER” below defines the **Duties** and **Tasks** a competent ENERGY SAVING STOVE MAKER is expected to perform in the world of work (on the job) in Uganda and the East African region today.
- 1.2 Since it reflects the skill requirements of work life, the Occupational Profile is the reference document for the subsequent development of training modules and assessment instruments (test items) which are directly relevant to employment in Ugandan and the East African businesses and industries.
- 1.3 To ensure that the Occupational Profile is relevant for employment in Uganda and East Africa, the DIT used the method of “occupational/job profiling.

This approach involves the brainstorming of a panel of 8 to 12 competent job practitioners guided by trained and experienced facilitators. During a two-day workshop the panellists defined the duties and tasks performed in employment, as well as the prerequisite skills, knowledge, attitudes, tools and equipment, and the future trends and concerns in the occupation/job.

- 1.4 The panellists, facilitators and coordinators who participated in developing this Occupational Profile are listed on the following page.

Expert panel
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Funded by
Government of Uganda



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

Directorate of Industrial Training

Occupational Profile

For an

"Energy Saving Stove Maker"

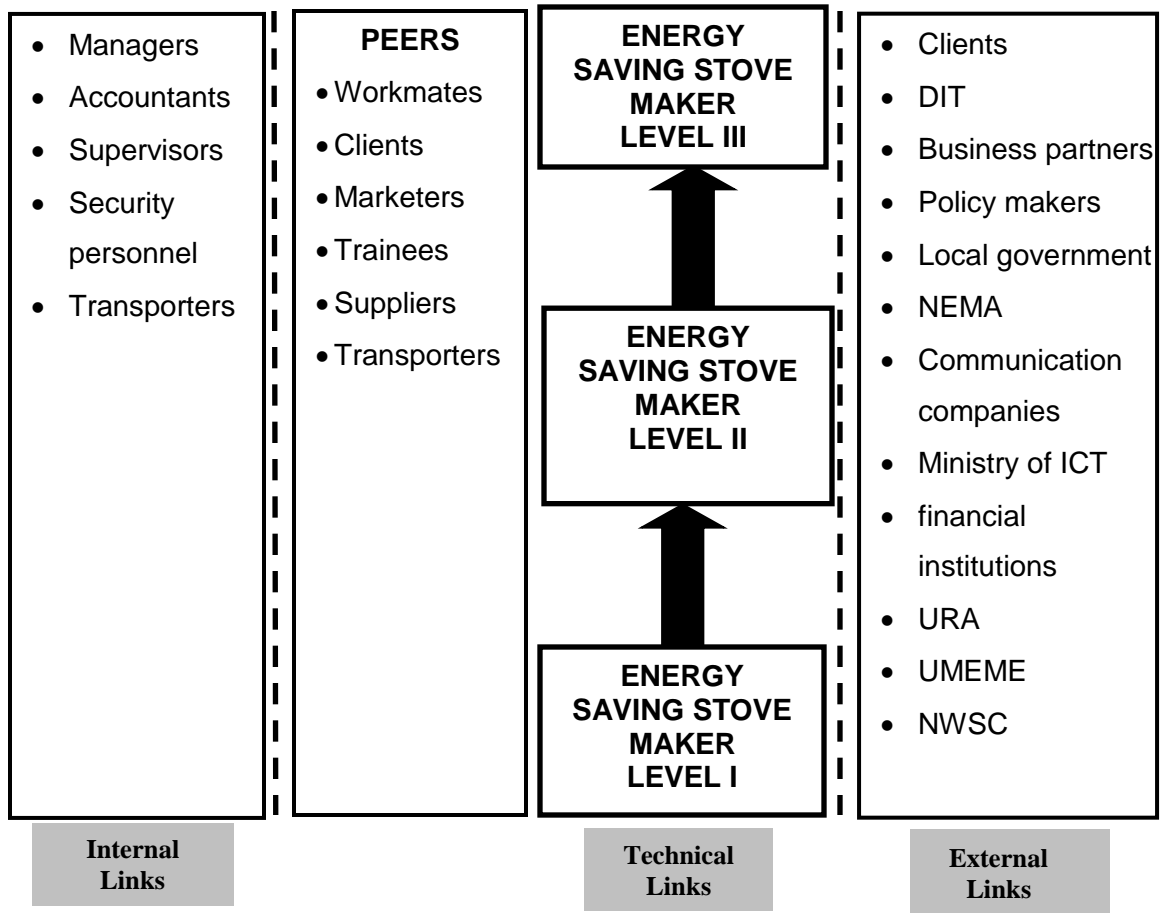
Developed by: Directorate of Industrial Training
(Qualifications Standards)

Dates of workshop: 21th –25th September 2020

NOMENCLATURE FOR THE OCCUPATION OF ENERGY SAVING STOVE MAKER

Definition: AN ENERGY SAVING STOVE MAKER: Is a person who is able to design, manufacture and repair heating stoves.

JOB ORGANISATION CHART FOR AN ENERGY SAVING STOVE MAKER



Descriptions for the levels in the occupation of an "Energy Saving Stove Maker"

- Level I:** Is a person who is able to make domestic mud stove using locally available materials
- Level II:** Is a person who is able to make improved cooking stoves by using modern materials like metal claddings, fined clays lines, adding insulating materials and able to fabricate metallic stove frames
- Level III:** Is a person who is able to conduct heat energy needs assessment, make institutional stoves, saunas, incinerators, fireplace, ovens, chimney pipes and kilns.

Duties and Tasks

A. PLAN STOVE MAKING WORK	A1. Identify /conduct needs assessment	A2. Source capital	A3. Source workers
	A4. Prepare Budget	A5. Prepare business plan	A6. Mobilise resources
B. PERFORM ADMINISTRATIVE TASKS	B1. Procure materials, tools and equipment	B2. Hire labour	B3. Train workers
	B4. Pay workers	B5. Keep records	B6. Supervise work
	B7. Manage conflict		
C. MAKE STOVE LINERS	C1. Select clay	C2. Clean clay	C3. Make clay heat resistant
	C4. Strengthen clay	C5. Prepare insulating materials	C6. Shape clay
	C7. Dry liners	C8. Put air holes	C9. Fire liners
	C10. Paint liners	C11. Assemble liners	
D. FABRICATE STOVE FRAMES	D1. Select materials	D2. Design stoves	D3. Take measurements
	D4. Mark materials	D5. Make templates	D6. Cut materials
	D7. Join materials	D8. Perform finishing	
E. ASSEMBLE STOVE PARTS	E1. Collect stove parts for assembling	E2. Fix parts together	E3. Check for defaults
	E4. Correct defaults	E5. Paint stove	E6. Label stoves
	E7. Store stoves		

F. MARKET STOVES	F1. Transport stoves	F2. Conduct market survey	F3. Advertise stoves
	F4. Price stoves	F5. Brand stoves	F6. Pack stove
	F7. Sell stoves	F8. Obtain customer feed back	

G. REPAIR AND MAINTAIN STOVES	G1. Identify faults on stove	G2. Service tools and equipment	G3. Store tools and equipment
	G4. Repair and replace faulty parts	G5. Clean tools and equipment	G6. Replace damaged liners and worn out parts

H. OBSERVE HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION PRACTICES	H1. Observe health and safety policy	H2. Wear personnel protective equipment	H3. Clean work area
	H4. Administer first aid	H5. Perform firefighting	H6. Promote health awareness campaign
	H7. Manage waste		

Additional Information

<p>Generic Knowledge and Skills</p> <ol style="list-style-type: none"> 1. Welding skills 2. Building skills 3. Painting skills 4. Machine operating skills 5. Measurement skills 6. Management skills 7. Elementary mathematics 8. First aid skills 9. Entrepreneurship skill 10. Computer skills 	<ol style="list-style-type: none"> 11. Record keeping 12. Technical knowledge 13. Soldering and de-soldering 14. Electrical equipment 15. Lubricating skills 16. Known workshop rules and regulations 17. Energy and e nut conservation 18. Environmental health safety 19. Basic knowledge on engineering 20. Knowledge on material science
<p>Tools Materials and Equipment</p> <ol style="list-style-type: none"> 1. Wheelbarrow 2. Snip 3. Mallet hammer 4. Ball pen hammer 5. Tape measure 6. Scribes 7. Punches 8. Jerrycans 9. Mold (in and out mold) 10. Buckets 11. Water 	<ol style="list-style-type: none"> 12. Clay 13. Sheet metal 14. Polythene sheet 15. Vermiculite & Mica 16. Plastic pipes 16. Fire 17. Kiln 18. PPEs 19. Saw dust/coffee husks/ firewood 20. Ordinary bricks 21. Pounding rod
<p>Future Trends and Concerns</p> <ol style="list-style-type: none"> 1. High initial capital to start business 2. competition 3. Counterfeits products 4. New upcoming hybrid stoves or new technologies 5. Limited work place 6. Substandard tools 	<p>Attitudes/ Traits/ Behaviour</p> <ol style="list-style-type: none"> 1. Honesty 2. Flexibility 3. Tolerant 4. Patient with customers 5. Clean 6. Knowledgeable 7. Listen to customers 8. Teachable 9. Respectful 10. Hospitable 11. Responsible 12. Hard working 13. Social 14. Punctual

2.0 ATP-PART II

Training Modules for an ENERGY SAVING STOVE MAKER

- 2.1 A curriculum is a “guide / plan for teaching and learning” which provides a guide to teachers, instructors and learners. In the envisaged system of competence-based or outcome-oriented education and training (CBET), Curricula are no longer the benchmark against which assessment is conducted. It is rather the Occupational Profile and the related Test Items that provide the benchmark for assessment as well as for Curriculum development.
- 2.2 This modular format of the curriculum allows learners of the ENERGY SAVING STOVE MAKER OCCUPATION to acquire job specific skills and knowledge (i.e. competencies) module by module. A single module can be accomplished within a relatively short duration allowing learners to move directly into an entry level job, do further modules and advance to higher levels of training. Modular courses allow more learners to access the training system because training centres as well as companies can accommodate more learners in a given period of time.
- 2.3 The modules were developed jointly by both instructors from training centres and job practitioners. They were developed using the Occupational Profile as a reference point and taking into account the specifications of training and learning outcomes in the form of Test Items described in Part II.
- 2.4 The modules contain “Learning-Working Assignments” (LWAs) and related “Practical Exercises” (PEXs) as key elements.
- LWAs are simulated or real job situations / assignments that are suitable for learning in a training environment (e.g. “small projects”). In a working environment, LWAs are real work situations.
- PEXs are therefore sub-sets of a LWA.
- 2.5 In principle, and following the philosophy of Competence-Based Education and Training (CBET), the modules can be used as a guide for learning in a training centre or at the work place; or combinations of both.

WHO IS AN ENERGY SAVING STOVE MAKER QUALIFICATION LEVEL 1?

An **Energy Saving Stove Maker Level 1**: Is a person who is able to design, manufacture and repair heating stoves.

TRAINING MODULES FOR AN ENERGY SAVING STOVE MAKER UVQ LEVEL 1

Code	Module Title	Average duration	
		Contact hours	Weeks
UE/ESSM/M1.1	Make Clay Energy Saving Firewood Stove	240	6
UE/ESSM/M1.2	Make Clay Energy Saving Firewood Stove Liners	240	6
UE/ESSM/M1.3	Assemble Stoves	320	8
UE/ESSM/M1.4	Manage Stove Business	160	4
Summary	4 Training Modules	960 hours	24 weeks

Note: Average duration is contact time but NOT calendar duration

It is assumed that:

- 1 day is equivalent to 8 hours of nominal learning and
- 1 month is equivalent to 160 hours of nominal learning.

Information given on the average duration of training should be understood as a guideline. Quick learners may need less time than indicated or vice versa.

At completion of a module, the learner should be able to satisfactorily perform the included Learning Working Assignments, their Practical Exercises and attached theoretical instruction, as the minimum exposure.

Prior to summative assessment by recognised Agencies, the users of these Module Guides are encouraged to carefully consider continuous assessment using samples of (or similar) performance (practical) and written test items available in part 3 of this ATP.

Code	UE/ESSM/M1.1
Module title	M1.1: Make Clay Energy Saving Firewood Stove
Related Qualification	Part of: Uganda Vocational Qualification (Energy Saving Stove Maker UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to design, build and test a stove.
Learning-Working Assignments (LWAs)	<p>LWA 1/1: Prepare Clay LWA 1/2: Prepare Insulation Materials LWA 1/3: Build Stove LWA 1/4: Test Stove LWA 1/5: Observe Health Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The learning exercises may be repeated until the trainee acquires a targeted competence. 2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises (PEXs)	<p>LWA 1/1: Prepare Clay PEX 1.1: Select clay PEX 1.2: Clean clay PEX 1.3: Pound clay PEX 1.4: Ferment clay</p> <p>LWA 1/2: Prepare Insulation Materials PEX 2.1: Select material PEX 2.2: Mix insulation materials</p> <p>LWA 1/3: Build Stove PEX 3.1: Select site PEX 3.2: Prepare site PEX 3.3: Mould stove</p> <p>LWA 1/4: Test Stove PEX 4.1: Correct defects PEX 4.2: Check the consistency of the size and design PEX 4.3: Light stove</p>

	<p>LWA 1/5: Observe Health Safety and Environmental Protection Practices</p> <p>PEX 5.1: Observe health and safety policy PEX 5.2: Wear personnel protective equipment PEX 5.3: Clean workplace PEX 5.4: Administer first aid PEX 5.5: Perform firefighting PEX 5.6: Manage waste</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.
Pre-requisite modules	None
Related knowledge/ theory	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Metrology • Health and safety precautions • Types of clay and their properties • Moulding • Technical skill • Stove insulations • Air flow (circulation) • Maximum use of raw materials and time in preparations • Technology advancement
Average duration of learning	<p>240 hours (30days)</p> <ul style="list-style-type: none"> • 10 days of occupational theory and • 20 days of occupational practice
Suggestions on organisation of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from item bank
Minimum required tools/ equipment/ implements or equivalent	tape measures, hoes, wheelbarrows, trowel, moulder, spirit level, pounding rod, buckets, jerry cans, sieves, first aid kits, helmet, overall, safety boot, tool box, masks, gloves, gaggles, paper, pen/ pencil.

Minimum required materials and consumables or equivalent	saw dusts, mica, vermiculite, cement, paint, ant hill soil, grass, cow dung,
Special notes	

Code	UE/ESSM/M1.2
Module title	M1.2 Make Clay Energy Saving Stove and Liners
Related Qualification	<u>Part of:</u> Uganda Vocational Qualification (Energy Saving Stove Maker UVQ1)
Qualification Level	1
Module purpose	By the end the module, the trainee shall be able to make a stove liner and ordinary kiln.
Learning-Working Assignments (LWAs)	<p>LWA 2/1: Prepare Clay LWA 2/2: Mould Clay LWA 2/3: Make Ordinary Kiln LWA 2/4: Fire Liners LWA 2/5: Observe Health and Safety and Environment Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. The learning exercises may be repeated until the trainee acquires a targeted competence. 2. The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.
Related Practical Exercises (PEXs)	<p>LWA 2/1: Prepare Clay PEX 1.1: Select clay PEX 1.2: Clean clay PEX 1.3: Pound clay PEX 1.4: Ferment clay</p> <p>LWA 2/2: Mould Clay PEX 2.1: Shape clay PEX 2.2: Put air holes PEX 2.3: Dry liners</p> <p>LWA 2/3: Make Ordinary Kiln PEX 3.1: Select bricks PEX 3.2: Build local kilns</p> <p>LWA 2/4: Fire Liners PEX 4.1: Put liners in kiln PEX 4.2: Set fire PEX 4.3: Monitor burning</p>

	<p>LWA 2/5: Observe Health and Safety and Environment Protection Practices</p> <p>PEX 5.1: Observe health and safety policy PEX 5.2: Put on personnel protective equipment PEX 5.3: Clean workplace PEX 5.4: Administer first aid PEX 5.5: Perform firefighting PEX 5.6: Manage waste</p>
<p>Occupational health and safety</p>	<p>Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.</p>
<p>Pre-requisite modules</p>	<p>None</p>
<p>Related knowledge/ theory</p>	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Types of clay • Quality of clay • Tools used to select clay • Clay impurities • Clay cleaning operation • Clay mixing ratios and tools • Reason for mixing clays • Clay additives and pounding • Pounding operation • Clay fermenting and operations • Drying procedure for liners • Clay shaping tools • Type of bricks to be used • Reason for type bricks to be used • Features of kiln • Uses of the features of the kiln shape (pyramidal) • Principal operation of the kiln • Method of arranging liners in the kiln • Factors considered when arranging liners in the kiln • Finishing the kiln entrance • Method of putting the firewood in the kiln • Process of making the fire in the kiln • Signs on quality burning • Time to seal the firewood entrance • The trait of the person monitoring

Average duration of learning	240 hours (30 days) of normal learning suggested to include: <ul style="list-style-type: none"> • 10 day of occupational theory and • 20 days of occupational practice
Suggestions on organisation of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank
Minimum required tools/ equipment/ implements or equivalent	hoe, wheelbarrow, spade, pic axe, tauplin, plastic paper, gloves, overall, face masks, gumboots, pounding rod, jerrycan, bucket, stove frame.
Minimum required materials and consumables or equivalent	water, clay, vermiculite, mica, firewood, fire, grass, bricks.
Special notes	

Code	UE/ESSM/M1.3
Module title	M1.3: Assemble Stoves
Related Qualification	<u>Part of:</u> Uganda Vocational Qualification (Energy Saving Stove Maker UVQ1)
Qualification Level	1
Module purpose	After completion of this module, the trainee shall be able to design, fix and brand stove.
Learning-Working Assignments (LWAs)	<p>LWA 3/1: Select Stove Parts</p> <p>LWA 3/2: Fix Stove Parts</p> <p>LWA 3/3: Paint Stoves</p> <p>LWA 3/4: Observe Health Safety and Environmental Protection Practices</p> <p>Note:</p> <ol style="list-style-type: none"> <i>The learning exercises may be repeated until the trainee acquires a targeted competence.</i> <i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i>
Related Practical Exercises (PEXs)	<p>LWA 3/1: Select Stove Parts</p> <p>PEX 1.1: Measure stove components</p> <p>PEX 1.2: Select tools</p> <p>PEX 1.3: Select work area</p> <p>LWA 3/2: Fix Stove Parts</p> <p>PEX 2.1: Mix insulation materials</p> <p>PEX 2.2: Join stove components</p> <p>LWA 3/3: Paint Stoves</p> <p>PEX 3.1: Sand stove surface</p> <p>PEX 3.2: Mix paint</p> <p>PEX 3.3: Apply paint</p> <p>PEX 3.4: Label stock</p> <p>LWA 3/4: Observe Health Safety and Environmental Protection Practices</p> <p>PEX 4.1: Observe health and safety policy</p> <p>PEX 4.2: Put on personal protective equipment</p> <p>PEX 4.3: Clean workplace</p> <p>PEX 4.4: Administer first aid</p> <p>PEX 4.5: Perform firefighting</p> <p>PEX 4.6: Manage waste</p>

Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.
Pre-requisite modules	None
Related knowledge/ theory	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Metrology • Knowledge on different shapes • Basic knowledge on health, safety precautions • Heat transfer • Mass transfer lagging • Designs and sketches • Painting skills • Preparations on paints
Average duration of learning	<p>320 hours (40days) of normal learning suggested to include:</p> <ul style="list-style-type: none"> • 15 days of occupational theory and • 25 days of occupational practices
Suggestions on organisation of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank
Minimum required tools/ equipment/ implements or equivalent	tape measures, hummer, drill, spraying machine, snap, Rivet gun, sand paper, pliers, tire levels, e. channel, paint brush, gloves, masks, helmets, safety boots, gaggles, tri-square, wheelbarrow, first aid kit, tool box, over roll, pens, pencil, paper
Minimum required materials and consumables or equivalent	saw dusts, mica, vermiculite, grog, clay, cement, paint, rivets, galvanised sheets
Special notes	

Code	UE/ESSM/M1.4
Module title	M1.4: Manage Stove Business
Related Qualification	<u>Part of:</u> Uganda Vocational Qualification (Energy Saving Stove Maker UVQ1)
Qualification Level	1
Module purpose	At the end of this module, a trainee shall be able to start and manage a personal energy saving stove business
Learning-Working Assignments (LWAs)	<p>LWA 4/1: Keep Records</p> <p>LWA 4/2: Procure Materials</p> <p>LWA 4/3: Market Stove</p> <p>LWA 4/4: Manage Stock</p> <p>LWA 4/5: Observe Health Safety and Environmental Protection Practices</p> <p>Note:</p> <p>1 <i>The learning exercises may be repeated until the trainee acquires a targeted competence.</i></p> <p>2 <i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i></p>
Related Practical Exercises (PEXs)	<p>LWA 1/1: Keep Records</p> <p>PEX 1.1: Take records on incomes and expenditures</p> <p>PEX 1.2: Prepare financial records</p> <p>PEX 1.3: Set prices</p> <hr/> <p>LWA 1/2: Procure Materials</p> <p>PEX 2.1: Select materials</p> <p>PEX 2.2: Specify materials</p> <p>PEX 2.3: Purchase materials</p> <p>PEX 2.4: Handle materials</p> <p>PEX 2.5: Make requisitions</p> <hr/> <p>LWA 1/3: Market Stove</p> <p>PEX 3.1: Package stoves</p> <p>PEX 3.2: Advertise stove</p> <p>PEX 3.3: Survey markets</p> <p>PEX 3.4: Sell stoves</p> <p>PEX 3.5: Obtain customer feedback</p> <hr/> <p>LWA 1/4: Manage Stock</p> <p>PEX 4.1: Store stoves</p> <p>PEX 4.2: Check damages</p> <p>PEX 4.3: Take stock</p> <p>PEX 4.4: Monitor stock</p> <p>PEX 4.5: Provide security</p>

	<p>LWA 4/5: Observe Health Safety and Environmental Protection Practices</p> <p>PEX 5.1: Promote health awareness and campaign PEX 5.2: Provide first aid kits PEX 5.3: Observe 5s (sort, set in order, standardise, shine and sustain) PEX 5.4: Provide PPE</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.
Pre-requisite modules	None
Related knowledge/ theory	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Records of expenses and incomes • Balanced sheets, profit or loss sheet • Types materials to be used • Content of requisition • Material handling • Type of advertisement • Methods obtaining customers
Average duration of learning	<p>240 hours (30 days) of normal learning suggested to include:</p> <ul style="list-style-type: none"> • 10 day of occupational theory and • 20 days of occupational practice
Suggestions on organisation of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training Centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by a recognised assessment body using related practical and written test items from Item bank
Minimum required tools/ equipment/ implements or equivalent	wheelbarrow, van, boxes, polythene sacks, pens, books/ paper, box file, first aid kits, PPEs, sisal string
Minimum required materials and consumables or equivalent	fuel, stationary
Special notes	

3.0 ATP-PART III

Assessment Instruments for an ENERGY SAVING STOVE MAKER

- 3.1 Assessment of occupational competence is the procedure by which evidence is gathered and judged to decide if an individual (candidate) has met the stipulated assessment standards or not. In this ATP the **standards** to assess occupational competences are reflected in the form of the Occupational Profile and related Test Items.
- 3.2 Assessment of occupational competence should comprise both practical (performance) testing and written (theory/knowledge) testing.
- 3.3 Based on the Occupational Profile, a combined panel of job practitioners and Instructors developed a substantial number of test items for assessing (practical) performance as well as items for assessing occupational knowledge (theory) all stored in an electronic Test Item Bank (TIB) at Directorate of Industrial Training.
- 3.4 Performance (Practical) Test Items (PTI) are closely related to typical work situations in Ugandan business and manufacturing enterprises. They comprise a test assignment for candidates and assessment criteria and/or scoring guides for assessors' use.
- 3.5 Written Test items (WTI) for written testing of occupational theory, (knowledge) are presented in different forms which include:
- Short answer test items.
 - Multiple choice test items and,
 - Matching test items, These WTIs herein focus on functional understanding as well as trouble-shooting typically synonymous with the world of work.
- 3.6 Composition of assessment / test papers will always require good choices of different types of WTI in order to ensure the assessment of relevant occupational knowledge required of candidates to exhibit competence.
- 3.7 The test items contained in the Test Item Bank may be used for continuous / formative assessment during the process of training as well as for summative assessment of candidates who have acquired their competences non-formally/or informally.
- 3.8 In this document, the following samples of test items for assessing both performance (practical) and occupational knowledge (theory) of **ENERGY SAVING STOVE MAKER** are included:

3.9 Overview of test item samples included:

No.	Type of Test Item	Numbers included
1	Written (Theory)- short answer	4
2.	Written (Theory)- multiple choice	4
3.	Written (Theory)- matching item- generic	2
4.	Written (Theory)- matching item (work sequence)	3
5.	Performance (Practical) test items	3
Total		16

WRITTEN TEST ITEMS (SAMPLES)

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 1			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C3			
Date of OP:	September 2020			
Related modules:	M 1.1			
Time allocation:	3 minutes			

Test Item	Outline three practices done when preparing clay for making strong liner
Answer spaces	(i) (ii) (iii)
Expected key (answers)	(i) Mixing up deferent types of clay (ii) Add in additives like vermiculite (iii) Fermenting clay (iv) Pounding clay

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 2			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C3			
Date of OP:	September 2020			
Related modules:	M 1.1			
Time allocation:	3 minutes			

Test Item	Mention two advantages of record keeping
Answer spaces	(i) (ii) (iii)
Expected key (answers)	(i) Ability to track sales (ii) Ability to monitor business performance (profit/loss) (iii) Ability to know expenses of the company

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 3			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C3			
Date of OP:	September 2020			
Related modules:	M 1.1			
Time allocation:	3 minutes			

Test Item	State the three health and safety practices in liner making
Answer spaces	(i) (ii) (iii)
Expected key (answers)	(i) Wear personnel protective equipment (ii) Clean work environment (iii) Manage waste materials

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 4			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C3			
Date of OP:	September 2020			
Related modules:	M 1.1			
Time allocation:	3 minutes			

Test Item	List any two uses of stove door shutter
Answer spaces	(i) (ii)
Expected key (answers)	(i) To allow air into the combustion chamber (ii) It aids the removal of ash (iii) To control air circulation

DIT/ QS	Test Item Database Written (Theory) Test Item- no. 5			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	✓		
	Matching item	Generic	Cause- Effect	Work- sequence
Complexity level:	C1			
Date of OP:	September 2020			
Related module:	M1.2			
Time allocation:	2 minutes			

Test Item	Vermiculite is added to the clay in liner making because it
Distractor and correct answers	A. Beautifies the liners B. Adds strength to the liners C. Retains heat in the liners D. Makes burning easy

Expected key (answers)	C
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DIT/ QS	Test Item Database Written (Theory) Test Item- no. 6			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C2			
Date of OP:	September2020			
Related module:	M 1.2			
Time allocation:	2 minutes			

Test Item	Which of the following tools is used to sharp a liner of the stove?
Distractor and correct answers	A. Hoe B. Pic axe C. Die D. Taurplin

Expected Key (answer)	C
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DIT/ QS	Test Item Database Written (Theory) Test Item- no. 7			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C2			
Date of OP:	September 2020			
Related module:	M 1			
Time allocation:	2 minutes			

Test Item	In order to manage a stove business, one needs to know how to
Answer spaces	A. Keep records B. To mix the clay C. Make a liner D. Obtain the frame of the stove

Key (answer)	A
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DIT/ QS	Test Item Database Written (Theory) Test Item- No. 8			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C2			
Date of OP:	September 2020			
Related modules:				
Time allocation:	1 minute			

Test Item	Identify one tool used in fitting when assembling an energy saving stove
Distracters and correct answer	A. Plier B. Hammer C. Pair of scissors D. Tape measure

Key (answer)	B
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DIT/QS		Test Item Database Written (Theory) Test Item- no. 9			
Occupational Title:	Energy Saving Stove Maker				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer				
	Multiple choice				
	Matching item	Generic	Cause-Effect	Work-sequence	
		√			
Complexity level:	C 2				
Date of OP:	September 2020				
Related Modules:					
Time allocation:	4 minutes				

Test Item	Match the tools used in making each of the following components in stove making
------------------	---

Column A	
A	Liner
B	Casing
C	Kiln

Column B	
1	Snip
2	Hoe
3	Die
4	Hammer
5	Hacksaw

Key (answer)	A-3, B-1, C-2
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DIT/QS		Test Item Database Written (Theory) Test Item- no. 10			
Occupational Title:	Energy Saving Stove Maker				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer				
	Multiple choice				
	Matching item	Generic	Cause- Effect	Work-sequence	
		√			
Complexity level:	C 2				
Date of OP:	September 2020				
Related Modules:					
Time allocation:	4 minutes				

Test Item	Match the following tools with their functionalities
------------------	--

Column A (Tools)	
1	Drill
2	Sand paper
3	Wheelbarrow
4	Spraying machine

Column B (Functionalities)	
A	Apply paint
B	Transport material
C	Smoothing surface
D	Make holes in materials
E	Drive nails in to stoves
F	Put rivets

Key (answer)	1-D, 2-C, 3-B,4-A
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DIT/QS	Test Item Database Written (Theory) Test Item- no. 11			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
				√
Complexity level:	C 2			
Date of OP:	September 2020			
Related Modules:				
Time allocation:	4 minutes			

Test Item	State the procedure observed when preparing clay for making a liner
-----------	---

Column A (chronology)	Column B (work steps) in wrong chronological order	
1 st	A	Pound clay
2 nd	B	Mix up different clay
3 rd	C	Clean clay
4 th	D	Ferment clay
5 th	E	Select clay
6 th	F	Add additives

Key (answer)	1-E, 2-C, 3-B, 4-F, 5-A, 6-D
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DIT/QS	Test Item Database Written (Theory) Test Item- no.12			
Occupational Title:	Energy Saving Stove Maker			
Competence level:	Level 1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
				√
Complexity level:	C 2			
Date of OP:	September 2020			
Related Modules:				
Time allocation:	4 minutes			

Test Item	Arrange in order the steps used when assembling a stove
------------------	---

Column A (chronology)	Column B (work steps) in wrong chronological order	
1 st	A	Mix insulation material
2 nd	B	paint stove
3 rd	C	Label stove
4 th	D	fit stove components
5 th	E	select tools to be used
6 th	F	sand stove surface

Key (answer)	1-B, 2-E, 3-F, 4-C, 5-A, 6-D
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DIT/QS	Test Item Database Written (Theory) Test Item- no. 13				
Occupational Title:	Energy Saving Stove Maker				
Competence level:	Level 1				
Code no.					
Test Item type:	Short answer				
	Multiple choice				
	Matching item	Generic	Cause- Effect	Work-sequence	
				√	
Complexity level:	C 2				
Date of OP:	September 2020				
Related Modules:					
Time allocation:	4 minutes				

Test Item	Arrange in order the steps taken when building an energy saving firewood stove
------------------	--

Column A (chronology)	Column B (work steps) in wrong chronological order	
1 st	A	Build the foundation
2 nd	B	Build the combustion chamber
3 rd	C	Select area
4 th	D	Mix material
5 th	E	Select material
6 th	F	Ferment material
7 th	G	Cure the stove
8 th	H	build the stove body

Key (answer)	1-C, 2-E, 3-D, 4-F, 5-A, 6-B,7-H, 8-G
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PERFORMANCE TEST ITEMS (SAMPLES)

DIT/ QS	Test Item Database Performance Test Item- no.14
Occupational Title:	Energy Saving Stove Maker
Competence level:	Level 1
Code no.	
Test Item:	Prepare clay for making liners
Complexity level:	P1
Date of OP:	September 2020
Related modules:	M1.1
Related skills and knowledge:	<ul style="list-style-type: none"> ▪ Types of clay ▪ Clay mixing ratio ▪ Clay impurities ▪ Pounding tools ▪ Fermenting process/operation
Required tools, Materials and Equipment:	Assorted clay, water, vermiculite, mica, hoe, spade, pounding rod, water containers, taurplin,
Time allocation:	6 hours
Preferred venue:	Production workshop
Remarks for candidates	Observe health safety rules
Remarks for assessors	Provide different types of clay

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Select clay	Identify quality clay		2
		Select tools to be used		2
2	Clean clay	Manually remove unwanted impurities from clay	1	3
3	Mix clay	Mixed clay, vermiculite and mica in correct ratios	2	2
4	Pound clay	Used right tools for pounding clay		1

		Pounded correctly	1	3
5	Ferment clay	Covered pounded clay		2
6	Observe health and safety rules	Fully dressed safety gears		4
		Clean work place		4
TOTAL			4	23
Maximum Score (Y)		(X/Y) x 100	27	

DIT/QS	Test Item Database Performance Test Item- no.15
Occupational Title:	Energy Saving Stove Maker
Competence level:	Level 1
Code no.	
Test Item:	Prepare stove insulation materials
Complexity level:	P1
Date of OP:	September 2020
Related module:	
Related skills and knowledge:	<ul style="list-style-type: none"> • Mixing ratios • Homogenous mixing (uniformity of mixture) • Safety precautions
Required tools, Materials and Equipment:	Mica, grog, cement, water, bucket, taurplin, spade
Time allocation:	1½ hours
Preferred venue:	Stove workshop
Remarks for candidates	<ul style="list-style-type: none"> • Tools and equipment should be used appropriately • Observe safety and health precautions
Remarks for assessors	<ul style="list-style-type: none"> • Provide all the listed materials above • Prepare assessment area

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Select tools and equipment	Bucket, spade, taurplin		2
2	Prepare insulation materials	Measured the right quantities of insulating materials to for the right ratios	3	
		Mix the materials uniformly to form a homogenous mixture	2	
		Sprinkled the right quantity of water into the mixture while turning it until wet	3	1
3	Test the product	The end product did not crumble or become watery when pressed in the palm		4
Total			8	7
Maximum Scores(Y)		(X/Y) x 100	15	

DIT/ QS	Test Item Database Performance Test Item- no.16
Occupational Title:	Energy Saving Stove Maker
Competence level:	Level 1
Code no.	
Test Item:	Make a domestic clay firewood saving stove
Complexity level:	P3
Date of OP:	September 2020
Related module:	
Related skills and knowledge:	<ul style="list-style-type: none"> • Safety precaution • Taking measurements • Clay preparation • Site selection criteria • Moulding skill • Insulating materials and their preparation • Stove designing
Required tools, Materials and Equipment:	Clay, dry grass, water, combustion chamber, saucepan, tarpaulin, hoe, spade, measuring tape, jerrycan, panga, trough, wheelbarrow, safety gears, trowel, set moulds,
Time allocation:	8 hours
Preferred venue:	Stove workshop
Remarks for candidates	<ul style="list-style-type: none"> • Report any accidents /injuries to the supervisor as soon as possible • Observe safety and health precautions
Remarks for assessors	<ul style="list-style-type: none"> • Provide necessary tools and materials • Organise assessment area prior to the practical • Prepare assessment area

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Prepare the clay	Grass was chopped into small pieces		1
		The clay was sorted to remove unwanted materials, then pounded		2
		The chopped grass was mixed with the clay in a ratio		4
		Add water to the mixture to make it mouldable	2	
		Mixture was covered and left to ferment for two days	2	
2	Site selection And design the stove	Selected site, levelled the site ground, measured calculated the size (width and height) of the combustion chamber, air inlets and firewood box relevant to the diameter of the saucepan	4	
3	Lay stove foundation	Build stove base at least 6cm above the ground		1
4	Construct the combustion chamber, air inlet and firewood box	Identified a mould that fit in a range combustion chamber air inlet & firewood box calculated during stove designing	2	
		Used pounded clay to construct the combustion chamber, air inlet and firewood box	2	
		Correctly positioned the mould on to the stove base already built to form the combustion chamber air inlet and firewood box	2	
5	Construction of the stove body	Add the clay mixture on to the mould up to the brim or top of the vertical mould o	2	
6	Construct saucepan cavity	Positioned the saucepan so that its bottom sits at the top centre of the vertical mould	1	
		Filled the space around the saucepan with the clay mixture up to the height of the saucepan rim	2	
		Removed the saucepan carefully by rotating it back and forth while lifting it out to form the saucepan cavity 2	2	
		Trimmed the saucepan cavity to a thickness of 3cm	3	

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
		Build three saucepan seats at the base of the saucepan cavity	3	
7	Smoothen the stove body	Stove body was smooth without dents and rough surfaces	2	
8	Remove moulds	Stove was left to set for 1-2hours the moulds were removed and cleaned		2
9	clean	Cleaned tools		1
		Cleaned work area		1
		Collected material back to the store		1
		Disposed of the waste		1
Total			30	14
Maximum Scores(Y)		(X/Y) x 100	44	

4.0 ATP- PART IV

INFORMATION ON DEVELOPMENT PROCESS

4.1 Occupational Profile Development (September2020)

The Occupational Profile was exclusively developed by job practitioners of Energy Saving Stove Maker occupation, Secondary school teachers who double as examiners of Technology and Design with the Uganda National Examination Board (UNEB) and Curriculum Development Specialists working with the National Curriculum Development Centre (NCDC).

The job expert panel, guided by UVQF Facilitators defined duties and tasks performed and provided additional generic information regarding the occupation.

4.2 Training Module Development (September 2020)

Based on the Occupational Profile for Energy Saving Stove Maker of September2020, Training Modules were developed by job practitioners, guided by UVQF Facilitators.

4.3 Test Item Development (September2020)

Based on the Occupational Profile for Energy Saving Stove Maker of September 2020and Training Modules, Test Items were developed by combined panels of instructors and job practitioners, guided by UVQF Facilitators.

4.4 Methodology

The rationale for the Assessment and Training Package development was to link Vocational Education and Training to the real world of work by bridging Occupational Standards to Training Standards through industry-led Standards-Based Assessment.

Active participation of both instructors and job practitioners' panels consolidated the development philosophy.

The panellists worked as teams in workshop settings complemented by off-workshop field research and literature review activities including international benchmarking.

4.5 Development Panel

The participating panel of Job Practitioners required for different stages of the assessment training package i.e. occupational profile, training modules, assessment instruments were constituted by members from the following organisations;

Development Panel		
S/No	Name	Institution / Organisation
1	Turinayo K.Yonah	WWF-Uganda
2	Kaweesa Ronald	SSEG Ltd
3	Nalubega Agnes	St. Denis S.S Gaba
4	Nahabwe Donnalee	Ntinda VTI
5	Nyerer Julius	Muterere SSS Bugiri
6	Hirya Hamdani	NCDC
7	Mucunguzi Joseph	Nakawa VTI
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4.6 Facilitator team

This Assessment and Training Package was developed by a Facilitator team listed below:

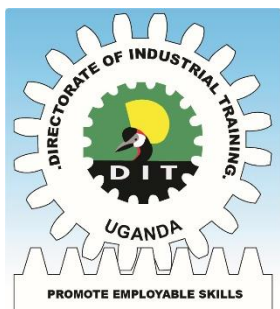
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4.7 Reference time:

The Assessment and Training Package was compiled in September 2020 and may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions:

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