



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

ADVANCED SECONDARY CURRICULUM



METAL WORK ASSESSMENT GUIDELINES



NCDC
NATIONAL CURRICULUM
DEVELOPMENT CENTRE

2026

ADVANCED SECONDARY CURRICULUM

METAL WORK **ASSESSMENT GUIDELINES**

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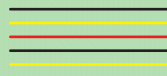
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A product of the National Curriculum Development Centre for the Ministry of Education and Sports with support from the Government of Uganda

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P.O. Box 7002,
Kampala- Uganda
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ISBN: 978-9970-494-56-9

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Acknowledgements

The National Curriculum Development Centre (NCDC) is indebted to the Government of Uganda for financing the development of these Assessment Guidelines to support the implementation of the Advanced Secondary Curriculum.

Our gratitude goes to the Ministry of Education and Sports for overseeing the development process, the Curriculum Task Force of the Ministry of Education and Sports for the guidance and timely decisions whenever necessary, and members of the public who made helpful contributions towards shaping these Guidelines.

NCDC is also grateful to UNEB, Members of Parliament, schools, universities, and other tertiary institutions, the writing panels, critical reviewers, and professional bodies for their contribution towards the design and development of these Assessment Guidelines. To all those who worked behind the scenes to finalise the production of these Guidelines, your efforts are invaluable.

NCDC takes responsibility for any shortcomings that might be identified in this publication and welcomes suggestions for effectively addressing the inadequacies. Such comments and suggestions may be communicated to NCDC through P. O Box 7002, Kampala, or Email: admin@ncdc.go.ug or on the Website: www.ncdc.go.ug



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Introduction

This assessment guidelines document is developed as a companion to the Assessment Framework for Advanced Secondary Curriculum and should be read and applied in conjunction with it. The Framework provides the overarching principles, standards, and requirements for assessment across all subjects, while this guideline contextualises those provisions to the specific demands and practices of Metalwork as a subject.

The end-of-cycle assessment for Metalwork will be administered by Uganda National Examinations Board (UNEBC). The assessment will be guided by two assessment objectives drawn from the two assessment constructs. The assessment items will be set at the level of the construct, allowing learners to integrate knowledge, skills and values drawn from the topics within a construct in order to address a societal challenge or problem.

Continuous assessment in Metalwork will be conducted through project work and will contribute to the learner's final grade at the end of the cycle.

1.1 Assessment Objectives

Assessment objectives for Metalwork focus on the learner's ability to:

AO1: Design Metalwork products and analyse materials and tools to ensure safe fabrication in accordance with established procedures.

AO2: Make Metalwork products using suitable resources, while ensuring compliance with health, safety and environmental standards.

1.2 Linkage Between Assessment Objectives, Constructs and Syllabus

The table below shows a linkage between the assessment objectives, constructs, and topics in the syllabus that contribute to the construct.

Table 1:

Table showing relationship between assessment objectives, constructs and the topics in the syllabus

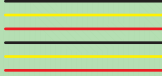
Assessment Objective	Construct	Construct Description	Topics in the Syllabus
AO1	Design innovations and analysis	Classifying, selecting, and applying materials, tools, safety and procedures for designing and producing detailed, working drawings with technical accuracy for the fabrication of Metalwork products.	1) Engineering Materials 2) Metal Fabrication and foundry design processes
AO2	Metal Fabrication and production	Designing and fabricating functional metal products by selecting appropriate tools, materials and joints then apply sustainable fabrication practices, while demonstrating creativity and technical skill.	1) Metal Fabrication Process (Arc Welding and Fasteners) 2) Metal Fabrication Process (Gas Welding, Brazing and Soldering) 3) Foundry (Sand Casting) 4) Foundry (Fettling Process)

Table of Constructs

The table below details the constructs for Metalwork, i.e., the competencies out of learning outcomes that make up the construct, the expected learner abilities, and what the assessor should look out for in the learner's work as evidence of achievement of the intended learning outcomes (indicators of mastery).

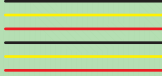
Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
Design innovations and analysis Classifying, selecting, and applying; materials, tools, safety, and procedures for designing and producing	i) categorise materials used in metal fabrication processes.	a) classify metals and non-metals based on properties and applications.	i) groups workshop materials into ferrous, non-ferrous, alloys, and non-metallic ii) identifies uses of materials (e.g., copper – conductor, stainless steel – alloy) iii) differentiates structural from decorative and functional applications. iv) documents classification results with local industry examples.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
detailed working drawings, with technical accuracy for the fabrication of Metalwork products.		b) analyse material properties to determine suitability for design.	i) examines hardness, ductility, and tensile strength of samples. ii) justifies choice of material for specific products. iii) compares alternative materials for similar applications. iv) relates material properties to safety and durability needs.	
	ii) integrate complementary materials in Metalworking	a) select and combine non-metallic materials with metals in design.	i) identifies appropriate non-metallic materials (wood, rubber, plastics). ii) justifies use of complementary materials for specific products.	High



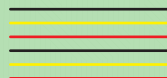
Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	processes. (k, u, s gs)	b) evaluate performance of combined materials.	iii) demonstrates joining techniques between metals and non-metals in design. iv) produces a product design integrating at least two material types. i) examines the durability and strength of joints in design. ii) speculates performance under load, wear, or environmental conditions in the design. iii) suggests improvements to enhance performance iv) aligns performance outcomes with client requirements.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	iii) apply appropriate tools, safety, and procedure in metalworking activities in the community. (k, u, s, gs)	a) select and use appropriate tools and equipment. b) adhere to safety and follow established procedures. c) practice resource efficiency in fabrication.	i) proposes ways of minimizing waste during fabrication. ii) proposes strategies of reusing off-cuts and leftover materials in new projects. iii) proposes recycling methods for scrap metals. iv) documents proposal of material-saving techniques in workshop.	High



Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
		d) promote environmentally friendly practices.	v) chooses non-toxic finishes and treatments in the design. vi) designs projects incorporating recycled materials. vii) proposes strategies that reduces energy use in fabrication and foundry where possible. viii) raises community awareness on sustainable Metalwork.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	iv) develop designs of metal products for use in the community. (k, u, s, gs)	a) create context-responsive product designs.	i) produces sketches and working drawings of intended fabricated products. ii) produces sketches and working drawings of patterns in foundry. iii) incorporates locally available materials in designs. iv) adjusts designs to base on user and community needs. v) evaluates designs against cost and functionality.	High
		b) innovate in Metalwork product design.	i) generates alternative concepts for a problem.	



Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
			ii) uses digital out of manual tools for innovative drawing layouts. iii) produces prototypes with creativity and technical accuracy. iv) demonstrates originality in blending new and traditional methods.	
Metal Fabrication and production Fabricating functional	i) make products that employ cutting processes.	a) fabricate components using cutting tools.	i) selects appropriate cutting tools for different jobs. ii) performs precise cuts within tolerances. iii) deburrs and finishes cut surfaces to standards.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
metal products by selecting appropriate tools, materials and joints. Applying sustainable fabrication practices while demonstrating creativity and technical skill.		a) evaluate quality of cut products. b)	iv) produces products like hinges, clamps, or keys. i) checks surface finish against specifications. ii) verifies accuracy of cut dimensions. iii) identifies and corrects cutting errors. iv) tests durability of products under load.	
	ii) apply mechanical force to reshape metallic material to	a) reshape metals using cold and hot working.	i) performs hammering, forging, or bending. ii) produces shapes within $\pm 1\text{mm}$ dimensional accuracy. iii) prevents cracking or deformation during work.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	achieve a desired shape. (k, u, s, gs)	iv) applies safety measures in reshaping processes. b) assess reshaped products for functionality. i) measures accuracy against design specifications. ii) tests the strength of reshaped items. iii) identifies visible and hidden defects. iv) improves reshaping techniques based on findings.		
	iii) apply heat treatment to metal to improve its	a) modify metal properties through controlled	i) heats and cools metals under controlled conditions. ii) adjusts hardness, ductility, and toughness as required.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	performance and suitability for specific engineering applications.	thermal processes.	iii) applies techniques such as annealing, hardening, and tempering. iv) produces metals with properties suited to engineering use.	
		b) assess effectiveness of heat treatment.	i) tests hardness and strength of treated metals. ii) compares treated and untreated samples for performance. iii) evaluates suitability of heat-treated metals for specific applications. iv) suggests improvements to treatment processes.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	iv) make patterns for metal casting for use in communities. (k, u, s, gs)	a) make reusable casting patterns.	i) uses drawings of patterns effectively. ii) selects materials considering shrinkage and durability. iii) fabricates patterns with correct draft angles. iv) ensures dimensional accuracy.	High
		b) assess quality of patterns.	i) checks shrinkage allowances against standards. ii) tests usability in multiple casting operations. iii) identifies defects like misalignment. iv) suggests improvements for durability.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	v) form core prints for metal casting for use in communities. (k, u, s, gs)	a) design core prints for mould stability.	i) uses drawings of core print structures. ii) selects materials for durability. iii) constructs print with locating pins. iv) ensures $\leq 0.5\text{mm}$ core shift.	High
		b) evaluate effectiveness of core prints.	i) tests stability during casting. ii) detects shifts or defects in placement. iii) compares performance of alternative designs. iv) documents findings for improvement.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	vi) prepare moulding sand to make strong moulds for use in metal castings. (k, u, s, gs	a) mix moulding sand for strength. b) test moulding sand quality.	i) measures correct ratios of sand, binder, and water. ii) achieves moisture content 3–5%. iii) ensures mould strength >15 kpa. iv) documents mixing procedure. i) evaluates strength under pressure. ii) detects defects caused by poor mixing. iii) adjusts ratios to improve results. iv) relates findings to product quality.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	vii) make a moulding box (flask) for metal casting for use in communities. (k, u, s, gs)	a) construct durable moulding boxes.	i) selects suitable materials. ii) reinforces flasks for stability. iii) incorporates alignment pins. iv) ensures ≤1mm cope-drag misalignment.	Moderate
		b) test flask performance.	i) evaluates strength under load. ii) monitors alignment during casting. iii) detects cracks out of defects in flasks. iv) records performance results.	
	viii) demonstrate ability to safely melt	a) melt and pour safely.	i) handles molten metal with safety gear. ii) pours without spillage.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	metal and pour it into moulds to create high quality castings. (k, u, s, gs)		iii) produces castings free of cold shuts out of gas holes. iv) follows risk-control procedures.	
		b) evaluate casting quality.	i) inspects castings for defects. ii) compares results with safety and quality standards. iii) suggests improvements to pouring methods. iv) records outcomes in reports.	
	ix) create accurate moulds for metal casting that ensures precision and	a) fabricate moulds with precision.	i) constructs moulds with engineered gates and vents. ii) prevents porosity and defects. iii) ensures dimensional accuracy. iv) produces defect-free castings.	High

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	defect free casting. (k, u, s, gs)	b) assess casting moulds for quality.	i) inspects moulds for alignment and porosity. ii) tests castings against design specifications. iii) identifies causes of defects. iv) recommends corrections in mould preparation.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	x) use different types of joints to assemble metal parts in the construction of various metal products. (k, u, s, gs)	a) select and apply appropriate joining methods.	i) chooses joining techniques (welding, brazing, riveting, screwing). ii) executes joints with accuracy and safety. iii) produces assemblies like G-clamps or hinges. iv) verifies joints against strength out of load requirements.	High
		b) test and evaluate joint performance.	i) performs load tests on assemblies. ii) detects and repairs weak joints. iii) compares different jointing methods for efficiency.	

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	xi) apply finishing to metal fabricated products to enhance surface quality and functionality. (k, u, s, gs)	a) perform surface finishing for durability.	iv) documents test results for assessment. i) applies techniques like electroplating, painting, or polishing. ii) achieves surface finish to Ra $\leq 3.2\mu\text{m}$. iii) uses tools and materials correctly in finishing. iv) tests resistance to corrosion or wear.	Moderate

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
		b) enhance functionality and aesthetics.	i) selects finishes that match intended product use. ii) demonstrates color or texture finishing for appeal. iii) evaluates customer satisfaction with finishes. iv) improves finishing based on feedback.	
	xii) demonstrate surface finishing on a casting to meet the required standards for its intended	a) finish castings to required standards.	i) polishes surface to $ra \leq 1.6\mu m$. ii) applies food-safe or industrial coatings. iii) uses appropriate polishing tools. iv) ensures customer compliance standards.	High

Construct	Learning Outcome The learner should be able to:	Abilities The learner is able to:	Indicators of Mastery The learner should be able to:	Level of Complexity
	use by the customer. (k, u, s, gs)	b) assess surface finishing quality.	i) inspects finish for accuracy and uniformity. ii) tests durability of finished surfaces. iii) evaluates suitability for client needs. iv) recommends improvements for finishing.	

Structure of the Assessment Papers

The Advanced Secondary Metalwork curriculum will be assessed through two assessment papers: **Paper 1** and **Paper 2**. Each paper will be based on a single scenario and will focus on one assessment objective. In addition, **Paper 2** will be supplemented with a coursework component.

Paper 1: Metalwork design

This paper will present one scenario with related tasks designed to assess Construct H1 (Design Innovations and analysis), fulfilling Assessment Objective 1 and will be scored to 100%. The duration of the paper will be 3 hours and 15 minutes.

Paper 2: Metalwork Practical

This paper will involve a scenario-based task requiring learners to produce a functional Metalwork product. It will draw from Construct 2 (Metal Fabrication and production) and will address Assessment Objective 2. The exam will take 3 hours and 15 minutes and will be scored to 70% by UNEB.

Coursework Component (Continuous Assessment)

Continuous assessment will contribute the remaining 30% of paper 2 (Metalwork practical) and will be based on a project theme set by UNEB. Between S5 Term 2 and S6 Term 2, learners will be required to produce both a physical product and a portfolio. UNEB will provide detailed assessment checklists and set the official deadlines for submission of scores.

Metal Work

Paper I

November 2025

Time: 3 hours 15 minutes

UGANDA ADVANCED CERTIFICATE OF EDUCATION

METALWORK

PAPER I

METALWORK DESIGN

Time: 3 hours 15 minutes

INSTRUCTIONS TO CANDIDATE

This question paper consists of two scenario items (the theory item and the drawing item)

Answer all the tasks.

Answer item 1 in the answer booklet and item 2 in the drawing paper A2

- 1) Abaa Early Childhood School has experienced a rise in enrolment of children aged 5–6 years, creating a need for additional chairs. To solve this problem, the school plans to hire a technician to design and produce affordable, durable chairs using materials that can perform well in daily use. During the selection process, technicians will be assessed based on how effectively and efficiently they can produce quality chairs.

Available materials in the school store include:

Mild Steel Round Rod

Mild Steel Flat Plate

Paint

Grease

Task:

Provide a detailed explanation in writing with justification of the process the candidate will present to be chosen as successful candidate.

- 2) During the overhaul of a lathe machine in the school's metal workshop, a technician discovered that excessive noise during operation was caused by a damaged flanged bush. Since a replacement could not be found on the local market, the technician consulted the metalwork teacher and they agreed to produce a new part by casting it in the school workshop. The design specifications of the required part were obtained from the lathe machine (as illustrated in Fig. 1). You have been assigned to assist in preparing the design of a suitable pattern that will be used to cast the lathe flange and bush

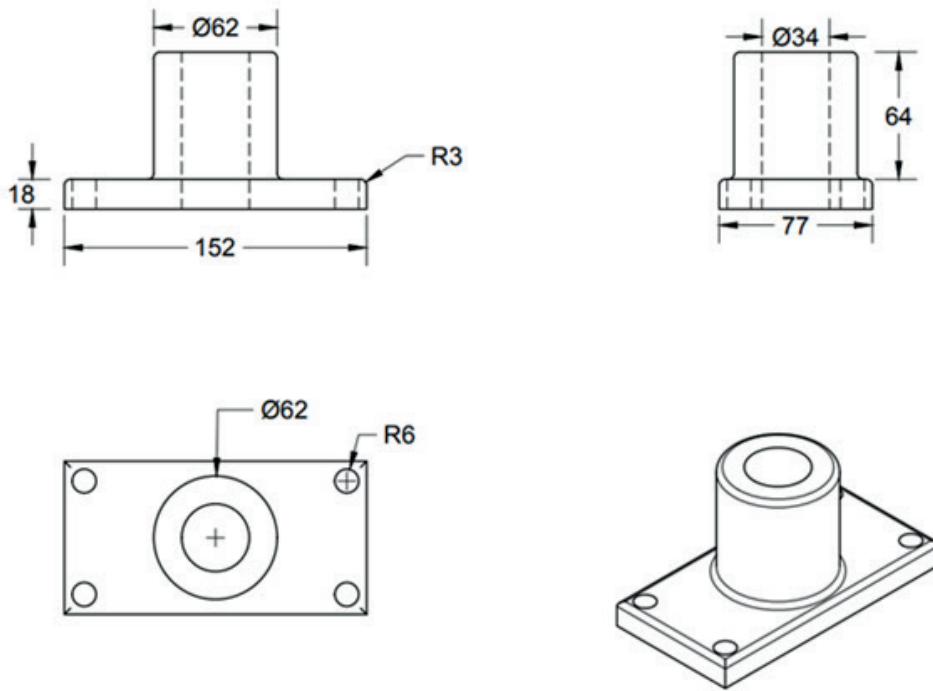


Fig.1

Task:

Guided by the dimensions provided in Fig. 1, prepare part assembly technical drawings of a suitable pattern for casting the flanged bush.

Metal Work

Paper II

November 2025

UGANDA ADVANCED CERTIFICATE OF EDUCATION
METALWORK
PAPER II - PRACTICAL
CONFIDENTIAL – For Schools Only

INSTRUCTIONS TO SCHOOLS:

This information must not be made accessible to students, either directly or indirectly.

The following items should be prepared to the specifications before the date of the examination.

S/N	MATERIALS	SPECIFICATIONS
1)	Mild Steel Round Rod	Ø12 mm x 200 mm
2)	Mild Steel Flat Plate	50 mm x 6 mm x 200 mm
3)	Paint	Enamel Paint & Primer
4)	Grease	High-Temperature

S/N	PROCESSES	TOOLS AND EQUIPMENT
1)	Measuring & Marking	Bench Measuring & Marking Tools
2)	Holding	Bench and machine holding devices
3)	Cutting	Bench cutting tools

4)	Forging	Forging tools
5)	Drilling	Drill bits (Ø4–Ø12 mm, for metal & timber)
6)	Finishing	i) Files (flat, half-round, round) ii) Emery cloth out of sandpaper (for metal & timber) iii) Paintbrushes (for enamel paint & primer)
7)	Joining	Arc welding machine (MMA) or MIG welder equipment

Metal Work

Paper II

November 2025

Time: 3 hours 15 minutes

UGANDA ADVANCED CERTIFICATE OF EDUCATION

METALWORK

PAPER II - PRACTICAL

Time: 3 hours 15 minutes

INSTRUCTION TO CANDIDATE

1. Read the scenario and task carefully before you begin.
2. Use only the materials provided; no additional resources or substitutes are allowed.
3. Observe all safety precautions while carrying out the task.

- 1) Mr. Mulindwa, a member of an environmental protection organization in Kyamakanda Village, was assigned the responsibility of reviving the organization's community library and staff quarters. From his observations, the doors and frames are still in good condition but require durable hinges and locks to remain functional. The hinges currently fitted on the exterior doors fail quickly because the doors (about 15 kg) are often handled roughly and are continuously exposed to harsh weather such as intense sunlight and heavy rain without maintenance.

After the environmental protection organisation's team inspected the doors (an example shown in figure 1) and confirmed the status of the doors, Mr. Mulindwa approached your workshop to develop a prototype hinge to serve as a model for mass production, aiming to produce hinges that will stand the test of time



Figure 1 illustrates damaged external doors on the old library.

Task;

Using appropriate metalwork tools, equipment, and available materials in the workshop, design and produce a sample hinge that will meet the expectations for the doors.

Assessment Rubrics

1.3 Paper 1 Metal Work Design

Output	Basis	4	3	2	1
Write up	Interpretation of the task in the context of; 1) Metal working processes, 2) materials selection and 3) tools usage	Demonstrates a comprehensive understanding of the metalworking choices for processes, materials selection and tools usage	Demonstrates general understanding of the metalworking choices for the process's materials selection and tools usage	Demonstrates limited understanding of the choices for identifying aspects of the woodworking processes, materials selection and tools usage	Demonstrates little or no understanding of the metalworking processes, materials selection and tools usage.
	Body Generating and presenting ideas on: 1) Material properties,	The learner explains at least $\frac{4}{5}$ of the indicators in detail for the designated metal working	The learner explains less than $\frac{4}{5}$ to $\frac{3}{5}$ of the indicators in detail for the designated metal working tasks and generates relevant	The learner explains less than $\frac{3}{5}$ to $\frac{1}{5}$ the indicators in detail for the designated concepts Attempts to address the task but includes	The learner explains less than $\frac{1}{5}$ of the indicators for the designated concepts. Fails to address the task

2) Metal processing and preparation, 3) Tool use and maintenance 4) Workplace safety, 5) environmental care 6) metal work workshop layout 7) Types of Joints	tasks, shows strong and logical connections between ideas and demonstrates synthesis and depth of the indicators	and well-developed ideas that address the task effectively.	limited or partially relevant ideas; development is minimal	meaningfully; ideas are irrelevant, vague, or absent.
Making Informed Judgement Use the written knowledge to form an informed opinion/ conclusion or judgement on woodworking processes and materials as	Forms an Opinion/conclusion that is highly informed, insightful, and well-reasoned; based on a comprehensive understanding	Forms an Opinion/conclusion that is clear, logical, and supported by relevant evidence; shows a sound understanding and some	Forms an opinion/conclusion that shows limited use of knowledge; reasoning is weak with minimal evidence or clarity.	Forms an opinion/conclusion that is unclear, unsupported, or irrelevant; no evident use of acquired knowledge or reasoning.

reflected in the scenario	and application of knowledge.	evaluation, though less deep.		
Drawings Metal work drawings and layout; 1) Layout (title block, annotations, labels)	In addition to (borderline, title block, and prints name, personal number, random number), the learner prints all. i.e; scale, title, date, client	In addition to (borderline, title block, and prints name, personal number, random number), the learner prints any three of; scale, date, client and title.	In addition to (borderline, title block, and prints name, personal number, random number), the learner prints any one of; scale, date, client and title.	The learner presents the borderline, title block, prints name, personal number and random number.
Metal work drawings; - 1) Original idea generation 2) Sketch development	The learner graphically presents comprehensive ly at least $\frac{4}{5}$ of the required	The learner graphically presents general views addressing less than $\frac{4}{5}$ to $\frac{3}{5}$ of the required	In addition to presenting construction lines or the outlines, the learner has less than $\frac{3}{5}$ to $\frac{1}{5}$ of the	The learner graphically presents less than $\frac{1}{5}$ or no indicators of the metalwork

	3) Detailed Views 4) Scale & Proportion 5) Symbols & Convention	indicators of the metalwork drawings with most of the key appropriate details as per the scenario / task (Scales used dimensions and tolerances, parts lists, symbols, line types, concept design).	indicators of the metalwork drawing with some of the key appropriate details (Scales used dimensions and tolerances, parts lists, symbols, line types, concept design).	required procedures demonstrating a partial drawing skills and, has an incomplete product but trajects to purpose.	drawing with limited details.
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1.4 Paper 2 Practical

Output	Basis of evaluation with indicators	Scores 4	Scores 3	Scores 2	Scores 1
A functional metal article	1) Ideation Generates drawings/write up about the required article; a) Isometric Sketches b) Names joints required in the scenario c) Produces exploded views of joints	Names and produces comprehensive proportional drawings in the context of the scenario that inform the product.	Names and produces general drawings in the context of the scenario but with minor lapse in proportion and remain informing the product.	Names and produces part of the drawings in the context of the scenario that inform the product.	Sketches generated do not align with the context of the scenario
	2) Production process of the product	Logically follows a comprehensive procedure for making the product in context with the	Follows the general procedure for making the product in context with the scenario meeting	Follows part of the procedure for making the product in context with the scenario	Follows limited procedure for making the product in context with

a) follows made drawings during production b) use appropriate tools c) utilises the provided material d) ensures safety during production	scenario meeting at least 4/5 of the expected indicators	3/5 to 2/5 of the expected indicators	meeting between 2/5 to 1/5 of the expected indicators	the scenario meeting less than 1/5 of the expected indicators
3) finishing of the product a) Neatly joined. b) Properly planed, sanded and varnished / painted. c) Work area cleaned. d) Tools returned	Follows a comprehensive finish for making the product in context with the scenario meeting at least 4/5 of the expected indicators and the article made is functional	Follows a general procedure in finishing the product in context with the scenario meeting 3/5 to 2/5 of the expected indicators and the article made is functional	Follows part of the finishing procedures and has some lapses in adhering to expected context of the scenario	Shows limited no adherence to finishing procedures, resulting in a product that lacks proper finishing.

Performance Level Descriptors

Metalwork learning will be graded across five performance levels, using descriptors outlined in the table:

5.1 PAPER 1: Metalwork design

Construct	Performance Level	Descriptor
Design Innovations and analysis Classifying, selecting, and applying materials, tools, safety, and procedures for designing and producing detailed, working drawings with technical accuracy, for the fabrication of Metalwork products.	Exceptional	Interprets client briefs and develops accurate Metalwork drawings and bills of materials; showing proper understanding of the metal material and their production processes.
	Outstanding	Interprets most client briefs, produces correct Metalwork drawings and bills of materials; and has fair understanding of metal material and their production processes.
	Satisfactory	Understands general client requirements, produces usable Metal technical drawings and bills of materials; as well as showing partial understanding of Metal material and their production processes.
	Basic	Translates part of client briefs into metal technical drawings and bills of materials with noticeable errors; and demonstrates limited understanding of metal material and their production processes.
	Elementary	Has difficulty interpreting client briefs, produces inaccurate metal technical drawings with no bills of materials; and demonstrates very limited understanding of metal material and their production processes.

5.2 Paper 2: Metalwork Practical

Construct	Performance Level	Descriptor
Metal Fabrication and production Designing and fabricating functional metal products by selecting appropriate tools, materials and joints; then apply sustainable fabrication practices while demonstrating creativity and technical skill.	Exceptional	Produces fully functional Metalwork products, applies safe Metalworking with eco-friendly practices and maximizes material usage.
	Outstanding	Produces well-made Metalwork items with minor flaws while adhering to safety and environmental standards and manages materials with minimal wastage.
	Satisfactory	Produces acceptable Metalwork products, applies basic safety and environmental measures; while showing reasonable care in efficiently using the materials.
	Basic	Produces functionally basic Metalwork items with noticeable errors, applies safe Metal working and environmental practices while inconsistently demonstrating limited efficiency in material usage.
	Elementary	Produces Metalwork items that lack functionality, rarely observes safety procedures and wastes materials due to inadequate planning or execution.



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ISBN 978-9970-494-56-9



9 789970 494569