



**basic education**

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Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

# **AGRICULTURAL TECHNOLOGY**

## **GUIDELINES FOR PRACTICAL ASSESSMENT TASKS**

**GRADE 12**

**2022**

**These guidelines consist of 25 pages.**

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## 1. INTRODUCTION

The 18 Curriculum and Assessment Policy Statements subjects (CAPS) which contain a practical component all include a practical assessment task (PAT). These subjects are:

- **AGRICULTURE:** Agricultural Management Practices, Agricultural Technology
- **ARTS:** Dance Studies, Design, Dramatic Arts, Music, Visual Arts
- **SCIENCES:** Computer Applications Technology, Information Technology, Technical Sciences, Technical Mathematics
- **SERVICES:** Consumer Studies, Hospitality Studies, Tourism
- **TECHNOLOGY:** Civil Technology, Electrical Technology, Mechanical Technology and Engineering Graphics and Design

A practical assessment task (PAT) mark is a compulsory component of the final promotion mark for all candidates offering subjects that have a practical component and counts 25% (100 marks) of the end-of-the-year examination mark. The PAT is implemented across the first three terms of the school year. This is broken down into different phases or a series of smaller activities that make up the PAT. The PAT allows for learners to be assessed on a regular basis during the school year and it also allows for the assessment of skills that cannot be assessed in a written format, e.g. test or examination. It is therefore important that schools ensure that all learners complete the practical assessment tasks within the stipulated period to ensure that learners are resulted at the end of the school year. The planning and execution of the PAT differs from subject to subject.

## 2. TEACHER GUIDELINES

### 2.1 Practical Assessment Task (PAT) for 2022

The aim of the PAT is to teach learners to solve technological problems in the agricultural environment by making use of critical, innovative and thinking skills.

The PAT comprises a design component, manufacturing component and a final product. The PAT leads the learner to be able to design and develop the product according to technological processes.

Schools will be informed of the Grade 12 project at the beginning of Term 4 of Grade 11 in order to allow the teacher and learner to do planning in advance.

The following is a scenario and a complete layout of the example model that can be used as the PAT for 2022.

#### SCENARIO:

A farmer needs a practical metal ladder that can also be used as a chair. The ladder must be used to reach high places in and around the farm workshop and serve as a chair when folded up.

Design a practical ladder chair that can be used effectively in this situation. The piece of equipment must be versatile in order to be used in various circumstances or conditions. It must be light, simple and easy to handle, but sturdy enough to carry heavy loads. The ladder must not easily tip over when used. It must also be used on the rest of the farm.

Use various technological processes to help you with the design and manufacturing of this piece of equipment, e.g. planning, investigation, research and various practical skills.

### 2.2 How to administer the PAT

This PAT document must be used by the teacher as a guideline on how the PAT must be done. The learner must design and plan the whole PAT individually with guidance from the teacher. The teacher will only provide the learners with the problem statement. Ideally, all the learners should have different PAT designs. The teacher must evaluate the learner's design for practicality and make suggestions before the learner submits the final design portfolio.

If the school/learners decide to do an alternative PAT, the PAT must comply with the prescribed standards set by this PAT guideline document. This will include evidence of the design portfolio, work procedure, rubrics and the evidence of the final product. The criteria and format for assessing the design portfolio, manufacturing process and final product must be the same as that of the prescribed PAT.

The project must consist of at least SEVEN of the given criteria as stated on pages 46–47 in the *Agricultural Technology: Curriculum and Assessment Policy Statement (CAPS)*.

The model should have functional value and must be usable in real-life farm and workshop situations. The learners should be familiar with the assessment criteria before they start with the task. The PAT must be done under the supervision of the designated teacher.

The practical assessment task in Grade 12 is externally set, internally assessed and externally moderated. The PAT is completed under controlled conditions and is assessed by means of a rubric.

The promotion mark of Agricultural Technology consists of a PAT component of 100 marks (25%), a school-based assessment (SBA) component of 100 marks (25%) and a final examination component of 200 marks (50%).

The PAT contributes 25% of the total promotion mark (400) in Grade 12. The PAT is 100 marks and consists of a design portfolio (25 marks), a manufacturing process (50 marks) and the final product (25 marks).

Before a learner can commence with the manufacturing process, the design portfolio must be completed and assessed by the teacher. The reason for this is that the teacher must identify design flaws for the learner to correct.

The design portfolio and the final product must be available for monitoring and moderation. The PAT must be evaluated, checked and authenticated by the teacher before it is presented as the learner's final evidence of performance.

The teacher's PAT file must contain evidence of:

- (a) The PAT task
- (b) A complete record of assessment that must always be available for monitoring and moderation purposes

The design portfolio and final product must be available for monitoring and moderation at the school during the entire school year.

External moderation will be done by the respective provincial moderators and the national Department of Basic Education (DBE). No learner is allowed to take his/her project home before external moderation has been completed.

Failure by the teacher to maintain a record of the assessment of the PAT is a misconduct and will be dealt with in terms of paragraph 5(3) of the policy document, *National Policy on The Conduct, Administration and Management of the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF)*, or other appropriate measures.

The absence of marks for the PAT in Grades 10–12, without a valid reason, will result in the candidate, registered for that particular subject, receiving an incomplete result. The candidate will be given three weeks' time before the commencement of the final end-of-year examination to submit the outstanding PAT. Should the candidate fail to present the PAT, the candidate will be informed that he/she did not meet the minimum requirements for promotion and that he/she must repeat the subject the following year.

## 2.3 Phases in the development of the PAT project

The project should be completed in the following three phases:

### 2.3.1 Phase 1: Design portfolio

Learners must identify the problem or need in their chosen project. He/She must also investigate the project, generate ideas and arrive at possible design solutions to make or produce, evaluate and communicate a solution to the problem or need. The evidence of this phase will be located in the design portfolio which will **start in the first week of Term 1** and **continue to the third week of Term 1**. In this phase the learner must be encouraged to be creative and show initiative.

A Declaration of Authenticity (ANNEXURE D) must be completed by each learner before final moderation.

The design portfolio should include evidence of how the development of the product was approached, as indicated below.

- Analysis and planning of the assignment
- Relationship between technology, society and environment
- Sketches, diagrams or calculations
- Materials used
- Tools used
- General safety rules that are applicable
- Comparisons of processes and tools to be used
- Cost calculations and material list
- Knowledge and skills needed in the manufacturing process
- Manufacturing processes that were followed
- Planning of time from the start to the final product
- Research or investigations undertaken
- Any other information that is relevant to the project

#### Format of the design portfolio:

**Cover page:** Learner's name  
Grade  
School  
Examination number  
Year

**Index:** Assignment  
Planning and research  
Design sketches  
Material list  
Tools needed and relevant safety measures  
Comparisons of processes and tools to be used  
Cost calculations  
Source list  
Steps to follow  
Any additional information

### 2.3.2 Phase 2: Manufacturing process

Learners start constructing the actual model at the **end of the third week of Term 1** or as soon as a learner has finished with the design portfolio and it has been approved by the teacher. From here the learner commences with Phase 2. The model must be completed **before the trial examinations commence in Term 3**.

The learner is expected to do the manufacturing of the model in the school's workshop, under close supervision of the teacher. Processes not performed by the learner cannot be assessed as part of the learner's work.

The model must include a number of practical skills, but it must be noted that the model must adhere to the minimum number of skills, as prescribed by the subject CAPS document.

Continuous assessment must be undertaken by the teacher during the manufacturing process to evaluate and assess certain skills and processes with the aid of the given rubric.

### 2.3.3 Phase 3: Final product

Learners submit the models for assessment by **the end of Term 3**. The design portfolio must also be submitted for assessment of the final product. The model/artefact must be completed, fully functional and the specifications must correspond with the design portfolio.

## 2.4 Criteria and guidelines for PAT assessment

The PAT consists of THREE phases. Each phase must be assessed by the teacher with the aid of the attached rubrics.

- The design portfolio must be completed and marked not later than the end of Term 1. As soon as a learner is finished with the design portfolio and has been assessed and approved by the teacher, he/she can commence with Phase 2. The teacher must use the rubric (ANNEXURE A) to assess the design portfolio.
- The manufacturing process is a continuous process and the various skills must be continuously assessed by the teacher when the different skills are applied. The rubric (ANNEXURE B) must be used.
- The final product must be evaluated and assessed according to the rubric (ANNEXURE C).
- ANNEXURE D is a Declaration of Authenticity and must be completed by each learner.
- ANNEXURE E must be used by the teacher to ensure that the Agricultural Technology workshop and facility is up to standard for external moderation.
- ANNEXURES F and G are examples of mark schedules that can be used.

**2.4.1 Criteria and guidelines for assessing the design portfolio (25 marks)**

- Analysis of problem
- Interrelationship between technology, society and the environment
- Ability to generate ideas
- Providing a solution
- Sketching (dimensions, welding symbols, scale and projection symbols)
- Materials, tools and equipment
- General safety rules
- Cost calculations and material list
- Evidence of comparisons between different processes and skills
- Portfolio presentation

**2.4.2 Criteria and guidelines for assessing the manufacturing process (face moderation) (50 marks)**

- Safe handling and maintenance of tools and equipment
- Skills related to proper use and maintenance of tools and equipment
- Knowledge of materials to solve problems
- Application of different techniques and processes
- Skills demonstrated in the application of processes

**2.4.3 Criteria and guidelines for assessing the quality of the final product (25 marks)**

- The product fulfils the purpose for which it was designed and shows innovation that is appropriate to the problem
- Dimensions and measurements of the final product
- Appearance: Finishing includes filing, grinding, sanding and painting
- Ensure that the product functions properly
- Time management: Check for the completeness of the product

**2.5 Moderation of the PAT**

- Internal moderation (head of department)  
The teacher and learner PAT portfolios must be moderated by the head of department or senior teacher of the subject at the school.
- External moderation (subject specialist)  
The subject specialist must do external moderation ONCE A TERM. At the end of Term 1, the subject specialist must moderate the design portfolio. The actual manufacturing process by the learner must be moderated by the subject specialist in Term 2. The final product must be moderated in Term 3, as well as the final PAT mark.
- External moderation (national panel)  
A panel of moderators appointed by the DBE will moderate the PAT and practical workshop. ANNEXURE E is the moderation tool that will be used by the national panel for moderation of schools.



**3. LEARNER GUIDELINES**

**3.1 Introduction**

The model to be constructed by the learners must include the processes taught in the theoretical work over the years, from Grade 10 to Grade 12. These processes are part of various tasks that can be undertaken on a farm. The learners use their skills and knowledge acquired in Agricultural Technology to engage in this project.

**3.2 Illustration of the PAT**

The photograph below shows a chair ladder that a farmer can use in the workshop to reach high places or to paint high areas. The project can be used as a stepladder or a chair, as shown below.



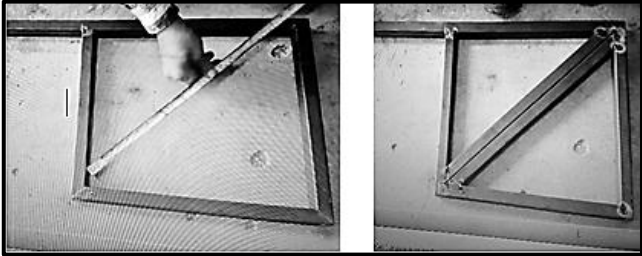


**3.3 Lists of consumable materials, machines and tools that are needed to manufacture the project**


TOOLS NEEDED		
Cut-off machine	Mitre square	Flat and round file
Drilling machine	Hacksaw	Personal protection clothing
Oxyacetylene heating equipment	Scriber	Broom
Welding machine	Tape measure	Clamps
Work bench	Centre punch	Paint brush
	Spanners	Hammer
	Pliers	Angle grinder

CONSUMABLE MATERIALS	
Steel drill bit Ø 4 mm	Hacksaw blades
Grinding/Cutting discs	Thinners
	Pencil
Spray paint	Hand cleaner
MIG wire and gas/Welding rods	Undercoat paint

## 3.4 Procedures to be followed in the process

PROPOSED WORK/TIME SCHEDULE	Predicted date																																																		
<p>Approximately 2 hours per week is needed for the PAT as prescribed in the CAPS document. Approximately 18 weeks (36 hours) are available for the manufacturing process.</p> <p><b>A. DESIGN PORTFOLIO (25 marks)</b></p> <ol style="list-style-type: none"> <li>The PAT problem statement/task must be handed to the learners. The teacher must explain the problem statement/task to the learners. Learners have <b>THREE</b> weeks to complete the design portfolio.</li> <li>The teacher must be actively involved and provide support for the learners during the design process.</li> <li>The teacher must collect, evaluate, assess and give feedback to the learners of the finished portfolios before the learners can commence with the manufacturing process.</li> <li>The learners must do the corrections on the design portfolios where necessary.</li> <li>The teacher must record the marks of the design portfolios on the SBA mark sheet.</li> </ol> <p><b>NOTE:</b> The learners must draw a scale drawing with labels of the chair ladder.</p>	<p>Week 1</p> <p>Week 2</p> <p>Week 3</p>																																																		
<p><b>B. MANUFACTURING PROCESS (50 marks)</b> (The teacher must monitor and evaluate the complete manufacturing process.)</p> <p>Video available: <a href="https://youtu.be/DreXyCvSN70">https://youtu.be/DreXyCvSN70</a> <a href="https://youtu.be/KckEXYfCZBc">https://youtu.be/KckEXYfCZBc</a></p> <table border="1"> <thead> <tr> <th>ITEM NO.</th> <th>QTY.</th> <th>DESCRIPTION</th> <th>LENGTH</th> <th>COST</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>6</td> <td>32 x 32 square tubing</td> <td>400 mm</td> <td>R125,00</td> </tr> <tr> <td>2.</td> <td>2</td> <td>32 x 32 square tubing</td> <td>800 mm</td> <td>R80,00</td> </tr> <tr> <td>3.</td> <td>4</td> <td>32 x 32 square tubing</td> <td>500 mm</td> <td>R100,00</td> </tr> <tr> <td>4.</td> <td>11</td> <td>16 x 16 square tubing</td> <td>400 mm</td> <td>R130,00</td> </tr> <tr> <td>5.</td> <td>2</td> <td>Flat steel bar 30 x 5 mm</td> <td>400 mm</td> <td>R25,00</td> </tr> <tr> <td>6.</td> <td>3</td> <td>Hinges 100 mm</td> <td></td> <td>R40,00</td> </tr> <tr> <td>7.</td> <td>6</td> <td>Wood 400 x 200 x 18 mm</td> <td></td> <td>R100,00</td> </tr> <tr> <td>8.</td> <td>36</td> <td>Screws 45 x 4 mm</td> <td></td> <td>R15,00</td> </tr> <tr> <td colspan="4" style="text-align: right;"><b>Total Cost:</b></td> <td><b>R650,00</b></td> </tr> </tbody> </table>	ITEM NO.	QTY.	DESCRIPTION	LENGTH	COST	1.	6	32 x 32 square tubing	400 mm	R125,00	2.	2	32 x 32 square tubing	800 mm	R80,00	3.	4	32 x 32 square tubing	500 mm	R100,00	4.	11	16 x 16 square tubing	400 mm	R130,00	5.	2	Flat steel bar 30 x 5 mm	400 mm	R25,00	6.	3	Hinges 100 mm		R40,00	7.	6	Wood 400 x 200 x 18 mm		R100,00	8.	36	Screws 45 x 4 mm		R15,00	<b>Total Cost:</b>				<b>R650,00</b>	
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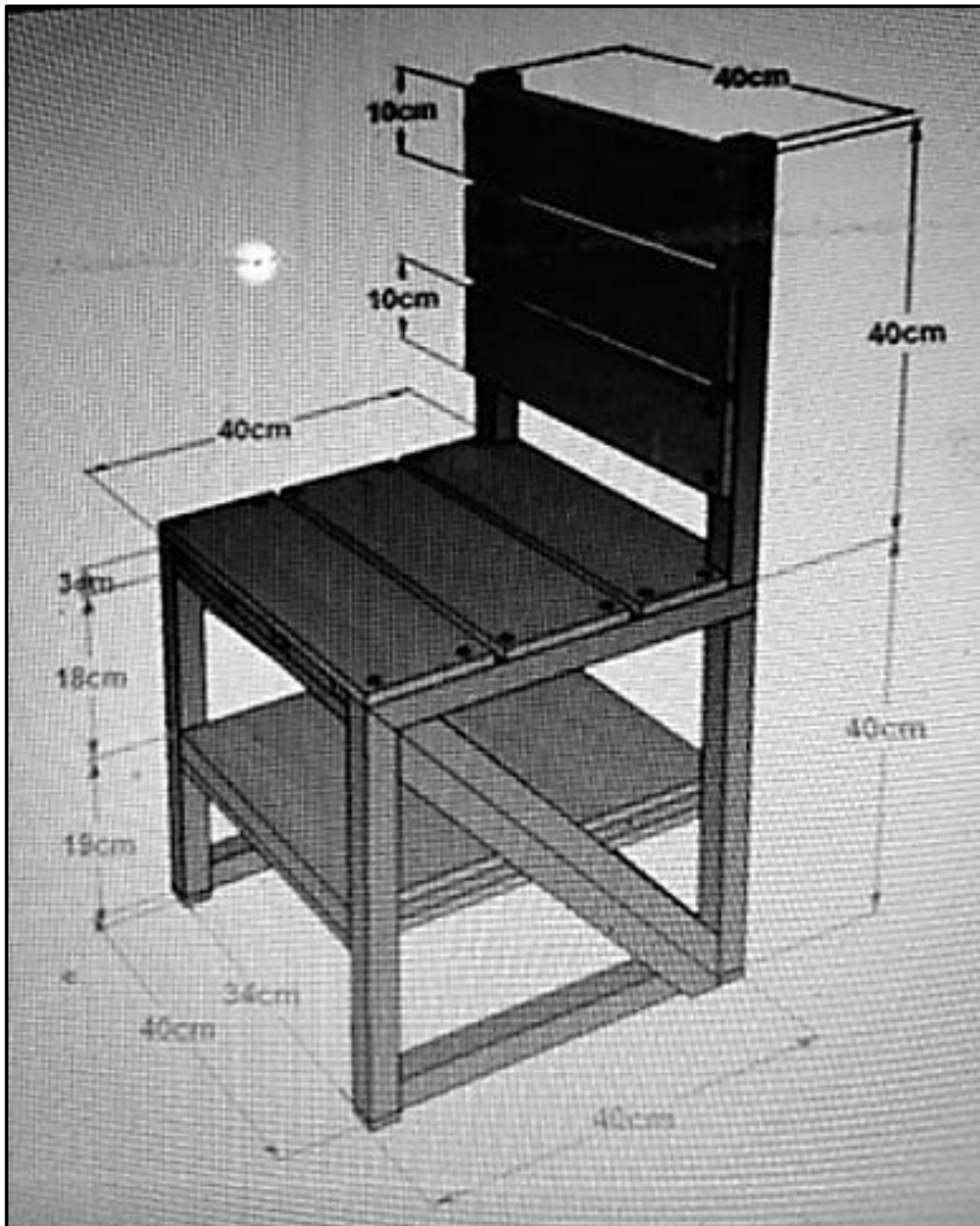
<p><b>Step 1: Build the two sides of the chair and step.</b></p> <p>Cut items 1, 2 and 3, total length 6 metres. Two of 800 mm, 6 of 400 mm and 4 of 500 mm. Cut 45° angels.</p> <p>Assemble as shown in pictures below. Spot-weld corners and take cross measurements to ensure 90° angles. Remember the top front corner and the bottom rear corner must not be finally welded until the cross pieces are in place.</p> <p><b>NOTE:</b> Remember the corners will be cut for the step.</p> <p>When the first side has been completed, place the other side on top and follow the same procedure.</p> 	<p>Week 5–7</p>
<p><b>Step 2: Fit the centre bars of the chair.</b></p> <p>Cut item 4. Weld the centre and cross bars, as shown in the photograph. This will be used to mount the steps. Separate the two parts of the step ladder with a grinder as shown below.</p> 	<p>Week 8–9</p>
<p><b>Step 3: Fit the hinges.</b></p> <p>Weld items 5 and 6, flat bar and hinges, as shown in photographs below.</p> 	<p>Week 10–11</p>

<b>Step 4:</b> Grind, sand and spray-paint the metal.	Week 12–13
<p><b>Step 5: Fit the wooden seat and steps.</b></p> <p>Cut items 7 and use item 8 to assemble wood in position, as shown below.</p> 	Week 14
<b>Step 6:</b> Varnish the wood.	Week 15
<p><b>C. FINAL PRODUCT (25 marks)</b></p> <ul style="list-style-type: none"> <li>• The teacher must evaluate the final product and finalise the PAT marks for the year.</li> <li>• The marks must be recorded on the SBA mark sheets.</li> </ul>	

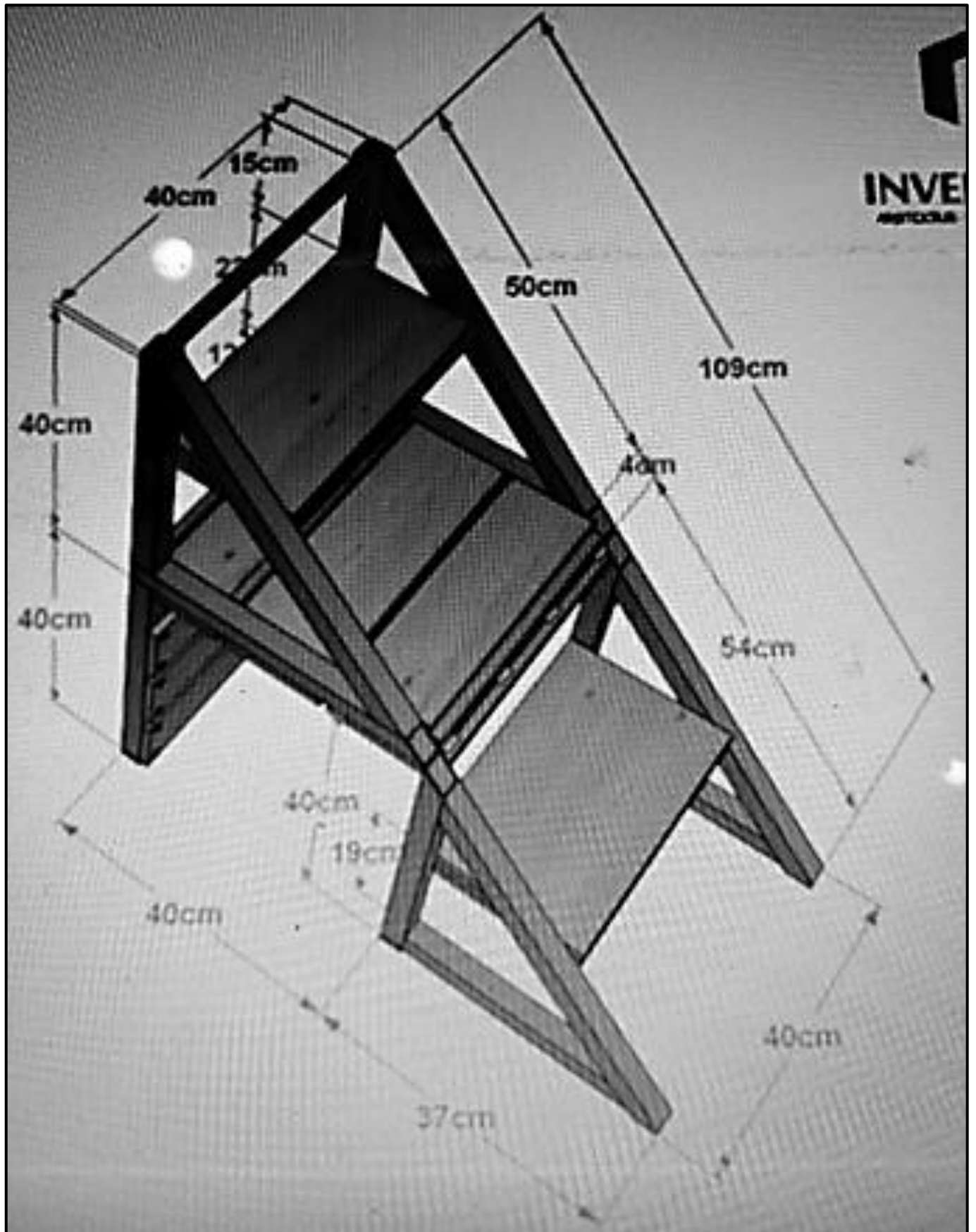
### 3.5

#### Safety

- Working safely on the work bench in a responsible manner will reduce your chances of an accident or injury.
- Always wear the appropriate safety gear and clothing for welding and metalworking. Clothing should be made of fire-retardant cotton or wool, never synthetics, which can melt.
- Always wear a helmet when welding and a full-face shield when grinding.
- Also wear leather welding gloves to protect against burns.
- You should always work in a well-ventilated area.

**3.6 Alternative designs**

**NOTE:** Video available.  
<https://youtu.be/DreXyCvSN70>  
<https://youtu.be/KckEXYfCZBc>



**4. CONCLUSION**

On completion of the practical assessment task, learners should be able to demonstrate their understanding of the industry, enhance their knowledge, skills, values and reasoning abilities as well as establish connections to life outside the classroom and address real-world challenges. The PAT furthermore develops learners' life skills and provides opportunities for learners to engage in their own learning.

## 5. ASSESSMENT RUBRICS

## ANNEXURE A

Name of learner: \_\_\_\_\_ School: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_

DESIGN PORTFOLIO	MANUFACTURING PROCESS	QUALITY OF PRODUCT	TOTAL	SIGNATURE OF TEACHER	SIGNATURE OF EXTERNAL MODERATOR
/25	/50	/25	/100		

5.1 ASSESSMENT RUBRIC FOR THE DESIGN PORTFOLIO								
CRITERIA	0	1	2	3	4	5	POSSIBLE MARK	MARK OBTAINED
Planning Skills: Analysis and diagnosis	No attempt was made and no evidence to be assessed is found.	Shows a limited attempt to identify and collect information to analyse the given problem or need.	Shows an attempt to identify and collect relevant information to analyse the given problem or need.	Identifies the given problem correctly and collects relevant information to analyse the problem or need.	Analyses the given problem correctly and shows evidence of the use of a wide range of information to understand the problem or need.	Identifies the given problem correctly and uses a variety of investigated strategies to obtain relevant information that assisted in developing and design of innovative ideas.	5	
Interrelationship between technology, society and environment	No attempt was made and no evidence to be assessed is found.	Makes no attempt to consider the interrelationship.	Awareness of the interrelationship was demonstrated.	Awareness and knowledge of interrelationship was demonstrated.	Application and knowledge of interrelationship aspects.	Application and knowledge of interrelationship aspects and the implementing of preventative measures.	5	
Generate ideas	No attempt was made and no evidence to be assessed is found.	Mentions some ideas.	Shows some awareness of alternative ideas	Offers some alternative ideas with a limited reasoning of choices.	Uses original and creative ideas and chooses the most suitable option.	Generates an excellent variety of alternative and innovative ideas. The preferred option is well justified with clear links to the design.	5	
Solution	No attempt was made and no evidence to be assessed is found.	Attempts to come up with limited design sketches and some specifications. Constraints relating to the given problem.	Attempts to come up with design sketches, specifications and constraints relating to the given problem.	Provides design sketches and a variety of specifications and constraints relating to the given problem.	Provides excellent design sketches and a list of relevant specifications and constraints to the given problem.	Provides excellent innovative design sketches that are extremely well formulated and defines the need according to the given problem.	5	



CRITERIA	0	1	2	3	4	5	POSSIBLE MARK	MARK OBTAINED
Sketching	No attempt was made and no evidence to be assessed is found.	Provides irrelevant sketches that demonstrate limited drawing skills.	Provides some relevant sketches with incorrect lines and/or wrong symbols.	Provides relevant sketches with correct lines and symbols.	Provides sketches with correct lines and symbols and related to the given problem.	Provides excellent sketches according to the given problem considering possible solutions.	5	
Material, tools and equipment list	No attempt was made and no evidence to be assessed is found.	Attempts to list some material, tools and equipment.	Provides a list of material, tools and equipment, incorrect or insufficient.	Provides a list of relevant material, tools and equipment.	Provides a list with a variety of relevant material, tools and equipment needed.	Provides a list of the most relevant material, tools and equipment needed in a creative format.	5	
General safety	No attempt was made and no evidence to be assessed is found.	Attempts to consider safety regulations.	Shows some awareness of safety regulations.	Shows awareness, knowledge and application of safety regulations.	Shows awareness, knowledge and application of safety regulations regarding a variety of conditions.	Shows awareness, knowledge and application of safety regulations regarding all conditions and considers preventative measures.	5	
Cost calculations and material list	No attempt was made and no evidence to be assessed is found.	Provides a material list with no calculations.	Attempts to do cost calculations by using incorrect units, data and material list.	Provides cost calculations using correct units and data collected without consideration of constraints.	Provides cost calculations using correct units and data collected and considers constraints.	Provides cost calculations using correct units and data collected and considers relevant constraints.	5	
Comparisons	No attempt was made and no evidence to be assessed is found.	No comparisons.	Poor comparison of one process.	Comparison of different processes, skills and materials.	A thorough comparison of different processes, skills and materials.	A thorough comparison of different processes, skills and materials and comes to a conclusion.	5	
Portfolio presentation	No attempt was made and no evidence to be assessed is found.	The portfolio is incomplete and poorly ordered and prepared.	The portfolio is completed but poorly ordered and prepared.	The portfolio is completed and adequately ordered and prepared.	The portfolio is completed and well presented.	The completed portfolio presentation shows a high level of innovation and creativity.	5	
<b>TOTAL MARK</b>							<b>50 ÷ 2 = 25</b>	

5.2 ASSESSMENT RUBRIC FOR THE MANUFACTURING PROCESSES							ANNEXURE B	
CRITERIA	0	1	2	3	4	5	POSSIBLE MARK	MARK OBTAINED
Safe handling of tools/equipment (face moderation)	No attempt was made and no evidence to be assessed is found.	Demonstrates awareness of safety measures.	Demonstrates awareness and knowledge of some safety measures.	Demonstrates adequate knowledge and awareness of applicable safety measures.	Demonstrates sufficient knowledge and awareness of all applicable safety measures.	Demonstrates sufficient knowledge and awareness of all applicable safety measures and applies preventative measures.	5	
Skills relating to handling of tools and equipment (face moderation)	No attempt was made and no evidence to be assessed is found.	Demonstrates limited knowledge and skills of equipment related to tools used.	Demonstrates some knowledge and skills related to tools and equipment used and housekeeping.	Demonstrates adequate knowledge and skills related to tools and equipment used and evidence of housekeeping.	Demonstrates adequate knowledge and skills related to tools and equipment used and good housekeeping.	Demonstrates sufficient knowledge and skills related to maintenance and use of tools and equipment and excellent housekeeping.	5	
Knowledge of materials	No attempt was made and no evidence to be assessed is found.	Shows limited background knowledge on materials used.	Shows some knowledge of materials and their properties.	Shows adequate knowledge of materials and their properties and concepts.	Shows adequate knowledge of materials and their properties, concepts and principles.	Shows sufficient knowledge of materials and their properties, concepts and principles to solve problems.	5	
Process techniques	No attempt was made and no evidence to be assessed is found.	Demonstrates some knowledge of inappropriate techniques used.	Demonstrates limited knowledge of techniques used.	Demonstrates adequate knowledge of correctly selected techniques.	Demonstrates adequate knowledge on how to select and apply the relevant techniques correctly.	Demonstrates sufficient knowledge of correctly selected and applied techniques considering possible constraints.	5	
Skills used in processes (face moderation)	No attempt was made and no evidence to be assessed is found.	Demonstrates limited knowledge of skills needed.	Demonstrates some knowledge of skills needed.	Demonstrates adequate knowledge of skills needed.	Demonstrates adequate knowledge of skills needed and considering some constraints.	Demonstrates sufficient knowledge of skills needed and considering relevant constraints.	5	
<b>TOTAL MARK</b>							<b>25x2 = 50</b>	

5.3 ASSESSMENT RUBRIC FOR THE QUALITY OF THE FINAL PRODUCT							ANNEXURE C	
CRITERIA	0	1	2	3	4	5	POSSIBLE MARK	MARK OBTAINED
Address the problem/need	No attempt was made and no evidence to be assessed is found.	The product is incomplete. The completed product lacks details and makes interpretation difficult.	The product is complete but does not address the problem or need at all.	The product is complete and addresses the problem or need partly.	The product fulfils the purpose for which it was designed and shows no real evidence of innovation in the solution to the identified problem or need.	The product fulfils the purpose for which it was designed and shows innovation that is appropriate to the identified problem or need.	5	
Dimensions and measurements of the final product	No attempt was made and no evidence to be assessed is found.	Dimensions differ completely from original design. Shows no effort in making correct measurements.	Dimensions differ from original design but show some effort in making correct measurements.	Some dimensions differ from original drawing design. More accuracy and effort are shown in making correct measurements.	Dimensions differ slightly from original design. Shows much more accuracy and effort in making correct measurements.	Measurements and dimensions correlate completely with original design.	5	
Appearance: Finishing off, filing, grinding, sanding and painting	No attempt was made and no evidence to be assessed is found.	No finishing off. No filing, painting or sanding. Shows little effort in making the appearance acceptable.	Product's appearance not acceptable due to some of the finishing methods that were not followed.	Product's appearance acceptable due to some of the finishing methods that were used.	Product's appearance more acceptable due to finishing off that was done, but no painting.	Product's appearance is very acceptable and shows a high level of innovation and creativity.	5	
Functionality of the final product Does the product function properly?	No attempt was made and no evidence to be assessed is found.	The product is incomplete and does not function at all.	The product is complete but it is not functional at all and shows no new improvements.	The product is complete and functions but shows no new improvements and little innovation.	The product is complete, functions well and shows some new improvements and innovation.	The product is complete, functions very well and shows many new improvements and a very high level of innovation.	5	
Time management	No attempt was made and no evidence to be assessed is found.	Very little evidence of time management.	Demonstrates some sense of time management but planning not realistic.	Evidence of realistic time management in planning but does not keep to the plan.	Manages time well according to the initial plan.	Manages time exceptionally well by considering alternatives according to the initial plan.	5	
<b>TOTAL MARK</b>							<b>25</b>	

**5.4 Declaration of Authenticity**

**ANNEXURE D**

**DECLARATION OF AUTHENTICITY**

The DESIGN PORTFOLIO has been presented in one of the following ways: sourcebook, workbook or file. It is part of the subject portfolio. The DESIGN PORTFOLIO must be completed prior to the manufacturing process.

The following has been included in the DESIGN PORTFOLIO:

- Analysis of the problem
- Interrelationship between technology, society and the environment
- Ability to generate ideas
- Providing a solution
- Sketching (dimensions, welding symbols, scale and projection symbols)
- Materials, tools and equipment
- General safety rules
- Cost calculations and material list
- Evidence of comparisons between different processes and skills
- Portfolio presentation

The complete PAT was done under the supervision of the designated teacher and without the help of anybody else. This is to certify that all work submitted is the original and own work of the learner. Processes not performed by the learner have not been assessed as part of the learner's work.

Learner		
School		
District		
	Signature	Date
Learner		
Teacher		
Principal		



## 5.5 External/Internal moderation tool for PAT

## ANNEXURE E

## AGRICULTURAL TECHNOLOGY

SCHOOL: \_\_\_\_\_ EMIS No.: \_\_\_\_\_

TEACHER: \_\_\_\_\_ GRADE: \_\_\_\_\_

SUBJECT SPECIALIST: \_\_\_\_\_ DATE: \_\_\_\_\_

NUMBER OF LEARNERS IN GRADE: \_\_\_\_\_

NUMBER OF LEARNERS TAKING THE SUBJECT IN GRADES 10–12: \_\_\_\_\_

1.	CONDITION OF THE WORKSHOP	GOOD <input checked="" type="checkbox"/>	ACCEPTABLE <input checked="" type="checkbox"/>	POOR <input checked="" type="checkbox"/>	COMMENTS
	Windows				
	Ceiling				
	Floor				
	Oil-resistant floor paint				
	Walls				
	Lights				
	Sufficient electric wall sockets				
	Electric wall sockets in working condition				
	Ventilation				
	Burglar proofing				
2.	TEACHER				YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>
	<b>Preparation file:</b>				
	☞ PAT guideline document				
	☞ Mark sheet				
	☞ Learner rubrics				
	☞ Reference material (additional information and resources given to learners by the teacher)				
	<b>Safety:</b>				
	☞ Safety screens/devices				
	☞ Acetylene/gas cylinders safe				
	☞ Welding areas well screened off				
	☞ Area around dangerous machines demarcated with yellow lines on the floor				
	☞ Serviced fire extinguisher				
	☞ First-aid kit				
	☞ Safety posters				
	☞ Safety signs				
	☞ Applicable OHS Acts implemented in workshop				
	☞ Number of learners in workshop per session not more than 15, as stipulated by the OHS Act				
	<b>Tools and equipment:</b>				
	☞ Fully equipped workshop				
	☞ Basic tools and equipment				
	☞ Damaged and broken equipment				
	☞ Shadow boards are against the walls or mobile units				

	<b>Workshop atmosphere:</b>	
	👉 Posters	
	👉 Exhibits	
	👉 Safe layout	
	👉 Workshop is purpose-built	
	<b>Cleanliness of storeroom:</b>	
	👉 Storeroom well organised	
	👉 Storeroom clean	
	<b>Cleanliness of workshop:</b>	
	👉 Workshop clean	
<b>3.</b>	<b>LEARNERS' PAT PROJECT FILES</b>	<b>YES <input checked="" type="checkbox"/></b> <b>NO <input type="checkbox"/></b>
	Learners followed the prescribed PAT.	
	If not, is the PAT project of the same standard or higher than the prescribed PAT?	
	All learners have PAT portfolio files.	
	All learners have a completed learner summary record sheet.	
	All learners completed the Declaration of Authenticity (p. 19).	
	All learners have copies of the Design Project (p. 9 to 14) in their PAT files.	
	Learners completed the following phases of the PAT sufficiently:	
	• Design	
	• Manufacturing	
	Evidence exists that all tasks have been assessed by the teacher.	
	All the rubrics have been completed and totals were carried over to the mark sheet correctly.	
	The assessment conducted by the teacher appears to be fair and reliable.	
	The mark allocation and level of achievement are in line with the rest of the province.	
	Adjustment of the average is needed.	
<b>4.</b>	<b>OVERALL QUALITY OF THE PROJECT</b>	<b>YES <input checked="" type="checkbox"/></b> <b>NO <input type="checkbox"/></b>
	All learners completed the project.	
	All learners' work has been internally moderated.	
	Final projects match the designs in the portfolio.	
	Marks allocated by the teachers using the rubrics match the available evidence in the learners' files.	
<b>5.</b>	<b>INTERNAL/EXTERNAL MODERATION</b>	<b>YES <input checked="" type="checkbox"/></b> <b>NO <input type="checkbox"/></b>
	There is evidence of internal moderation by the HOD.	
	There is evidence of internal moderation by the subject specialist.	
<b>6.</b>	<b>INTERNAL/EXTERNAL MONITORING</b>	<b>YES <input checked="" type="checkbox"/></b> <b>NO <input type="checkbox"/></b>
	There is evidence of internal monitoring by the HOD.	
	There is evidence of internal monitoring by the deputy principal.	
	There is evidence of internal monitoring by the subject specialist.	
<b>7.</b>	<b>Additional information. Add typed lists of the following information:</b>	
	Add list of equipment <b>needed</b> in the Agricultural Technology workshop.	
	Add list of equipment <b>in excess</b> in the Agricultural Technology workshop.	
	Add list of equipment that is broken beyond repair and that must be <b>written off</b> in the Agricultural Technology workshop.	

<b>Conclusive observations:</b>

_____ Signature: Teacher	_____ Date	_____ Signature: HOD	_____ Date
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_____ Signature: Subject facilitator	_____ Date	_____ Signature: Principal	_____ Date
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5.7 Consolidation form

ANNEXURE G

**AGRICULTURAL TECHNOLOGY**

SCHOOL: \_\_\_\_\_ CENTRE NUMBER: \_\_\_\_\_ EMIS NUMBER: \_\_\_\_\_

CIRCUIT: \_\_\_\_\_ DISTRICT: \_\_\_\_\_ YEAR: \_\_\_\_\_

	CANDIDATES	CANDIDATE EXAM NUMBER	Design portfolio	Manufacturing of product.	Quality of the final product	TOTAL	Moderated mark
			25	50	25	100	100
1.							
2.							
		<b>Total:</b>					
		<b>Average:</b>					

TEACHER: \_\_\_\_\_ SIGNATURE OF TEACHER: \_\_\_\_\_ DATE: \_\_\_\_\_

PRINCIPAL: \_\_\_\_\_ SIGNATURE OF PRINCIPAL: \_\_\_\_\_ DATE: \_\_\_\_\_

MODERATOR: \_\_\_\_\_ SIGNATURE OF MODERATOR: \_\_\_\_\_ DATE: \_\_\_\_\_