



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

MECHANICAL TECHNOLOGY

**GUIDELINES FOR
PRACTICAL ASSESSMENT TASKS**

2010

This guideline consists of 22 pages.

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SECTION A (Teacher Guidelines)

1. Background

The 17 National Curriculum Statement subjects which contain a practical component all include a Practical Assessment Task (PAT), i.e. a Practical or Performance Assessment Task. These subjects are:

- **AGRICULTURE:** Agricultural Management Sciences, Agricultural Technology
- **ARTS:** Dance Studies, Design, Dramatic Arts, Music, Visual Arts
- **HSS:** Life Orientation
- **SCIENCES:** Computer Applications Technology, Information Technology
- **SERVICES:** Consumer Studies, Hospitality Studies, Tourism
- **TECHNOLOGY:** Civil Technology, Electrical Technology, Engineering Graphics and Design, **MECHANICAL TECHNOLOGY**

A PAT allows the educator to directly and systematically observe applied competence. The PAT comprises the application/performance of the knowledge, skills and values particular to that subject and counts 25% (i.e. 100 marks) of the total promotion/ certification mark out of 400 for the subject. In the two Arts subjects Design and Visual Arts, the PAT counts 37.5% (i.e. 150 marks) of the total promotion/ certification mark out of 400 for the subject.

The PAT is implemented across the first three terms of the school year and should be undertaken as one extended task, which is broken down into different phases or a series of smaller activities that make up the PAT. The planning and execution of the PAT differs from subject to subject.

Section A is guidelines to educators, **Section B** can be used as possible CASS practical tasks and **Section C** is the Practical Assessment Tasks with the different scenarios that should be given to learners at the beginning of 2008.

Any profession requires of its members a thorough grounding in both practice and theory, and **MECHANICAL TECHNOLOGY** is no exception. It is emphasized that the goal of the Performance Assessment task is not to produce a skilled craftsperson but a mechanical technology learner in the broadest sense. A nation's true wealth is in its manpower and education should aim to develop the talents of the learner so that he/she can contribute to the well-being of society by using scientific and technological resources with the greatest efficiency and by continuing to develop them.

To prepare a learner in **MECHANICAL TECHNOLOGY** for one or more of these activities his/her education should develop in him/her:

- A mentality which can selectively assimilate ideas, evidence and facts, and by drawing logical conclusions put them to good use creatively and with imagination;
- An capability to express ideas and information clearly by speech, writing, sketching or drawing;
- A willingness and capability to accept and exercise responsibility, to make decisions, and to learn by experience.

Attributes such as these cannot all be achieved in a classroom. A sound knowledge of engineering science is essential to the **MECHANICAL TECHNOLOGY** learner, so also is the close practical acquaintance with the processes. There is no substitute for acquiring the feel of things on the shop floor, where training in the art of making things, the essential bridge between theory and practice, can be so readily obtained.

Practical must therefore be made an interesting and challenging experience, mentally and physically, with encouragement to the learner to use his/her initiative, curiosity and persistence in finding things out for him/herself. Learning by watching should be kept to the minimum. The giving of some degree of responsibility during practical is very important as a stimulus and to develop self-confidence.

2. The structure of the PAT for Mechanical Technology

Practical Assessment Tasks are designed to develop and demonstrate a learner's capability to integrate a variety of skills in order to solve a problem. The PAT also makes use of the technological process outlined in LO2, to guide the learner which steps need to be followed to arrive at a solution for the problem at hand.

The PAT is based on simulations and investigations. The PAT is made up of an integration (or a combination) of two or more areas of specialization; i.e. motor mechanics, welding and metalwork, and fitting and machining.

OPTIONS

The Practical Assessment Task for 2010 consists of two scenarios. Only one of the two scenarios should be chosen by the LEARNER.

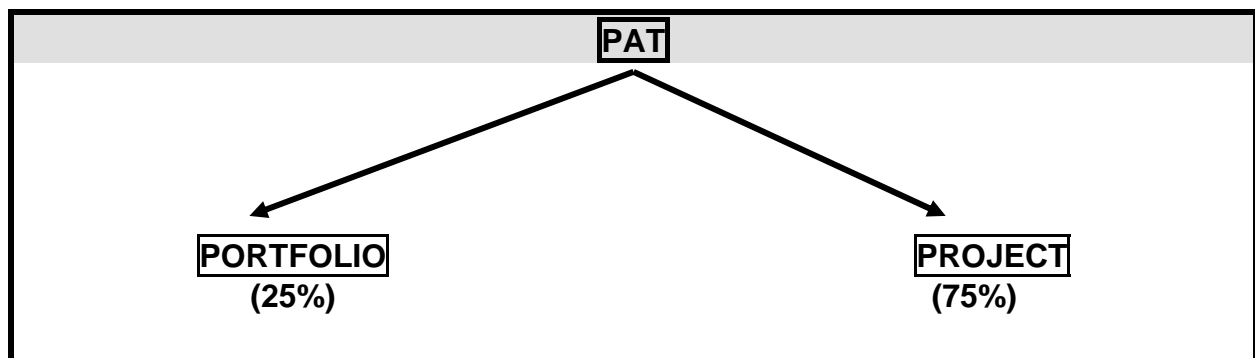


FIGURE 1: EXPLAINING THE PAT PROCESS

The design portfolio of the PAT should include evidence of how the development of the product or artefact was approached, that is:

- The planning process;
- The knowledge and skills accumulated in the process;
- The technological process followed;
- The safety and environmental aspects considered;
- The calculations used – if applicable, sketches or diagrams;
- The starting time and ending time – how long it took to complete from start to finish;
- The investigations undertaken;
- User manual of artefact;
- Bill of materials;
- List of tools needed; and
- Any other information that is relevant to the project.

As part of the design process learners must:

- Identify the problem and investigate means of solving the problem;
- Design possible solutions;
- Develop the preferred solution;
- Evaluate the solution;
- State the process followed in the project portfolio; and
- Construct the technological solution in the form of a product or artefact.

In 2010, two options are provided.

3. Administration of the PAT

Teachers can attach due dates for the different stages of the PAT. In this manner, learners can easily assess their progress. Instances where formal assessments take place, it is the responsibility of the teacher to administer assessment.

The PAT should be completed in the first three terms and handed in at the end of the third term. The PAT should be based on real life situations and completed under controlled conditions. (Refer to the SAG, Jan 2008).

Educators are requested to make copies of **Section B** and distribute to learners at the beginning of the year. Learners should receive the assessment criteria of the PAT at the beginning of the year when the PAT is handed out.

4. Assessment and moderation of the PAT

The Practical Assessment Task for Grade 12 is externally set and moderated, but internally assessed.

4.1 Assessment

Frequent developmental feedback is needed to guide and give support to the learner to ensure that the learner is on the right track.

Both formal and informal assessment should be conducted on the different tasks that constitute the PAT. Informal assessment can be conducted by the learner himself or herself, by a peer group, or by the teacher. Formal assessment should always be conducted by the teacher and will be recorded.

Learners submit the product or artefact for assessment by the end of the third term. The accompanying design portfolio must also be submitted for assessment at this time.

4.2 Moderation

During moderation of the PAT, the design portfolio and the artefact will be presented to the moderator.

Where required the moderator should be able to call on the learner to explain the function, principles of operation and also request the learner to exhibit the skills acquired through the capability tasks for moderation purposes. The sequence of events according to the technological process may also be requested from the learner.

SECTION B: THE PRACTICAL ASSESSMENT TASK

The Practical Assessment Task (PAT) consists of a practical task to be completed over three terms. The PAT consists of a design portfolio and a product/artefact and a practical skills assessment task. Learners are expected to **choose one** of the two scenarios to complete the Practical Assessment Task.

SCENARIO 1:

During travelling Jim experiences a problem with the small boot of his car when going on holiday (excess luggage) or transporting his bicycle. To address the problem he approached you to design a device to solve this problem. He is of the opinion that this device needs to have a utility application.

Specifications:

- Design should be compliant to SANS specifications.
- Be easily attached to the existing tow bar of the car without removing the goose neck
- Maximum load to be carried is 15 kilograms
- Easily operated and detachable
- Safe operation
- Cost effective – inexpensive in relation to current market related products
- Stored easily in small areas
- Device needs to allow the boot of the car to be opened and closed without removing the device

Rubrics on processes:

- Joining methods
 - Semi-permanent joining (Bolts & nuts)
 - Permanent joining (Welding)
- Manufacturing processes
 - Turning
 - Milling
- Manufacturing competency (Addressing the requirements)
- Fitness for purpose
- Finishing/Quality
- Time

SCENARIO 2:

Mr. Jones and his wife enjoy camping with their caravan. He has injured his leg and finds it difficult to carry water from the water source to the caravan.

Design a device to help Mr. Jones to transport the 20 liter water container.

Take into consideration that storage and weight in a caravan is of utmost importance.

Show evidence that you gathered information to assist you to design and make a device to address the problem of transporting the water container.

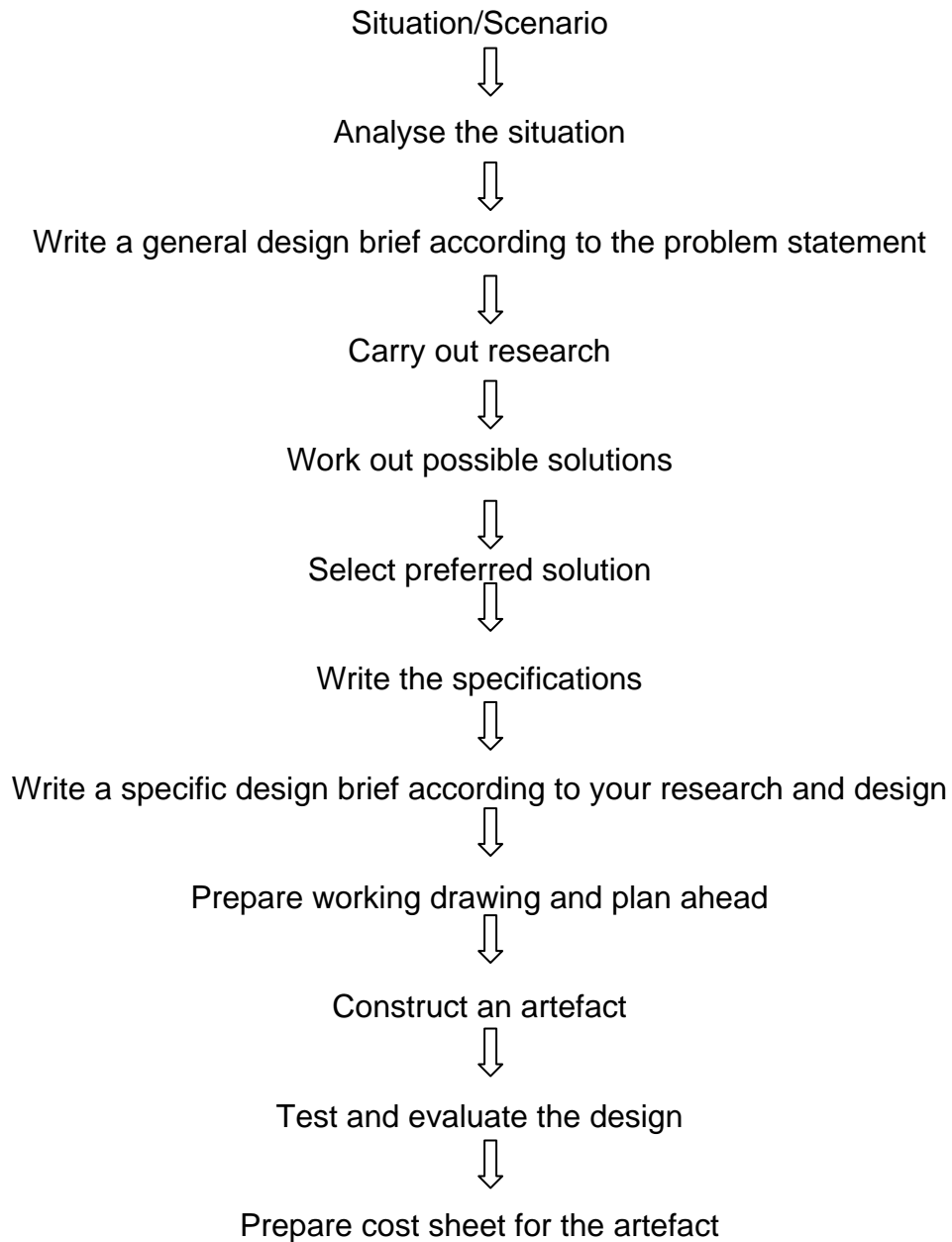
Specifications and constraints:

- A practical way to overcome the transport of the water as well as the storage of the transporting device, taking into account the following:
- The device must be:
 - Able to transport at least a 20 litre water container at a time
 - Should also be able to transport other articles around the caravan site
 - Easy to operate and safe (calculations on mechanical advantage)
 - Portable and easily stored in the caravan
 - Durable and cost effective
 - The device should have at least two wheels

Rubrics on processes:

- Joining methods
 - Semi-permanent joining (Bolts & nuts)
 - Permanent joining (Welding)
- Manufacturing processes
 - Turning
 - Milling
- Manufacturing competency (Addressing the requirements)
- Fitness for purpose
- Finishing/Quality
- Time

Provide evidence that you have gathered information to manufacture the device. The following flow chart may help you to complete the PAT and your PAT portfolio.



THE TECHNOLOGICAL PROCESS MUST BE EVIDENT**Specifications and constraints**

Cost factor must be taken into consideration. The product must be affordable. The weight of the artefact must also be taken into consideration. Use your knowledge of different metals to assist you to come up with the best possible solution.

Time planning:

- Phase 1: One month – middle February
- Phase 2: Complete at the end of first term - March
- Phase 3: Use term two and three to make the project/artefact
- Phase 4: Use last month of third term to evaluate project/artefact - September
- Phase 5: Use last month of third term to communicate regarding the specifications of the project/artefact - September

1. Design brief, and artefact

The design brief should be clearly written. Design the artefact so that it could easily be stored. The artefact must be manufactured to full scale. The product must be neat and absolutely functional.

2. The Design Portfolio (The documentation you will compile)

The portfolio must contain the following:

- Drawings of the artefact
- Pictures of the artefact
- Description of its operation
- The original design and all the changes you made to it
- The portfolio must contain a list of the tools used to build it.
- The portfolio must contain a parts list of the artefact.
- The design portfolio must **not be less than four pages and not more than eight pages**.

The following criteria can be considered additional:

The portfolio must include a marketing strategy which shows:

- A retail price at which the unit could be sold to the public. (Show your percentage profit margin.)
- An advertisement of the device which could be published in the local community newspaper. (Not smaller than 15 cm x 15 cm)

List who you think might buy a device like this. (Target market)

3. Completing the PAT

In completing the PAT you will have to go through a number of phases.

3.1 Phase 1 - Problem Statement (Identify/Investigate)

The Scenario is given to you. You must respond by writing a design brief.

Design Brief	<p>Identify the problem you are being faced with. What is it that is being asked of you?</p> <p>Write down in your own words what the problem is:</p> <hr/> <hr/> <hr/> <hr/> <hr/>
Solution Statement	<p>List not fewer than THREE possible solutions you might consider to solve the problem that you have been tasked to solve:</p> <hr/> <hr/> <hr/> <hr/> <hr/>

3.2 Phase 2 – The Design (acquisition of information and skills)

3.2.1 Research Task

- Find information on each of the possible solutions you have listed.
- Compile a criteria list to assist you in choosing the best solution. The list must contain all the requirements that must be met and you are allowed to add your own criteria as well.
- Using your criteria, judge the possible solutions above and eliminate all but one.
- Motivate why you have decided on the chosen solution.
- Plan how long it will take you to complete the project. Set short-term and long-term goals and also set dates by when you plan to reach each phase.
- Place all your research in the Design Portfolio under the heading **Research Task**.

3.2.2 Design Portfolio

- A neatly drawn diagram of the artefact.
- List your tools required
- Compile a components list with cost and specifications.
- Choose a possible name or names for your device.
- Design a logo for the device.
- Compile all your designed material and place it in the design portfolio under **Capability Task**.
- Prepare the production procedure and place it in the design portfolio under **Capability Task**.

3.3 Phase 3 – The Make (Production and evaluation)

On completion of your design and drawings, proceed to the production of the artefact. Consider the following points:

Manufacturing / Modification of the artefact:

- Take care that you follow the initial design you made for the artefact.
- Should you need to adapt your design at this phase, capture your design changes in a drawing and add that to the initial design? This happens a great deal in industry and is normal.
- Motivate why you changed your initial design.

Assessment Criteria

The following assessment tools must be used to assess the PAT:

- The rubric displayed in Annexure A is for assessing the **design portfolio and process**. This mark will contribute **25 %** to the final PAT mark.
- The rubric displayed in Annexure B is for assessing the final product/artefact. The following should be assessed: **safety use of tools; correctness of the product/artefact; planning, surface finish and modeling of the product/artefact**. This mark will contribute **75 %** to the final PAT mark.

3.4 Phase 4 - Evaluation

Upon completion of the artefact, finalize the Design Portfolio for assessment.

Evaluate and test the product to establish if it satisfies the design brief and suggesting improvements.

3.5 Phase 5 - Communication:

Choosing and using appropriate technologies such as computers, photocopiers, stencils and audio-visual recordings to combine graphics and text to record and communicate the problem solving process.

SUMMARY

- **The Learner Task**
- **Declaration of Authenticity by the Learner**
- **Summarising Record Sheet**
- **Research:**
 - Listed information
 - Criteria list
 - Possible solutions
 - Chosen solution
 - Planning and goal setting
- **Design and manufacturing:**
 - Enclosed design
 - Tools list
 - Components list with cost and specifications
 - Artefact design
 - Name and logo of the device
 - Production procedure
 - Evidence of prototyping
 - Tabulated Prototyping findings
- **Evaluation and communication**

The artefact needs to remain with the design portfolio.



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NATIONAL CURRICULUM STATEMENT

MECHANICAL TECHNOLOGY

PRACTICAL ASSESSMENT TASK (PAT)

GRADE 12

ASSESSMENT TOOLS

2010

ANNEXURE A: RUBRIC FOR ASSESSMENT OF DESIGN PORTFOLIO

CRITERIA	7	6	5	4	3	2	1	MARK
	80 –100%	70 - 79%	60 - 69%	50 - 59%	40 - 49%	30 - 39%	0 - 29%	
10	8-10	7-8	6-7	5-6	4-5	3-4	1-3	
20	16-20	14-16	12-14	10-12	8-10	6-8	1-6	
30	24-30	21-24	18-21	15-18	12-15	9-12	1-9	
40	32-40	28-32	24-28	20-24	16-20	12-16	1-12	
Presentation	Exceeded the required information, extremely neat: Name Register class Year 20... Appropriate cover illustration Appropriate title Index All sections Page numbers	Required information extremely neat: Name Register class Year 20... Appropriate cover illustration Appropriate title Index All sections Page numbers	Adequate information from list below, neatly presented: Name Register class, Year 20. Appropriate cover illustration Appropriate title Index All sections Page numbers	Necessary information from list below, neatly presented: Name Register class Year 20... Appropriate cover illustration Appropriate title Index All sections Page numbers	Limited information from list below, neatly presented: Name Register class Year 20... Appropriate cover illustration Appropriate title Index All sections Page numbers	Lack of essential information, not very neatly presented	Only name and register class untidily presented	20
Development of a design brief	The design brief is extremely well formulated and defines the need or opportunity. It lists detailed specifications and constraints.	The design brief is very well constructed and defines the need or opportunity. It lists detailed specifications and constraints.	The design brief is well constructed and defines the need or opportunity. It lists detailed specifications and constraints.	The design brief defines the need or opportunity and provides a list of specifications and constraints.	The design brief defines the needs or opportunity and provides limited specifications.	The simple design brief makes little reference to the need or problem.	The design brief is vague and lists no specifications or constraints.	20
Investigation and analyses information	Shows evidence of a variety of strategies *(6) of investigation used to obtain all relevant information to assist in developing innovative design ideas.	Uses a wide range*(5) of appropriate information sources to develop innovative design options.	Uses of a range of information sources*(4) which shows understanding for the problem or need.	Uses adequate sources *(3) to collect relevant information to assist with design ideas.	Uses relevant research *(2) to address the problem or need identified in the design brief.	Uses less than adequate sources* (1) and collects less than adequate information.	Collects very little relevant information *(0).	20

CRITERIA	7	6	5	4	3	2	1	MARK
	80 –100%	70 - 79%	60 - 69%	50 - 59%	40 - 49%	30 - 39%	0 - 29%	
10	8-10	7-8	6-7	5-6	4-5	3-4	1-3	
20	16-20	14-16	12-14	10-12	8-10	6-8	1-6	
30	24-30	21-24	18-21	15-18	12-15	9-12	1-9	
40	32-40	28-32	24-28	20-24	16-20	12-16	1-12	
Generation of design ideas	Generates an excellent variety of alternative and innovative ideas with different approaches to address the problem or need. Justifies the preferred option with clear links to the design brief.	Shows evidence of a wide range of communication methods used to develop original and creative design options. Substantiates well choice of final design.	Shows evidence of a range of communication methods used to develop original and creative design options including modelling design ideas. Explains well reasoned choice of final design.	Uses a good variety of alternatives exploring different approaches. Well reasoned choice of final design.	Considers alternatives but lacks in originality and flair. Indicates final design choice.	Offers some alternatives but tends to be a collection of existing products with limited reasoning of choice. Shows limited links with research done.	Shows little or no exploration of alternatives.	20
Communication of ideas	Develops a very interesting solution and communicates it exceptionally well using appropriate techniques and methods. Uses modelling ideas to test and explore design thinking.	Develops a very interesting solution and communicated it very well using appropriate techniques and methods.	Develops an interesting solution and effectively communicates it effectively using appropriate techniques.	Reasons well for choice of solution. Uses good overall communication techniques.	The solution lacks creativity with limited communication techniques used.	The solution lacks creativity with inappropriate communication techniques used.	The solution lacks detail, making interpretation difficult. Scant attention is given to communication techniques.	10
Evaluation of product or artefact	Comprehensively evaluates the product against the design brief taking account of the user and cost-effectiveness. Evaluates procedures, techniques and processes and indicates possible improvements. Evaluates the appropriateness of the materials used.	Evaluates the product against the design brief taking account of the user and cost-effectiveness. Evaluates procedures, techniques and processes and indicates possible improvements. Evaluates the appropriateness of the materials used.	Evaluates the product against the design brief. Present suggestions to improve on function. Evaluates the appropriateness of the materials used with limited suggestions for improvement.	Evaluates the product against the design brief. Evaluates the appropriateness of the materials used.	Superficially evaluates the product against the design brief. Makes recommendations to improve its functionality.	Very superficially evaluates with limited recommendations.	Shows little or no evidence of an evaluation of the project.	10

KRITERIA	7	6	5	4	3	2	1	PUNT
	80–100%	70–79%	60–69%	50–59%	40–49%	30–39%	0–29%	
10	8-10	7-8	6-7	5-6	4-5	3-4	1-3	
20	16-20	14-16	12-14	10-12	8-10	6-8	1-6	
30	24-30	21-24	18-21	15-18	12-15	9-12	1-9	
40	32-40	28-32	24-28	20-24	16-20	12-16	1-12	
Genereer ontwerpidees	Genereer 'n uiters wye verskeidenheid alternatiewe en innoverende idees met verskillende benaderinge om die probleem of behoefte op te los. Motiveer die gekose opsie met duidelike skakels na die ontwerpdrag.	Toon bewys dat 'n wye verskeidenheid kommunikasie-metodes gebruik is om oorspronklike en kreatiewe ontwerpopsies te ontwikkel. Die keuse vir die finale ontwerp word goed	Toon bewys dat 'n wye verskeidenheid kommunikasie-metodes gebruik is om oorspronklike en kreatiewe ontwerpopsies te ontwikkel, modellering-	Gebruik 'n goeie verskeidenheid alternatiewe waar verskillende benaderinge ondersoek word. 'n Goeie keuse vir die finale ontwerp is	Oorweeg alternatiewe, maar kort oorspronklikheid. Toon wel die keuse vir die finale ontwerp.	Bied 'n paar alternatiewe hoewel dit eintlik 'n versameling van bestaande produkte is met beperkte motivering. Toon beperkte skakels met die	Toon min of geen ondersoek na alternatiewe.	20
Dra idees aan ander oor	Ontwikkel 'n uiters interessante oplossing en dra dit uiters goed oor deur geskikte tegnieke en metodes te gebruik. Gebruik modelleringidees om denke oor die ontwerp te toets en te ondersoek.	Ontwikkel 'n baie interessante oplossing en dra dit baie goed oor deur geskikte tegnieke en metodes te gebruik.	Ontwikkel 'n interessante oplossing en dra dit doeltreffend oor deur geskikte tegnieke doeltreffend te gebruik.	Motiveer die keuse van oplossing goed. Gebruik oor die algemeen goeie kommunikasie-tegnieke.	Die oplossing kort kreatiwiteit en beperkte kommunikasie-tegnieke is gebruik.	Die oplossing kort kreatiwiteit en ongeskikte kommunikasie-tegnieke is gebruik.	Die oplossing kort besonderhede wat die interpretasie bemoelijk. Daar is skaars aandag gegee aan kommunikasie-tegnieke.	10

ANNEXURE B: RUBRIC FOR ASSESSMENT OF FINAL PRODUCT/ ARTEFACT

CRITERIA	7	6	5	4	3	2	1	MARK
	80 -100%	70 - 79%	60 - 69%	50 - 59%	40 - 49%	30 - 39%	0 - 29%	
10	8-10	7-8	6-7	5-6	4-5	3-4	1-3	
20	16-20	14-16	12-14	10-12	8-10	6-8	1-6	
30	24-30	21-24	18-21	15-18	12-15	9-12	1-9	
40	32-40	28-32	24-28	20-24	16-20	12-16	1-12	
FITNESS FOR PURPOSE	This product has an outstanding level of functionality. It shows a very high level of innovation that is appropriate to the design brief.	The product demonstrates a high level of functionality. It shows a high level of innovation that is appropriate to the design brief.	The product fulfills adequately the purpose for which it was designed. It shows some innovation that is appropriate to the design brief.	The product fulfills satisfactorily the purpose for which it was designed. It shows limited innovation for the identified need/problem.	The product fulfills its functional requirements. No evidence of innovation in the solution to the identified need/problem.	The product barely fulfills functional requirements but lacks any refinement/innovation.	The project is incomplete and does not fulfil the identified need/problem.	20
MANUFACTURING COMPETENCY	Demonstration of an outstanding level of skill/competence in the correct and safe use of a wide range of materials, tools, equipment and machines under educator supervision.	Demonstrates a very high level of skill/competence in the correct and safe use of a wide range of materials, tools, equipment and machines under educator supervision.	Demonstrates a high level of skill/competence in the correct and safe use of a range of materials, tools, equipment and machines under educator supervision.	Demonstrates a satisfactory level of skill/competence in the correct and safe use of appropriate materials, tools, equipment and machines under educator supervision.	Demonstrates an acceptable level of skill/competence in the correct and safe use of appropriate materials, tools, equipment and machines under educator supervision.	Demonstrates some regard for accuracy and safety in the use of materials, tools, equipment and machines under educator supervision.	Demonstrates a lack of skill/competence in the use of appropriate materials, tools, equipment and machines under educator supervision. Pays little attention to safety.	40

CRITERIA	7	6	5	4	3	2	1	MARK
	80 -100%	70 - 79%	60 - 69%	50 - 59%	40 - 49%	30 - 39%	0 - 29%	
10	8-10	7-8	6-7	5-6	4-5	3-4	1-3	
20	16-20	14-16	12-14	10-12	8-10	6-8	1-6	
30	24-30	21-24	18-21	15-18	12-15	9-12	1-9	
40	32-40	28-32	24-28	20-24	16-20	12-16	1-12	
PLANNING	Demonstrates continual review of the making process. Shows outstanding capability to adapt and modify the design when difficulties arise. Adopts procedures to minimise waste, manages time outstandingly well.	Reviews design during the making process, demonstrates resourcefulness and adapt capability in making modifications to ensure a high quality product. Excellent waste and time management.	Shows capability to adapt and modify the design when difficulties arise. Adequate planning to minimise waste, manages time well.	Apply knowledge of materials and processes to overcome problems in making when these arise. Demonstrates a good sense of material and time management.	Shows evidence of adopting alternative ways of proceeding when difficulty is experienced. Seeks assistance from educator to proceed. . Demonstrates some sense of material and time management.	Shows little evidence of alternative ways of proceeding when difficulty is experienced. Does not seek assistance from educator and to proceeds regardless of time and material management.	No attempt made to overcome making problems. No proper planning evident resulting in any regard for time and material management.	20
SURFACE FINISHING	An outstanding degree of skill in the surface finishing is demonstrated. The surface finish is of an exceptional quality.	A very high degree of skill in the surface finishing is demonstrated. The surface finish is blemish free.	A high degree of skill in the surface finishing is demonstrated.	A satisfactory level of skill in the surface finish is demonstrated but with some blemishes evident.	A low level of skill in the surface finishing is demonstrated. Blemishes are evident.	A very low level of skill in the surface finishing is demonstrated.	No surface finish evident.	10
MODELLING THE PRODUCT	Exceptionally modelled to illustrate, realistically, function for which it was developed	Specialist modelling techniques used to demonstrate, realistically, the function for which it was developed.	Product is effectively modelled to illustrate the function for which it was developed.	Product is adequately modelled to illustrate the function for which it was developed.	Product is modelled to illustrate the function for which it was developed.	Product barely illustrates the function for which it was developed.	No clarity as to how the product is to function.	10

ANNEXURE C

DECLARATION OF AUTHENTICITY

NAME OF THE SCHOOL:

NAME OF LEARNER:

(FULL NAME(S) AND SURNAME)

EXAMINATION NUMBER:

NAME OF TEACHER:



I hereby declare that the project submitted for assessment is my own, original work and has not been previously submitted for moderation.

SIGNATURE OF CANDIDATE

DATE

As far as I know, the above declaration by the candidate is true and I accept that the work offered is his or her own.

SIGNATURE OF TEACHER

DATE

ANNEXURE D: MARK SHEET - PORTFOLIO

GRAAD/GRADE:		JAAR/YEAR:		SKOOL/SCHOOL:																
DATUM BEGIN/DATE STARTED:				DATUM VOLTOOI/DATE COMPLETED:																
VAK/SUBJECT: MECHANICAL TECHNOLOGY / MEGANIESE TEGNOLOGIE				ONDERWYSER/EDUCATOR:																
				GETAL LEERDERS/NUMBER OF LEARNERS:																
		NAME VAN LEERDERS/NAMES OF LEARNERS																		
FASETTE/FACETS		PUNTE/ MARKS																		
PORTFOLIO			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
Presentation	20																			
Design brief	20																			
Investigation	20																			
Design ideas	20																			
Evaluation of product	10																			
Communication	10																			
TYD/TIME																				
TOTAAL/TOTAL	100																			
÷ 4	25																			
HANDTEKENING VAN ONDERWYSER/SIGNATURE OF EDUCATOR:																				
HANDTEKENING VAN DEPT. HOOF/SIGNATURE OF HEAD OF DEPARTMENT:																				
HANDTEKENING VAN HOOF/SIGNATURE OF PRINCIPAL:																				
HANDTEKENING VAN VAKADVISEUR/SIGNATURE OF SUBJECT ADVISOR:																				

ANNEXURE E: MARK SHEET - PRODUCT

GRAAD/GRADE:		JAAR/YEAR:		SKOOL/SCHOOL:															
DATUM BEGIN/DATE STARTED:				DATUM VOLTOOI/DATE COMPLETED:															
VAK/SUBJECT: MECHANICAL TECHNOLOGY / MEGANIESE TEGNOLOGIE				ONDERWYSER/EDUCATOR:															
				GETAL LEERDERS/NUMBER OF LEARNERS:															
		NAME VAN LEERDERS/NAMES OF LEARNERS																	
FASSETTE/FACETS	PUNTE/ MARKS																		
PRODUCT		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
Fitness for purpose	20																		
Manufacturing competency	40																		
Planning	20																		
Surface finishing	10																		
Modelling of the product	10																		
TYD/TIME																			
TOTAAL/TOTAL	100																		
÷ 4 x 3	75																		
HANDTEKENING VAN ONDERWYSER/SIGNATURE OF EDUCATOR:																			
HANDTEKENING VAN DEPT. HOOF/SIGNATURE OF HEAD OF DEPARTMENT:																			
HANDTEKENING VAN HOOF/SIGNATURE OF PRINCIPAL:																			
HANDTEKENING VAN VAKADVISEUR/SIGNATURE OF SUBJECT ADVISOR:																			