



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

CIVIL TECHNOLOGY

GUIDELINES FOR PRACTICAL ASSESSMENT TASK

2010

These guidelines consist 26 pages.

TABLE OF CONTENTS

This document consists of five sections:

1.	GUIDELINES FOR THE TEACHER	3
2.	INSTRUCTIONS FOR THE LEARNER.....	9
3.	ASSESSMENT TOOLS.....	16
	RUBRIC FOR ASSESSMENT OF THE DESIGN PORTFOLIO...	17
	MARKING MEMORANDUM FOR THE (a) FLY-OVER.....	19
	(b) PAVILION.....	20
	(c) HOUSE ON SLOPE..	21
	RUBRIC FOR ASSESSMENT OF THE FINAL PRODUCT/MODEL..	22
4.	DECLARATION OF AUTHENTICITY.....	23
5.	EXAMPLES OF MARKSHEETS FOR THE PAT.....	25

1. GUIDELINES FOR THE TEACHER

1.1 The structure of the PAT for Civil Technology

Practical Assessment Tasks are designed to develop and demonstrate a learner's ability to integrate a variety of skills in order to solve a problem. The PAT also makes use of the technological process outlined in Learning Outcome 2, to guide the learner on which steps need to be followed to arrive at a solution for the problem at hand.

The PAT is based on investigations, simulations and the application of skills, knowledge and principles acquired by the learners that will cover the technological process in the building environment.

The Practical Assessment Task consists of two components: the design portfolio which makes up 25% of the PAT and the product or model which makes up 75% of the PAT.

1.2 The Design Portfolio

The design portfolio of the PAT should include evidence of how the development of the product or model was approached, namely:

- 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 diagram
- The starting time and ending time – how long it took to complete from start to finish
- The investigations undertaken
- User manual of model or product (if applicable)
- Bill of materials
- List of tools and equipment 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
- Generate possible solutions
- Develop the preferred solution
- Evaluate the chosen solution
- State the process followed in the development of the PAT
- Construct the solution to the problem in the form of a product or model

1.2.1 Structure of the Design Portfolio

The Design Portfolio consists of a collection of evidence, which shows the progression throughout the PAT, and contains all the documentation produced during the development of the artefact.

The Design Portfolio is divided into phases, which follow the technological process as specified in Learning Outcome 2.

A. Phase 1 – The Problem Statement

- **Scenario** (First Term)
 - i. During this phase the learner is presented with the problem statement.
 - ii. The learner identifies the problem(s) or challenges and lists possible solutions to the problem.
- **Design Brief** (First Term)
 - i. The learner is **supplied with the criteria** of the PAT, including items such as cost limitations, design requirements and other criteria relevant to the problem statement.
 - ii. The learner draws up his/her planning structure (management plan/plan of action) for the development of the PAT following the criteria given.

B. Phase 2 – The Design

- **Acquisition of information and skills** (First and Second Term)
 - i. The learner needs to **conduct a short investigation** on **each** of the possible solutions he/she has listed, and this is placed in the portfolio. The teacher can provide learners with possible sources of information and as far as possible make the same resources available to all learners.
 - ii. The learner **compares the investigation** conducted and from this makes a critical decision on which solution will best solve the problem.
 - iii. The learner **motivates in a short description** why the design/solution chosen is the best in his/her opinion.
 - iv. All the research is retained in the portfolio.
 - v. Teachers need to ensure that learners do not select a solution that would pose a challenge **beyond** that of a Grade 12 Learner in the NCS.

- vi. Upon deciding the best possible solution, the learner needs to refine the research done and now prepare a final design. This should include the following:
 1. The planning process
 2. The knowledge and skills accumulated in the process
 3. The technological process followed
 4. The safety and environmental aspects considered
 5. The calculations used – if applicable, sketches or diagrams
 6. The starting time and ending time – how long it took to complete from start to finish
 7. The investigations or research undertaken
 8. Any other information that is relevant to the project
- vii. The learner must **list the materials and tools** needed for the completion of the PAT (as if in a real-life situation). Again it is emphasized that the teacher must **guide** and ensure that learners do not embark on a process that is not viable on a Grade 12-level.

C. Phase 3 – The Make and Evaluation

- i. During this phase the teacher will supply learners with scenarios and ability tasks that will give learners the opportunity to gain the skills needed for the completion of the PAT. These Scenarios and ability tasks will include:
 1. Scenarios on: Topics relevant to the specific scenarios as given in the 2010 PAT.
 2. Ability tasks such as simulations, drawing skill exercises, correct use of tools and instruments relevant to the PAT.
 - ii. The skills of learners are paramount to the completion of a PAT and it is imperative that learners have MULTIPLE opportunities from the first week of school at the beginning of the year, thus enabling learners to exhibit the maximum skills levels possible for a Grade 12 Learner.
 - iii. Teachers will assess only the Ability tasks, which are chosen for formal assessment purposes. Self, group and peer assessment will form the basis of the developmental assessment.
- **Production and Self Evaluation** (Second and Third term)
 - i. The learner now **simulates the final design** and effects any changes that are necessary. These changes are recorded and included in the design portfolio. Learners may use electronic equipment where available, e.g. cellphone cameras, digital cameras, etc. to document their progress.
 - ii. Finally the learner **manufactures and assembles** all the needed parts of the artefact. Learners are allowed to make use of recycled materials, which can be revamped and re-fitted for the purpose of the PAT.

- iii. It should be noted that learners might have to make use of extra-curricular time in the Civil Technology workshop for the hand skills needed to manufacture the artefact, although this should still be done under supervision of the teacher.

IMPORTANT NOTE

- iv. The PAT should commence from the first term, as this is a lengthy and drawn out process and **CANNOT** be left to the last minute.

- **Presentation**

- i. All the components of the PAT (design portfolio, building plans and model) should be completed and presented for assessment by the time the preparatory exam starts at the end of the third term to allow sufficient time for the external moderation.
- ii. At this phase the teacher will do any final assessments, which are outstanding, and all learner portfolios and models are kept safely until the moderation process is completed (both Provincial and National moderation).
- iii. It is imperative that the criteria are adhered to from the beginning, as this will form the basis for assessment.
- iv. Teachers cannot penalize learners on points, which are not included in the initial criteria.
- v. Upon selection, learners may be required to showcase skills and knowledge during moderation (face moderation).

The communication of the design is a continuous process and the learner will continuously make changes to this part of the portfolio as the PAT progresses.

Table 1 on page 9 can be used as checklist of the stages that should be followed for the development of the PAT. This table also gives a guideline in terms of which tasks could be formally assessed and which ones could be informally assessed, and the possible assessment tool(s) for the different tasks.

Every teacher must design a pacesetter to indicate the completion dates for the different stages of the PAT, and manage this process in order to avoid crisis management and unnecessary stress nearer to the completion date of the PAT.

The submission dates for the different parts of the PAT as indicated in the pacesetter should be given to learners in writing.

1.3 Administration of the PAT for Civil Technology

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

Teachers must set dates for the different phases of the PAT in Table 1 on page 9. In this manner learners can assess their progress. Instances where formal assessment tasks take place, it is the responsibility of the teacher to administer assessment tasks.

After studying the section on guidelines to the teacher, teachers must explain in full the requirements of the different stages of the PAT as well as the criteria as indicated in the rubrics and mark schedules. This will ensure that learners and teachers have a common understanding of the assessment tools and what is expected of the learners.

Teachers are requested to make copies of Section 2 (Instructions for the learner) and give it to the learners at the beginning of the year. Learners should receive the assessment criteria of the PAT when the PAT is handed out.

The PAT should not leave the classroom/workshop and must be kept in a safe place at all times when learners are not working on it.

1.4 Assessment and moderation of the PAT

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

1.4.1 Assessment

Frequent developmental feedback is needed to guide and give support to the learner in ensuring 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 model for assessment by the end of the third term, before the commencement of the preparatory examination. The design portfolio must accompany the model or product.

The teacher must take into account the requirements of the assessment of all the components of the PAT and therefore plan the assessment programme for the PAT accordingly.

1.4.2 Moderation

During moderation of the PAT the design portfolio and the model 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.

SCENARIO 1 FOR CIVIL TECHNOLOGY

Due to accidents that take place around your area when people cross the freeway, a flyover walkway crossing is needed to provide a safe way of crossing for pedestrians.

The terrain surrounding the road is level.

As a Grade 12 Civil Technology learner, you are tasked by your community to solve the problem. Design a walkway to provide access between the two settlements on either side of the road.

1. SPECIFICATIONS

- 1.1 The walkway crossing must be supported by means of reinforced concrete columns.
- 1.2 Consider safety in the design.
- 1.3 There will be a constant flow of pedestrians using the bridge.
- 1.4 The distance across the freeway is 25 metres.
- 1.5 The maximum pedestrian mass that the bridge must be able to carry is 20 000kg

2. INSTRUCTIONS

Freehand sketches of the designs and all other information listed in (1 & 2) are part of the design portfolio and shall be assessed as that.

The final scale drawings of the Top view, elevations, section, and formwork shall be assessed under the final product or model. The drawings will make up 25 of the 75 marks while the model or project will make up 50 of the 75 marks.

- 2.1 Use the technological process to design the solution and compile a design portfolio.
- 2.2 Do an investigation on the suitable means of access between the two points also taking into consideration people with disabilities.
- 2.3 Draw different freehand sketches of the draft design showing progress in the design.
- 2.4 Produce scale drawings showing the following:
 - Top view of the walkway
 - Two elevations of the flyover crossing. (One elevation of the front view and one of the side view)
 - A vertical cross section through the walkway, showing the reinforcement and formwork used.
 - A sectional view of the formwork used for one of the supporting columns.
- 2.5 Make a scale model of the flyover walkway according to the design specifications. Show a part of the formwork in place for the walkway as part of the scale model.

NOTE: See the attached table (**TABLE 2 page 15**) that indicates the steps that you should follow when you develop your PAT.

SCENARIO 20 FOR CIVIL TECHNOLOGY

During 2010, South Africa will be hosting the Soccer World Cup. Participating countries will be hosted all over our country. In your neighbourhood one of these countries might need to practice on the local school grounds. The team also needs to use the change rooms and toilet facilities before and after practice.

Most schools do not have a pavilion where spectators can watch the team's practice. Money has been made available for the building of these pavilions. As a Grade 12 Civil Technology learner you are requested to design a pavilion that will meet the requirements as indicated below.

Choose any one of the three options below in which you can develop your PAT.

1. OPTIONS

- 1.1 Rural (No municipal electrical or water supply available)
- 1.2 Townships
- 1.3 Suburban

2. SPECIFICATIONS

- 2.1 The pavilion must seat 1 500 spectators. (Each level should not exceed 300 spectators)
- 2.2 The run out to the fields, from the cloakrooms, must be in front and in the centre of the pavilion.
- 2.3 An appropriate roof must be erected as part of the pavilion.
- 2.4 All drainage should comply with building specifications.
- 2.5 Two separate change rooms.
- 2.6 Change rooms must have showering cubicles and toilets.
- 2.7 There must be public toilets for spectators.
- 2.8 All applicable safety regulations must be adhered to.
- 2.9 All materials used should be environmentally friendly (Greenhouse effect) where possible.

3. INSTRUCTIONS

Freehand sketches of the designs and all other information listed in 2 and 3 are part of the design portfolio and shall be assessed as that.

The final scale drawings of the floor plan (Including the drainage plan), two elevations, sectional view and site plan shall be assessed under the final product or model. The drawings will make up 25 of the 75 marks while the model or project will make up 50 of the 75 marks.

- 3.1 Use the technological process to design the solution and compile a design portfolio.
- 3.2 Do an investigation on suitable options for a pavilion, also taking into consideration people with disabilities.
- 3.3 Draw different freehand sketches of the draft design showing progress in the design.
- 3.4 Produce scale drawings showing the following:
 - The site plan (Indicate the building boundaries and restrictions on the site plans)
 - The floor plan (Layout drawing) to show the ablution facilities, change rooms, seating arrangements and the drainage plan.
 - Two different elevations of the building.
 - A vertical section through the pavilion.
- 3.5 Make a scale model of the pavilion according to the design specifications.
- 3.6 Make a separate scale model to illustrate how the roof covering will be fixed to the roof structure.

Use the correct colour coding on all drawings as required by the South African National standards.

NOTE: See the attached table **(TABLE 2 page 15)** that indicates the steps that you should follow when you develop your PAT.

SCENARIO 3 FOR CIVIL TECHNOLOGY

Your parents have bought a plot of land that is situated above road level on a slope. Sloping areas can create problems when building houses. The land situated at the back will be at a higher level and sliding of soil can occur. As a Civil Technology learner you are requested by your parents to design a house to be erected on the plot.

Due to high excavation costs in levelling the surface the house must be built on the slope.

Determine the needs and preferences in relation to the type of house that your parents would want to build. The house has to be a single storey house not bigger than 140 m².

Choose any one of the three options below in which you can develop your PAT.

1. OPTIONS

- 1.1 Rural (No municipal electrical or water supply available)
- 1.2 Township
- 1.3 Suburban

2. SPECIFICATIONS

- 2.1 The house must not exceed 140 m².
- 2.2 Appropriate foundation should be according to building regulations.
- 2.3 Due to the high cost involved in excavations, a stepped foundation or piled foundation is recommended.
- 2.4 A retaining wall is needed behind the house to prevent soil erosion.
- 2.5 Describe the soil type and possible challenges that it may present in the construction process of the building.
- 2.6 All materials used should be environmentally friendly (Greenhouse effect) where possible.

3. INSTRUCTIONS

Freehand sketches of the designs and all other information listed in 2 and 3 are part of the design portfolio and shall be assessed as that.

The final scale drawings of the floor plan (Including the drainage plan), elevations, section and site plan shall be assessed under the final product or model. The drawings will make up 25 of the 75 marks while the model or project will make up 50 of the 75 marks.

- 3.1 Use the technological process to design the solution and compile a design portfolio.
- 3.2 Do an investigation on suitable options for the house, also taking into consideration people with disabilities.
- 3.3 Draw different freehand sketches of the draft design showing progress in the design.
- 3.4 Produce scale drawings showing the following:
 - The site plan (Indicate the building boundaries and restrictions on the site plans)
 - The floor plan (Layout drawing) including the drainage plan.
 - Two different elevations of the building (Clearly show a 30° slope of the natural ground level).
 - A vertical section through the building showing part of the foundation used.
- 3.5 Make a scale model of the house according to the design specifications.
- 3.6 Make a separate scale model to illustrate the foundation used for the structure e.g. stepped or piled foundation.

Use the correct colour coding on all drawings as required by the South African National standards

NOTE: See the attached table (**TABLE 2 page 15**) that indicates the steps that you should follow when you develop your PAT.

TABLE 2

The following steps should be followed in developing your PAT:

Steps	Information needed:	Examples of Resources:	Time frames
Step 1: ➤ Do research ➤ Compile research report	<ul style="list-style-type: none"> ✓ Building regulations ✓ Building specifications ✓ Materials ✓ Construction processes ✓ Roof construction (where applicable) ✓ Civil services 	<ul style="list-style-type: none"> ✓ Textbooks ✓ Internet ✓ Magazines ✓ Site visits ✓ Interviews 	4 weeks
Step 2: ➤ Design sketches ➤ Freehand drawings	<ul style="list-style-type: none"> ✓ Floor plan/ Top view ✓ 1st floor plan where applicable ✓ Elevations ✓ Hand rails at stairs are a requirement, not an option (if applicable) 		1 week
Step 3: ➤ Working drawings	<ul style="list-style-type: none"> ✓ Floor plan/ Top view ✓ Sectional view to show the relevant detail where applicable ✓ Elevations (N, E, S, W) or top, front and left view. ✓ Drainage where applicable ✓ Electrical system and layout where applicable 	NOTE: <ul style="list-style-type: none"> ✓ Use scales according to SANS code 0143 ✓ Indicate all relevant notes on construction, materials, finishing, sizes, window codes, etc. 	3 weeks
Step 4: ➤ Quantities and cost of materials for specific option:	<ul style="list-style-type: none"> ✓ Suitable information on material to cater for your design 		2 weeks
Step 5: ➤ Scale model	The model should include the following: <ul style="list-style-type: none"> ✓ Windows and doors ✓ Indoor layout ✓ Roof ✓ Specific requirements of your option 	NOTE: <ul style="list-style-type: none"> ✓ Any available material can be used ✓ The model should be according to the working drawings ✓ An appropriate scale should be used. ✓ The model may be proportionally larger than the scale drawing. 	10 weeks



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL CURRICULUM STATEMENT

CIVIL TECHNOLOGY

PRACTICAL ASSESSMENT TASK (PAT)

GRADE 12

2010

Assessment Tools

3. ASSESSMENT TOOLS

The assessment tool(s) below will be used to assess the different sections of your PAT. Use these to assist you in making your product or model.

3.1 Rubric for assessment of the design portfolio

CRITERIA	7	6	5	4	3	2	1
	80 –100%	70 - 79%	60 - 69%	50 - 59%	40 - 49%	30 - 39%	0 - 29%
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
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 need 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.
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 a range of information sources*(4) which shows understanding of 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).
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-reasoned 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.

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 communicates it very well using appropriate techniques and methods.	Develops an interesting solution and 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.
Evaluation of product or model	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. Presents 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.

Learner Name: _____

Examination Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Marking memorandum for the drawings of the house on a slope (Assess the site plan, floor plan, elevations, section, drainage layout, step foundation, retaining wall, and electrical supply)

SCALE DRAWINGS	CRITERIA	MARK ALLOCATION		
		TOTAL MARKS	LEARNER'S MARK	CONVERT TO 25
SITE PLAN	Clear layout in relation to adjacent sites	5		
	Boundaries and building restrictions	5		
	North direction and labelling	5		
	Neatness	5		
	Scale	5		
	SUBTOTAL		25	
FLOOR PLAN	Line work	5		
	Appropriateness (Design, change rooms, toilets, doors, windows sizes, and wall sizes)	10		
	Accuracy (measurements, sizes)	5		
	Correctness (Position and correct indication of windows, doors, colouring, wall sizes, and exit to field)	20		
	Neatness	5		
	Scale	5		
	Labelling and measurements	10		
SUBTOTAL		60		
ELEVATIONS	Correctness (size, openings, roof/slope)	10		
	Neatness	5		
	Accuracy	5		
	Scale	5		
SUBTOTAL		25 x 2 = 50		
SECTION	Correctness (substructure, superstructure, roof)	10		
	Accuracy (positions of DPC, relation between walls in the substructure and those in the superstructure, height and roofing in general)	10		
	Neatness and labelling	5		
	Scale	5		
SUBTOTAL		30		
DRAINAGE LAYOUT	Main sewer line (Correct line type)	1		
	Slope	1		
	Description of pipes (Diameter, type of material, type of pipe e.g. SP or WP)	3		
	Correct placement of RE, IE, VP and G	10		
SUBTOTAL		15		
TOTAL		180		

NOTE: Conversion of marks to 25

E.g. $\frac{120}{180} = 67\%$

$$\frac{67}{4} = \frac{17}{25}$$

3.4 Rubric for assessment of the final product/model

CRITERIA	7	6	5	4	3	2	1
	80 -100%	70 – 79%	60 - 69%	50 - 59%	40 - 49%	30 - 39%	0 - 29%
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 adequately fulfils the purpose for which it was designed. It shows some innovation that is appropriate to the design brief.	The product satisfactorily fulfils the purpose for which it was designed. It shows limited innovation for the identified need or problem.	The product fulfils its functional requirements. The solution shows no innovation for the identified need or problem.	The product barely fulfils functional requirements but lacks any refinement or innovation.	The project is incomplete and does not fulfil the identified need or problem.
MANUFACTURING COMPETENCY	Demonstrates an outstanding level of skill and competence to correctly and safely use a wide range of materials, tools, equipment and machines under supervision.	Demonstrates a very high level of skill and competence to correctly and safely use a wide range of materials, tools, equipment and machines under supervision.	Demonstrates a high level of skill and competence to correctly and safely use a range of materials, tools, equipment and machines under supervision.	Demonstrates a satisfactory level of skill and competence to correctly and safely use appropriate materials, tools, equipment and machines under supervision.	Demonstrates an acceptable level of skill and competence to correctly and safely use appropriate materials, tools, equipment and machines under supervision.	Demonstrates some regard for accuracy and safety in the use of materials, tools, equipment and machines under supervision.	Demonstrates a lack of skill or competence in the use of appropriate materials, tools, equipment and machines under supervision. Pays little attention to safety.
MANAGEMENT OF PROCESS	Demonstrates continual review of the making process. Shows outstanding ability 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 adaptability in making modifications to ensure a high-quality product. Manages waste and time excellently.	Shows ability to adapt and modify the design when difficulties arise. Plan adequate to minimise waste. Manages time well.	Applies knowledge of materials and processes to overcome problems in the making process. Demonstrates some sense of material and time management.	Shows evidence of adopting alternative ways of proceeding when difficulty is experienced. Seeks assistance from teacher 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 teacher. Proceeds regardless of time and material management.	Makes no attempt to overcome making problems. Shows no proper planning resulting in no regard for time and material management.
MODELLING THE PRODUCT	Exceptionally modelled to illustrate, realistically the 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.	Model barely illustrates the function for which the product was developed.	The model shows no clarity as to how the product is to function.

4 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

SECTION 5: EXAMPLES OF MARK SHEETS

MARK SHEET FOR THE DESIGN PORTFOLIO										
NAME OF LEARNER		CRITERIA								
		Presentation	Development of a design brief	Investigation and analyses information	Generation of design ideas	Communication of ideas	Evaluation of product or model	TOTAL: 42 (6 x 7)	TOTAL: 100 %	TOTAL: 25
		7	7	7	7	7	7	42		
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
								TOTAL OF PAGE		
								GROUP AVERAGE		

Signature (Teacher)

Date

Signature (Moderator)

Date



MARK SHEET FOR THE FINAL PRODUCT								
NAME OF LEARNER		FITNESS FOR PURPOSE	MANUFACTURING COMPETENCY	MANAGEMENT OF PROCESS	MODELLING THE PRODUCT	TOTAL: 28 (4 x 7)	TOTAL: 100 %	TOTAL: 50
		7	7	7	7	28		
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
				TOTAL OF PAGE				
				GROUP AVERAGE				

Signature (Teacher)

Date

Signature (Moderator)

Date

SCHOOL STAMP

COMPOSITE MARK SHEET						
PARTICULARS OF LEARNER			DESIGN PORTFOLIO	FINAL PRODUCT		TOTAL
No.	EXAMINATION NUMBER	FULL NAME		SCALE DRAWINGS	MODEL	
			25	25	50	100
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
			TOTAL OF PAGE			
			GROUP AVERAGE (LAST PAGE)			

Signature (Teacher)

Date

Signature (Moderator)

Date

SCHOOL STAMP