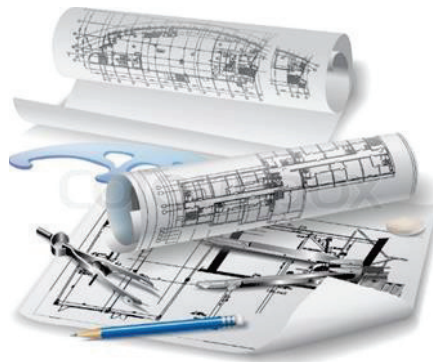




GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

ENGINEERING GRAPHICS & DESIGN



**GUIDELINES for the
PRACTICAL ASSESSMENT TASKS**

GRADE 10

2023

SECTION A (TEACHER GUIDELINES)**INSTRUCTIONS FOR THE ADMINISTRATION OF THE PAT**

NOTE: These SECTION A 'INSTRUCTIONS' are for the EGD Teachers, DHs and Officials!

2023 PRACTICAL ASSESSMENT TASK (PAT) MANAGEMENT PLAN

No	PAT activity	2023 Dates
GRADE 10		
1	Handing out of the Gr. 10 PAT document to each learner	16/17 Mar
2	Teaching/explaining the Design Process as well as explaining and discussing the/each scenario	16/17 – 24 Mar
3	PHASE 1 presentations and assessment completed	<u>Before Tue 18 Jul</u>
4	Moderation of PHASE 1	19 Jul – 28 Sept
5	PHASE 2 & 3 / ALL PAT presentations completed	<u>Before Tue 10 Oct</u>
8	Final assessment of ALL PATs	10 – 15 Oct
9	ALL PAT marks submitted to EGD SES	16 – 20 Oct
10	Final provincial moderation of ALL 'complete PATs'	11 – 24 Oct

NOTE: The date of 'Before Tuesday 10 October 2023' is NOT NEGOTIABLE!

Although the PHASES could be completed either **cyclically** or during **block times**, as indicated in the ATP, it is recommended that **ONE ENTIRE day per term**, i.e., from **08:00 to 17:00+**, be allocated to each PHASE.

The **TOTAL TIME (maximum)** allocated for the completion of **ALL the PHASES** of the PAT should **NOT exceed 15 hours**.

To ensure that the PAT is completed within the stipulated timeframes, it is **essential that the teacher prepares and verbally communicates a management plan/pacesetter with target dates**. This will help learners monitor their own progress, and for the teacher to implement intervention programmes.

NOTE:

To ensure the integrity of the PAT as a 'third NSC examination paper', the following additional instructions must be adhered to. Non-compliance with any of these and afore-mentioned instructions will be deemed a serious irregularity.

- It is the **responsibility of the teacher** to ensure that **each learner's PAT** is of an **appropriate Grade 10 level and complexity**.
- **ALL presentation requirements** of this PAT **must be strictly adhered to**.
- Except for the required research component, **ALL the presentation requirements** of the PAT **must be completed at school under the supervision of the teacher**.
- **Explanatory examples**, e.g., graphical illustration, best practices from previous years' PATs, etc., **may ONLY be presented to the learners during the initial mediation of the PAT**. As the explanatory examples **may not be given to the learners or left for them to view indefinitely after the initial mediation**, learners **must be encouraged to take notes during the initial mediation, but may NOT take any photographs or videos**.
- Although the sharing of knowledge and ideas between learners is permissible, **no presentation may be shared or copied as the entire PAT must be completed individually**. **ALL the presentations, including the front page, table of contents (index), management plan etc., must be the learner's own original work**.
- **For the Grade 10 PAT ONLY, may teachers in addition to A4 and A3 drawing sheets and grid/graph paper, also give some usable templates, e.g., a table for the selection process (presentation requirements no. 4), etc.**

It must however be emphasised that these templates are merely to provide some additional guidance to the Grade 10 learners, and may therefore NOT be given to or used by any of Grade 11 or 12 learners.

- **NO drawings for the Grade 10 PAT may be prepared in CAD!**
- **ALL learners must be encouraged to work on their own, with minimal intervention. Developmental feedback and guidance may therefore ONLY be given on presentations or a PHASE that has already been prepared/completed/attempted, or when the learner requests it.**
A learner must therefore first do/attempt a presentation requirement before 'assessment for learning' is applied, i.e., before feedback and guidance is given!
- The **DECLARATIONS OF AUTHENTICITY** (see page 15) must be completed and signed by learner and the teacher ONLY prior to the final assessment of the PAT.
- The **SUMMATIVE ASSESSMENT SHEET** (see page 14) must be completed in full for each learner following the final assessment of the PAT.
- It must be ensured that **ONLY** the completed **SUMMATIVE ASSESSMENT SHEET**, **DECLARATION OF AUTHENTICITY** and the **CHECKLIST** (see pages 11 & 12) are included after the table of content/index in each learners completed PAT file/portfolios.

ASSESSMENT AND MODERATION OF THE PAT

Assessment

The assessment of the PAT must be done according to the included **ASSESSMENT CRITERIA AND CHECKLIST** of this 2023 Grade 10 EGD PAT document!

Where a school has **more than one Grade 10 EGD teacher**, the **teachers must assist one another by conducting PAT assessment as a team**. This will ensure a consistent standard of assessment across all the learners.

The **final formal assessment** of **ALL the PATs** must be completed **by 15 October 2023!**

Once the PATs have been assessed and moderated, the teacher/school **must retain ALL** the PATs for provincial moderation. **ALL the PATs must therefore be retained at the school, at least the until end of Term 1 of 2024.**

Clarification of level descriptors and the verification of marks:

- **1-mark level descriptor:**
NOTE: There is NO percentage (%) for the 1-mark level descriptor!

1-mark level descriptive	0	Requirement not met or presented incorrectly
	1	Requirement has been met and/or presented correctly

This level descriptor is used for **elementary/basic presentation requirements and/or drawing features**, and must be applied as follows:

- **'0' (zero) must be allocated** for the requirement **NOT** met, or if the presentation **thereof** is **INCORRECT**.
 - **1 mark may only be allocated** if the requirement has been met **FULLY** and the presentation **thereof** is **CORRECT**.
- **2-mark level descriptor:**

2-mark level descriptive	0	Requirement not met, or less than 30% evidence of knowledge shown (very poor)
	1	Requirement included and at least 30%+ evidence of knowledge shown (avg.)
	2	Presentation shows at least 80% or more evidence of knowledge (very good)

- **'0' (zero) must be allocated** if the requirement has **NOT** been included/ shown, or if the **presentation** of the requirement shows **less than 30% evidence of knowledge**, or when the requirement is **VERY POOR**.

Continuation of the 2-mark level descriptor:

- **1 mark must (*may only*) be allocated** if the presentation of the **requirement shows at least 30% or MORE evidence of knowledge**, or the requirement is **NOT complete** or **NOT completely correct**, **NOT compliant and/or clear**, i.e. **AVERAGE**.
- **2 marks may only be allocated** if the presentation of the **requirement shows at least 80% or MORE evidence of knowledge**, and the **requirement is more than 80% complete**, **correct/compliant and clear**, i.e. **VERY GOOD**.

- **7-mark level descriptor**

DESCRIPTION for MARK	GENERAL INDICATORS	± PERCENTAGE	MARK
OUTSTANDING	<i>Error free</i>	100%	7
MERITORIOUS (VERY GOOD)	<i>Few errors</i>	± 80% +	6
SUBSTANTIAL (GOOD)		± 70%	5
ADEQUATE (SATISFACTORY)	<i>Some errors</i> (± ½ right and ½ wrong)	± 55% Just MORE than a 50%	4
MODERATE (ACCEPTABLE)		± 40% Just LESS than a 50%	3
ELEMENTARY (UNACCEPTABLE)	<i>Many errors</i>	± 33%	2
NOT ACHIEVED (VERY BAD)	<i>Completely wrong</i>	± 25% & LESS	1
NON-/NO COMPLIANCE	<i>No evidence</i>	Nothing to mark	0

This implies that a **'7' can only be allocated** if the presentation requirement(s) is **100% correct/compliant**, i.e., **outstanding** and **error-free**.

- **Verification of ALL final marks out of 10:**

Each final mark out of 10 **MUST be verified** according to the descriptors contained in the **rubric on page 13** of this document. This implies that a **'10' can only be allocated** if the presentation requirement(s) is **100% correct/compliant**, i.e., **perfect** and **error-free**.

- **Rounding-off of marks:**

Each mark out of 10 must be **rounded off before being captured** on the **SUMMATIVE ASSESSMENT SHEET** (see page 14) and the **recording/mark sheet**. A mark of 9,5 or 9,75 must, however, remain a 9 as the 0,5 or 0,75 is an indication of a mistake. The final mark out of 25, 50 and 25 for each of the three complete sections of the PAT must also be rounded off after being calculated.

Moderation

The moderation of the PAT must be done according to the included **ASSESSMENT CRITERIA AND CHECKLIST** of this 2023 Grade 10 EGD PAT document!

As monitoring and/or moderation of the PAT can take place at any stage during the development of the PAT, **ALL completed presentation requirements of ALL the PATs MUST always be available at the school.**

NOTE:

A tolerance range of **ONLY 5%** is permissible between the **average assessed mark** and the **average moderated mark** of the **PATs selected for moderation**. Only once moderation has been completed **must the more than 5% difference** between the average marks of the moderated PATs **be applied to the remainder of the PAT's**.

NOTES on the requirements, and limitations, for the Grade 10 EGD PAT:

- **The PAT must be an application of EGD topics/content already taught, and therefore within the context of Grade 10 ‘2023 EGD Examinable Content Mapping’ content.**
- **As prescribed by the Grade 10 ‘2023 EGD Examinable Content Mapping’ requirements, the Grade 10 mechanical design project must consist of 3rd angle orthographic working drawings with non-sectional, sectional and half-sectional views of mechanical castings and objects from industry (including parts/ components from any object, which could be graphically presented within the context of EGD mechanical drawings).**

Only the following may be included in the views or drawing(s):

◆ Title; ◆ Scale; ◆ Layout planning; ◆ Centre lines; ◆ Hidden detail; ◆ Cutting planes for ‘full’ sectional and/or half-sectional views; ◆ Hatching detail; ◆ Dimensioning; ◆ Notes; ◆ Symbol of projection

The following may NOT be included in any of the views, or as a drawing(s):

◆ Non-permanent assemblies; ◆ Hexagonal bolts, nuts/lock nuts, washers/ spacers; ◆ Keys and keyways; ◆ Other different types of section, e.g., aligned section etc.; ◆ Format and content of working drawing name/title blocks; ◆ Basic welding, machining symbols; ◆ Tolerances

- **The research topics may also NOT include or be on any of the prescribed ‘2023 EGD Examinable Content’ for Grade 10, 11 or 12!**

NOTES on using grid/graph paper for the freehand drawings:

- **Grid/graph paper must be used, and evidence of the grid/graph paper used must be included in the PAT file/portfolio!**
- **It is recommended that the reverse (clean) side of copies of ‘darker/clearer’ grid paper, as found in the back of EGD textbooks, be used for the freehand drawings, or to simply use a copy as a ‘backing’ to clean drawing sheets.**
- **If freehand drawings are going to be drawn directly on grid paper, the ‘grids’ must be of a much lighter ‘other’ colour, e.g., light blue or light green, so that the quality and darkness of the pencil line types will not have to be changed!**
- **Explain using the ‘block sizes’ as the scale, e.g., 1 Block = 500 x 500.**

End of the SECTION A ‘INSTRUCTIONS’ for the EGD Teachers, DHs and Officials!

GRADE 10 SECTION B (LEARNER TASK)

General information and instructions:

- **The PAT is a compulsory formal assessment task** that will contribute towards your final Promotional mark.
NOTE: You will not be awarded a final Grade 10 EGD Promotional mark if you do not complete a PAT!
- **ALL the presentation requirements of the selected PAT must be strictly adhered to** and, with the exception of the research component, be **completed at school**, under the **supervision of your teacher**.
- Although the sharing of knowledge and ideas is permissible, **no presentations may be shared or copied**. The **entire PAT must be completed individually** and **ALL the presentations, including the front page, table of contents, management plan etc., must be your own original work**.
- The PAT **must be completed in phases** and **within the given time frames of your teacher's pacesetter/management plan**.
- **ALL freehand drawings and instrument drawings must be prepared in pencil**.
- The PAT **must be of an appropriate higher-order Grade 10 complexity**.
- The PAT **will be assessed according to the ASSESSMENT CRITERIA AND CHECKLISTS** (see pages 11 & 12) of this PAT document.
- The **ASSESSMENT CRITERIA AND CHECKLIST** (see pages 11 & 12) **must be used to provide clear evidence of your own continuous self-evaluation** and the **meeting of the deadlines** during the development of the PAT.
- Prior to the final submission of your complete PAT, you **must complete and sign the DECLARATIONS OF AUTHENTICITY** (see page 15).
- **ONLY the 2023 SUMMATIVE ASSESSMENT SHEET** (see page 14), your **completed and signed DECLARATION OF AUTHENTICITY**, your **completed 2023 CHECKLIST** and **ALL your presentations must be included** in the **correct sequence** in your **PAT file/portfolio**.
- Untidy and messy work, as well as the late submission of presentation requirements, will be penalised.

GRADE 10 PRACTICAL ASSESSMENT TASK

A mechanical design project

Scenario

You are employed as a draughtsperson by a drafting firm that specialises in providing design services on **COMPLEX ONE-PART/COMPONENT OBJECTS** or **COMPLEX PARTS/COMPONENTS** from assembled objects, that can be graphically presented by applying the prescribed content for Grade 10 EGD mechanical drawings.

You are tasked with **investigating and analysing** the **design features** of **existing complex one-part/component objects** or the **complex parts/components** of assembled objects, and to then **design an improvement(s)** to the specific **part/component**, which could be one or more of the following:

- Improved efficiency
- To strengthen its current design
- Modify its design
- To simplify its application

Your investigation, analysis and solution require the following stages:

- The **FIRST stage** involves **finding and/or selecting (choosing)** a suitable **complex one-part/component object** or a **complex part/component** from an assembled object.

The **selected (chosen) one-part/component object** or **part/component** will forthwith simply be referred to as the **component** in this project.

NOTE:

You are **NOT** required to purchase the component. The component should therefore be **something that is already available to you, or from an object that is broken, or no longer being used.**

- The **SECOND stage** involves **investigating** and **measuring ALL features** of the component.
- The **THIRD stage** requires the **identification of ONE area or feature** of the component which could be **improved, modified** or **redesigned** in some way. This will necessitate the application of the **design process**, as stipulated below in the presentation requirements.

Requirements and specifications for the selected Component:

- Each learner **must have his/her own selected component** for the PAT.
- The **component must be submitted** together with your PAT file/portfolio as part of the PAT presentation.
- **As a suitable scale other that scale 1 : 1 may be used** to graphically present the component to an appropriate size, **the size of the component is not important**, as long as it is **not too large or heavy to be submitted**.
- The component may consist of separate parts/components that are permanently bonded together by means of **welding, soldering, fusing, or glue**, to form **ONE permanent component**.
- **Components, including the material(s) that it is made of, that could be deemed to be dangerous in any way, may NOT be used for this PAT.**
- Your teacher **must approve the component that you have selected** to ensure that a PAT of an appropriate higher-order Grade 10 complexity can be produced.

PHASE 1 PRESENTATION REQUIREMENTS

1. **Analyse the given scenario and formulate a design brief in two paragraphs:**
 - The **first paragraph** must, **in your own words**, give a **brief background to the project**, as well as a **clear description of what has to be designed/'achieved'**.
 - The **second paragraph** must, **in your own words**, give a **clear overview of your role in the project**, as well as a **description of the complete design process** that you are going to implement to complete this project (PAT).

NOTE: Paragraphs ONLY, i.e., a ¼ to a ⅓ of a page, and NOT an essay(s)!

From the prescribed scenario and your teacher's management plan, include the following as part of your design brief:

- Your **own** list of **the specifications** of the component that you have selected.
- Your **own** list of **the possible constraints** of the component that you have selected.

The specifications that you have listed may however not be repeated or reworded as possible constraints.
- Your **own management plan** that **specifies target dates** for the completion of each presentation requirement.

NOTE: Each specification & constraint must be 'numbered/bulleted' individually!

2. **Conduct your own research** on:

- The **function/purpose**, the **material(s)** that the **component that you have selected is made of**, and **ALL** the **specific design features** of the component that you have selected.
- The **design and features** of at least **ONE** other component/item that is **similar**, i.e., have the **same function/purpose**, to the one that you have selected.

NOTE:

- The **research must be relevant** and should therefore include **graphic material**, e.g., **photographs, pictures** and/or **illustrations**.
- **ALL** the **required research material** must be included in the **PAT portfolio**.
- The **presentation** of the **research material** must be **aesthetically presented** and may **NOT** exceed **TWO A4** or **ONE A3** page per topic.
- The **first THREE** research requirements will be primarily **hands-on investigative research**, which must be presented using **detailed photographs**, taken during the second stage, with **labels and/or notes** indicating the **purpose, material and the design features** of each aspect of the component.
- The **evidence of the ONE** other similar component may be in the form of a **comprehensive set of pictures, illustrations and/or photographs**, together with **explanatory labels and notes**.
- There must be **clear evidence** that the **research was used** in your design solution.
- Include a list of **ALL references used (Bibliography)**.

NOTE: Include the references directly after the research, i.e., as part of no. 2!

3. **Prepare TWO sets** of neat detailed freehand drawings, each showing **TWO different proposed improvement, modification or re-design** to the component.

Each set of freehand drawings must show **at least TWO orthographic views in third angle orthographic projection**, and an **isometric drawing** that show **dimensions, labels and explanatory notes**, as well as the **correct presentation** of **ALL** the **features**. **Include a short explanation** of the possible improvement, modification or re-design.

NOTE:

- **Grid/Graph paper must be used** to assist in preparing the freehand drawings so that **ALL features are drawn to proportion**. The grid/graph paper used must be included in the **PAT file/portfolio** as evidence.

NOTE:

- *It is recommended that you use the reverse (clean) side of copies of 'darker/clearer' grid paper, or to simply use a copy as a 'backing' to clean drawing sheets.*
- *Use the 'block sizes' as a scale, e.g., 1 Block = 10 x 10 mm, or = 5 x 5 mm.*
- **ALL aspects of the freehand drawing**, including dimensions, tables, labels, and possible information blocks **must be prepared using a pencil ONLY**. The use of **any other drawing instruments**, e.g., a ruler or compass, **will be penalised**.
- The drawings should be prepared on **A4 drawing sheets**.
- **NO borders** or **name/title block are required** for the drawing sheets. Simply add, **in pen and in neat, printed capital**, the **page number, your name** and the **date of completion** and **submission letters** in the **bottom right-hand corner** of each drawing sheet.
- **ALL** the freehand drawings **must comply with the guidelines and graphical symbols** contained in the **SANS 10111**.
- The drawings **must provide clear evidence** that a **high level of competency** has been attained in the **freehand drawing method**.

4. **Select the best proposed improvement/modification/re-designed solution**, which demonstrates an in-depth understanding of the design brief within the context of the specifications and constraints.

On a separate page, compare and evaluate the **TWO** freehand solutions by:

- **Creating a table** with a **minimum of THREE descriptive criteria** that will facilitate measurable comparisons
NOTE: NOT just a 'word', but a self-explanatory criterion!
- **Creating and applying a simple, self-explanatory rating scale** to score each solution against each of the **THREE** criterion
NOTE: You must explain the ratings/values of your created scale!
- **Justifying each rating scale score** by describing the positive and/or negative aspects of each solution against each of the **THREE** criterion.

Complete the process by writing a **comprehensive summary** giving reasons for your selected freehand solution. The summary **must also include whether any late changes** were made to the selected freehand solution, **or not**. If there were, they must be clearly described.

PHASE 2 PRESENTATION REQUIREMENTS

5. **Present the selected component and the proposed improvement/modification/re-design** as a **complete orthographic working drawing** (5.1) and an **isometric drawing** (5.2) that meet the following criteria:
- The **orthographic working drawing** must be presented on an **A3 drawing sheet**, correctly set up with a **border** and a **complete EGD name/title block**.
 - The **isometric drawing** may be presented on either an **A4 or A3 drawing sheet**.
 - **ALL the the prescribed/required drawings** (i.e., 5.1 and 5.2) **must be prepare using a pencil and drawing instruments**.
 - The drawings must provide clear evidence that **an expected level of competency had been attained with using a drawing pencil and drawing instrument**.
 - ALL the working drawings must comply with the *SANS 10111* Guidelines.
- 5.1 Draw, to a **suitable scale** and in **third angle orthographic projection**, a **complete mechanical multi-view orthographic working drawing** of the **component that you have selected, clearly showing the selected improvement/modification/re-design to one of the features**.

The drawing must show the following **THREE views**:

- 5.1.1 The **FRONT VIEW** (the primary or 'most descriptive' view)
- 5.1.2 A **SECOND PRIMARY VIEW**
- 5.1.3 Any other **SECONDARY VIEW**

NOTE:

ONE of the views must be sectioned, and **one** of the non-sectioned views must show all the hidden detail.

Include the following:

- Explanatory labels and notes
- Dimensions
- Cutting plane
- ALL hatching detail
- Scale
- Projection symbol

- 5.2 Draw, to a **suitable scale**, an **isometric drawing** of the **component that you have selected**.

NOTE:

- **Large circles** should be drawn as **octagons**, and **small circles** should be drawn as **hexagons**.
- **Fillets** and **curves/arcs** should be drawn as **partial octagons**, i.e., using a combination of **45°, 90°** and **0°/180°** lines.
- **Evidence of ALL auxiliary views** and **constructions used** to produce the drawing, must be **clearly shown**.
- **Use a COPY** of the **isometric drawing**, which may contain artistic features, as the **picture** for the **cover page** of your **PAT file/portfolio**.

PHASE 3: PRESENTATION REQUIREMENTS

Create a **PAT file/portfolio** containing the following **in the given sequence**:

- A **complete cover page**, including the **school's name**, **your full name & class/group**, **your teacher's title, initials & surname**, the **year (2023) & grade (Grade 10)**, and **copy of your own isometric drawing**.
- A **table of content/index**
 - a. The **2023 SUMMATIVE ASSESSMENT SHEET** (see page 14)
 - b. The **completed DECLARATION OF AUTHENTICITY** (see page 15)

Include the following **PHASE 1** and **PHASE 2** presentation requirements in the **PAT file/portfolio** after the **DECLARATION OF AUTHENTICITY**:

1. ALL the **design brief** requirements
2. **Evidence** of ALL the **resource material used** for the **required research**
3. The **TWO freehand drawings** of the possible design solutions
4. ALL the evidence of the **selection of the best solution**
5. ALL the required **orthographic drawing** and the **isometric drawing**
6. The **ASSESSMENT CRITERIA AND CHECKLIST** (see pages 11 & 12), which **must provide clear evidence of your own continuous self-evaluation** and the **meeting of the deadlines** during the development of the PAT.

NOTE:

Include the following at the **bottom right-hand corner** of each page **in pen**:

- **Clear numbering** according to the **numbers of the presentation requirements**
- **Your** (the learner's) **name**
- The **date of completion** and **submission**

Assessment criteria and control sheet for the 2023 GRADE 10 EGD PAT

- The **GRADE 10 SUMMATIVE ASSESSMENT SHEET** of this **EGD PAT** document **must be used to record the total out of 10 for each assessment criteria**.
- The contribution of each stage of the PAT is as follows:
 - The **design process**, i.e. presentation requirement number 1, 2, 3, 4, 6 and 7, contribute **50 marks** to the final PAT mark out of 100.
 - The **Working drawing and the pictorial drawing**, i.e. the presentation requirement number 5, contribute **25 marks to the final PAT** mark out of 100
 - **Drawing methods, drawing skills and presentation**, that needs to be assessed by using ANNEXURE A, contribute **25 marks to the final PAT** mark out of 100.

ASSESSMENT CRITERIA AND CHECKLIST FOR THE 2023 GRADE 10 EGD PAT								
1-mark level descriptive	0	Requirement not met or presented incorrectly			Checked	Mark allocation	Own notes/Comments	
	1	Requirement has been met and/or presented correctly						
2-mark level descriptive	0	Requirement not met, or less than 30% evidence of knowledge shown (poor)			Checked	Mark allocation	Own notes/Comments	
	1	Requirement included and at least 30%+ evidence of knowledge shown (avg.)						
	2	Presentation shows at least 80% or more evidence of knowledge (very good)						
1	Design Brief							
	1.1	1 st paragraph: background and comprehensive description of what to design				2		
	1.2	2 nd paragraph: your role and the design process that you are going to follow				2		
	1.3	A list of the specifications of the selected component				2		
	1.4	A list of constraints of the selected component				2		
	1.5	A management plan with target dates for ALL the presentation requirements				2		
					TOTAL	10		
2	Research (This should be restricted to a maximum of TWO A4 or ONE A3 page per research topic)							
Relevant and usable research on:	2.1	Purpose and material of the selected component (1 + 1 = 2)				2		
		ALL the design features of the selected component				2		
	2.2	The design and features of another similar component/item				2		
Evidence that the research has been used						2		
Bibliography/List of sources included						2		
					TOTAL	10		
3	Freehand drawings of TWO possible design solutions				Final mark for each solution			
Assess each freehand solution as follows:	Relevant orthographic views drawn		2	Solution 1		10		
	Correct presentation of ALL the features		2					
	Correctly drawn in third angle		1					
	Isometric drawing		2	Solution 1		10		
	Labels and explanatory notes (1 + 1)		2					
	Dimensioning		2					
	Description of improvement/modification/re-design		2					
	Functionality of improvement/modification/re-design		2					
Subtotal = 15 ÷ 1,5 = TOTAL					10			
(1 = 1 ; 2 = 1 ; 3 = 2 ; 4 = 3 ; 5 = 3 ; 6 = 4 ; 7 = 5 ; 8 = 5 ; 9 = 6 ; 10 = 7 ; 11 = 7 ; 12 = 8 ; 13 = 9 ; 14 = 9 ; 15 = 10)								
4	Selecting the best freehand solution (This must be a separate presentation)							
Table created for an easily understandable presentation of the selection process						2		
THREE relevant and self-explanatory descriptive criteria to evaluate and compare						2		
Simple rating scale created and used to score each solution against each criterion						2		
Each score justified by describing the positive or negative against each criterion						2		
Comprehensive summary with reasons for selected solution (incl. possible late changes)						2		
					TOTAL	10		
5	Orthographic working drawing and a isometric drawing of the selected component							
Drawing sheet preparation								
Appropriately sized drawing sheets						1		
Border on the orthographic drawing's drawing sheets						2		
A complete name/title block on the orthographic drawing's drawing sheets						7		
NOTE: Use the 7-mark simplified rubric!					TOTAL	10		

ASSESSMENT CRITERIA AND CHECKLIST FOR THE 2023 GRADE 10 EGD PAT			
5.1	Orthographic drawing of selected component clearly showing proposed improvement/modification/redesign		
	Appropriate view selected as the front view (the primary view), and is drawn correctly		2
	Appropriate view selected as the second primary view , and is drawn correctly		2
	Appropriate view selected as the third view , and is drawn correctly		2
	ONE view sectioned , and the section is drawn correctly		2
	ONE view contains all hidden detail , and the hidden detail is drawn correctly		2
	Improvement/modification/re-design correlates with selected freehand solution		1
	Cutting plane (1) + Projection symbol (1) (1 + 1 = 2)		2
	Dimensions		2
	ALL hatching detail		1
	Explanatory labels and notes		2
	Suitable scale selected and indicated correctly		1
	Drawing is in third-angle orthographic projection		1
	Subtotal = 20 ÷ 2 = TOTAL		10
5.2	Detailed isometric drawing		
	Suitable scale selected and indicated correctly		1
	Evidence of ALL auxiliary views and constructions used for the drawing		2
	Isometric drawing/answer		7
	<i>NOTE: Use the 7-mark simplified rubric!</i>	TOTAL	10
6	Continuous self-evaluation and the meeting of deadlines		
	Checklist completed as evidence of continuous self-assessment (mark out of 10 ÷ 2)		5
	The meeting of ALL the deadlines during the development (mark out of 10 ÷ 2)		5
	TOTAL		10
7	Presentation of the complete PAT file/portfolio		
	Complete cover page with a copy of the isometric drawing		1
	Table of contents/Index		1
	Completed summative assessment sheet and declaration		1
	Correct sequencing of ALL presentation requirements		1
	Name and numbering on ALL the presentation requirements		1
	General impression of file/portfolio, e.g., binding, appearance etc. (mark out of 10 ÷ 2)		5
	TOTAL		10
Assessment of drawing methods, drawing skills and presentation			
a.	Freehand drawings		
	Freehand drawing methods and skills (See ANNEXURE A on page 16) NOTE: • No evidence of grid/graph paper used = max. 7 marks , even if drawn excellently • Not drawn in freehand = 0 marks, & some evidence of instruments used = max. 5 marks		10
	Neatness (2) + correct line types used (2) + line consistency (2) + printing (2) + dimensioning (2) (Also see ANNEXURE A on page 16)		10
b.	Instrument drawings		
	Use of drawing instruments, drawing methods and skills (See ANNEXURE A on page 16)		10
	Neatness (2) + correct line types used (2) + line consistency (2) + printing (2) + dimensioning (2) (Also see ANNEXURE A on page 16)		10

SIMPLIFIED RUBRIC FOR ALLOCATION AND VERIFICATION OF MARKS**NOTE:**

- The final mark out of 10 of each assessment criterion, i.e., the overall level of achievement according to the presentation requirement, **must be verified according to this rubric.**
- This rubric must also be used to allocate marks for all aspects of the assessment criteria which require a mark out of 10.

VERIFICATION AND MARK ALLOCATION			
DESCRIPTION FOR MARK	GENERAL INDICATOR	± %	MARK
ALL/MORE than ALL the REQUIREMENTS are met. - PERFECT -	Error-free	100%	10
ALL (ALMOST ALL) the REQUIREMENTS are met. - OUTSTANDING -	Very few errors	90% +	9
ALMOST ALL (MOST OF) the REQUIREMENTS are met. - VERY GOOD -	Few errors	80% +	8
The REQUIREMENTS are met SUBSTANTIALLY . - GOOD -	Some errors	70% +	7
The REQUIREMENTS are met ADEQUATELY . - SATISFACTORY -		60% +	6
The REQUIREMENTS are met MODERATELY . - ACCEPTABLE -	Many errors	50% +	5
ONLY SOME of the REQUIREMENTS are met. - UNACCEPTABLE -		40% +	4
VERY FEW of the REQUIREMENTS are met. - NOT ACHIEVED -	Mostly wrong	30% + Only a few correct features	3
The REQUIREMENTS are NOT met. - VERY POOR -	Completely wrong	29% and LESS	2
		Something done incorrectly/ poorly	1
NOT DONE	No work handed in!	Nothing to mark!	0

PAT 2023: GRADE 10 SUMMATIVE ASSESSMENT SHEET

**2023 GRADE 10 PAT
SUMMATIVE ASSESSMENT SHEET**

NAME OF SCHOOL: DISTRICT:

NAME OF LEARNER: (NAME AND SURNAME)

NAME OF TEACHER: (NAME AND SURNAME)

NAME OF MODERATOR: (NAME AND SURNAME) DATE:

PART A: Design Process			PART B: Orthographic and Pictorial drawings			Drawing competency and skill			
CRITERIA		MARK	CRITERIA		MARK	CRITERIA		MARK	
1	A design brief demonstrating a clear understanding of the scenario and the specifications, constraints and a management plan		All drawing sheets are appropriately set up with a border and an appropriate title block/panel .			Freehand drawing: ANNEXURE A	METHOD	The drawings display correct freehand drawing methods and skills and the method used to ensure proportion and size .	
2	Evidence of relevant and usable research with the inclusion of a bibliography		Orthographic drawings Assess each view's accuracy and correctness according to the stipulated requirements and the selected solution/device, the stipulated requirements and	5.1	Orthographic Working Drawing				The final drawing presentation is neat and there is consistency of line work/line quality, printing and dimensioning .
3	TWO detailed freehand drawings of possible solutions	1st Solution				Instrument drawing: ANNEXURE A	METHOD	The drawings display the correct use of drawing instruments, drawing methods and skills .	
		2nd Solution						The final drawing presentation is neat and there is consistency of line work/line quality, printing and dimensioning .	
4	Selecting the best solution which demonstrates a clear understanding of the design brief		Pictorial	5.2	Isometric Drawing				
6	Clear evidence of evaluation and the meeting of deadlines of all the requirements					SUBTOTAL		/ 40	
7	The presentation of the complete PAT portfolio								
SUBTOTAL		/ 70	SUBTOTAL		/ 30	CALCULATION		X 0.63	
CALCULATION		X 0.72	CALCULATION		X 0.84				
Teacher's TOTAL			Teacher's TOTAL			Teacher's TOTAL			
TOTAL: A		/ 50	TOTAL: B		/ 25	TOTAL: C		/ 25	
Moderated TOTAL			Moderated TOTAL			Moderated TOTAL			
TOTAL: A		/ 50	TOTAL: B		/ 25	TOTAL: C		/ 25	
TEACHER'S TOTAL:			A + B + C =		/ 100	TEACHER: Initial		MODERATOR: Initial	
MODERATED TOTAL:			A + B + C =		/ 100				

DECLARATION OF AUTHENTICITY

DECLARATION OF AUTHENTICITY

To be submitted with each learner's practical assessment task portfolio

NAME OF THE SCHOOL:

NAME OF LEARNER:
(SURNAME AND INITIALS)

I hereby declare that all the contents of the practical assessment task submitted by myself for assessment is my own original work and has not been plagiarised, copied from someone else or previously submitted for assessment.

SIGNATURE OF LEARNER

DATE / /2023
(DD/MM/YYYY)



NAME OF TEACHER:
(SURNAME AND INITIALS)

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

SIGNATURE OF TEACHER

DATE / /2023
(DD/MM/YYYY)



ANNEXURE A: ASSESSMENT RUBRIC

ASSESSING DRAWING METHODS, DRAWING SKILLS AND PRESENTATION

		LEVELS OF PERFORMANCE										
MARK ALLOCATION		10	9	8	7	6	5	4	3	2	1	0
Freehand drawing	METHODS AND SKILLS	The drawings display correct freehand drawing methods and skills. as well as the method used to ensure good proportion and size	<p>NOTE:</p> <ul style="list-style-type: none"> No evidence of grid/graph paper used = max. <u>7 marks</u>, even if excellent drawing methods and skills are displayed! Not drawn in freehand, i.e., completely drawn with instruments, = <u>0 marks</u> If instruments were used for, or to assist with, some aspect = max. <u>5 marks</u>, even if excellent drawing methods and skills are displayed. 									
	Final drawing presentation is neat, and the line types used, line constancy/quality, printing and dimensioning is correct.	The drawings display excellent drawing methods and skills and the method used to ensure outstanding proportion and size.		The drawings display satisfactory drawing methods and skills and the method used to ensure satisfactory proportion and size.		The drawings display poor drawing methods and skills and there is little to no evidence of the method used which resulted in poor proportion and size.		The drawings display very poor drawing methods and skills and no method was used to ensure correct proportion.				
Instrument drawing	METHODS AND SKILLS	The drawings display the correct use of drawing instruments, drawing methods and skills.	<p>Additional descriptors/guidelines:</p> <p>The drawings are neat and all line work/line quality, printing and dimensioning are outstanding and consistent.</p> <p>The drawings are very neat and all line work/line quality, printing and dimensioning are outstanding and consistent.</p> <p>The drawings are untidy with inconsistent line work/line quality, printing and dimensioning.</p> <p>The drawings display poor use of drawing instruments and a poor and incorrect application of drawing methods and skills.</p>									
	Final drawing presentation is neat, and the line types used, line constancy/quality, printing and dimensioning is correct.	The drawings display the correct use of drawing instruments and an outstanding application of drawing methods and skills.		The drawings display the correct use of drawing instruments and a satisfactory and mostly correct application of drawing methods and skills.		The drawings display poor use of drawing instruments and a poor and incorrect application of drawing methods and skills.		The drawings display an incorrect use of drawing instruments with incorrect applications of drawing methods and skills.				
		<p>Neatness (2) + correct line types used (2) + line quality/consistency (2) + compliant printing/writing (2) + compliant dimensioning (2)</p> <p>Neatness (2) + correct line types used (2) + line quality/consistency (2) + compliant printing/writing (2) + compliant dimensioning (2)</p> <p>Additional descriptors/guidelines:</p> <p>The drawings are very neat and all line work/line quality, printing and dimensioning are outstanding and consistent.</p> <p>The drawings are neat and the line work/line quality, printing and dimensioning are generally good and mostly consistent.</p> <p>The drawings are untidy, and the line work/line quality, printing and dimensioning are inconsistent.</p> <p>The drawings are neat and the line work/line quality, printing and dimensioning are generally good and mostly consistent.</p> <p>The drawings are untidy, and the line work/line quality, printing and dimensioning are inconsistent.</p>										