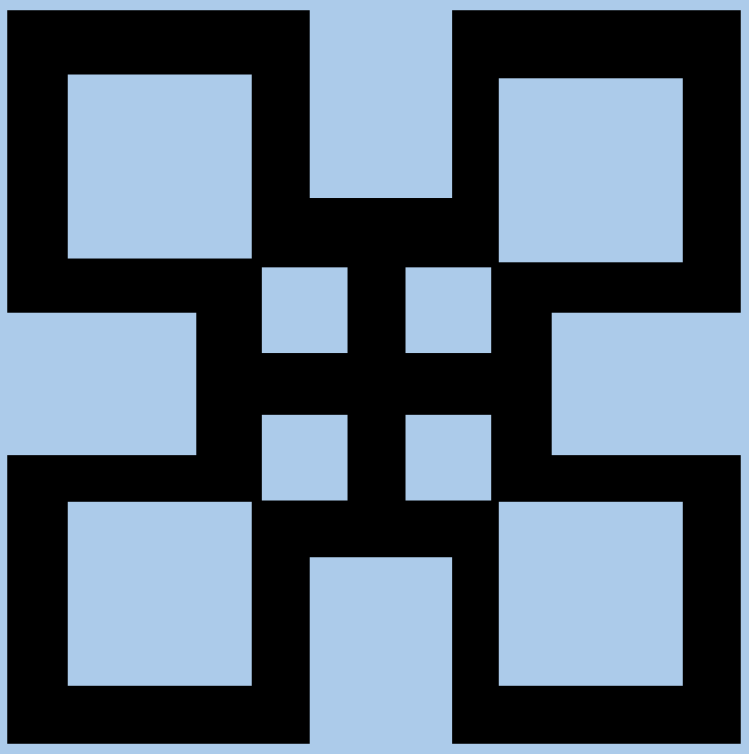
Secondary Education Professional Development Programme

Professional Learning Community Handbook

Design and Communication Technology

Year One



Ghana Education Service (GES)

NaCCA
NATIONAL COUNCIL FOR CURRICULUM AND ASSESSMENT

NTC

Professional Learning
Community Handbook

Design and Communication Technology

Year One

REPUBLIC OF GHANA

Contents

Introduction

This Professional Learning Community (PLC) Handbook is designed to enable teachers to deliver effective lessons for Year One of the new Design and Communication Technology Curriculum.'Effective' is defined as meaning that each lesson:

i. Has a weekly learning plan which is aligned with the content and pedagogy set out in the relevant Teacher Manual;

ii. Incorporates the relevant Learner Material which are available on the curriculum microsite;

iii. Contains assessment strategies which are aligned with the Teacher Manual, Learner Material and Transcript Assessment Guidance;

iv. Is delivered by the teacher in close adherence (Fidelity of Implementation) with i.) to iii.) above.

The PLC Handbook has a strong focus on assessment, outlining structured approaches to assessment derived from the Teacher Assessment Manual and Toolkit (TAMT), emphasising the attainment of learning outcomes, timely feedback to learners and recording learning outcomes accurately.

Additionally, this Handbook prescribes nine (9) main assessment events which teachers should score and record to constitute each learner's academic transcript for the academic year as follows: Two (2) Class exercises or Homework, one (1) Individual Portfolio, one (1) Group Project, two (2) Mid-semester examinations (in first and second semesters), two (2) End of Semester examinations (in first and second semester) and one (1) Individual project. It also promotes continuous weekly assessment for learning across all DoK levels, supporting teachers to deliver an all-inclusive education by inculcating 21st century skills, ICT, national values and support to special needs learners.

The TAMT identifies six modes of assessment which cover the nine events described above. The modes are described below.

a) **Portfolio**: To adapt flexible assessment and determine learners' strengths and areas of intervention for improvement, it is recommended that teachers prompt learners in week 2 about creating their own portfolio to submitted in week 22 for scoring. The scores should be sent to the appropriate authorities by the end of week 23.

b) **Mid-semester examination**: To evaluate knowledge and understanding among learners on the learning outcome covering weeks 1-5. It should focus on essays and practical questions and must be taken in the 6th week. The scores should be sent to the appropriate authorities by the end of week 8.

c) **Class Exercise:** To allow for immediate feedback and clarification of concepts, it is recommended that this be done in week 15.Ensuring the assessment has all the DOK levels to help identify learners who may require special educational support

on these focal areas. The scores should be sent to the appropriate authorities by the end of week 24.

d) **Individual Project:** To assess learners complex problem-solving skills, involving multiple tasks, research, analysis, and creative solutions. Project also accommodate various learning styles and preferences of learners and allowing them to choose how they approach the task. Teachers are to assign learners an individual project in week 10 to be submitted in week 20. The scores should be sent to the appropriate authorities by the end of week 24.

e) **End of 1st semester examination:** To evaluate knowledge and understanding of learners on the learning outcomes covering weeks 1-12. Multiple choice, essays and practical questions should be used to assess the learning outcomes. Teachers should ensure that the recorded marks are submitted through the. The scores should be sent to the appropriate authorities by the end of week 15.

f) **Group project:** To enable learners to demonstrate specific skills or competencies, such as research, communication, teamwork, tolerance and creativity. This should be given in week 16 and submitted by learners in week 19 The scores should be sent to the appropriate authorities by the end of week 20.

g) **Mid-semester examination**: To evaluate knowledge and understanding among learners on the learning outcome covering weeks 13-17. It should focus on essay and practical questions and must be taken in the 18th week. The scores should be sent to the appropriate authorities by the end of week 22.

h) **Homework:** It involves the use of structured tasks or projects that learners complete outside of regular class time to evaluate their understanding, knowledge and skills gained in a specific learning outcome. This assessment should be done in week 4 and submitted in week 7. The scores should be sent to the appropriate authorities by the end of week 24.

i) **End of 2nd semester examination:** To evaluate knowledge and understanding of learners on the learning outcomes covering weeks 13-24.it is recommended that multiple choice, essays and practical questions are used to assess the learning outcomes. The scores should be sent to the appropriate authorities within 3weeks after the examination.

PLC SESSION 0: Internal Assessment Structure and Transcript System for SHS/SHTS and STEM Schools

1. Introduction (20 minutes)

This Professional Learning Community (PLC) session focuses on enhancing internal assessment and transcript system to ensure it aligns with the new Senior High School, Senior High Technical School and Science, Technology, Engineering and Mathematics curriculum and effectively supports student learning.

In this session, you will discuss the structure and frequency of assessments, strategies for involving learners in the assessment process, methods for providing constructive feedback and the implementation of a robust transcript system.

1.1 Share two ways in which you have used assessment in the past to support teaching and learning.

1.2 Share your observation on how a colleague used assessment in the past to support teaching and learning.

2. Internal assessment structure and frequency (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session.

Purpose

The purpose of the session is to strengthen teachers' understanding and competence in assessment techniques to effectively teach and assess the new SHS, SHTS and STEM Curriculum.

Learning Outcome

To ensure teachers understand the assessment structure and acquire the skill to design, administer and provide feedback of the assessments that accurately reflect the learning outcomes for each week.

Learning Indicators

1. Discuss the formative and summative assessment strategies recommended for the new curriculum.
2. Discuss in detail, the relevance and structure of the assessment transcript system and its use/implementation.

2.2 Discuss *formative assessment strategies* which can be used in your subject area.

E.g.

Questioning, etc.

2.3 Discuss *summative assessment strategies* which can be used in your subject area.

E.g.

End of Semester Examinations, etc.

2.4 Discuss as a subject group how you would administer a given assessment strategy.

E.g.

Class Exercise:

i. *Inform learners ahead of time*

ii. *Write the questions on the board, etc.*

2.5 Discuss methods of providing constructive feedback to learners on their performance.

E.g.

Provide individual comments on learners' work, etc.

2.6 Discuss as a subject group some of the do's and don'ts of constructing assessment items/tasks.

E.g.

Do: Align the purpose of the assessment with the task, etc.

Don't: Do not give clues in the stem, etc.

2.7 Discuss as a subject group the main assessments that would be recorded in the transcript system in the academic year.

E.g.

Class exercise, etc.

2.8 Discuss how and where you would record and submit learners' assessments for the transcript system.

E.g.

Record learners scores immediately, etc.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session.

3.2 Remember to:

a) read PLC Session 1 and related Learner Material

b) bring along your Teacher Manual, PLC Handbook and learning plan on *week 1* in preparation for the next session.

PLC SESSION 1: Sketch Concepts

1. Introduction (20 minutes)

1.1 Share two things you did in the classroom based on your experience in the various PLC sessions you have attended (NTS 1a, 1b and 2a-2e).

1.2 Share your observation on what a colleague did by way of application of lessons learned from previous PLC sessions attended (NTS 1a, 1b and 2a-2e).

2. Review of learning plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session.

Purpose

The purpose of the session is to review the learning plan for *week 1* by aligning the plan with the Learner Material and appropriate assessment strategies.

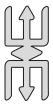
Learning Outcome

Review your learning plan for *week 1* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 1* in your learning plan, identify activities that align with those in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



Note

The selected activities should be included in the teacher/learner activity section of the learning plan

2.3 Develop assessment tasks/items based on the learning indicator(s) for the week. This week's recommended mode of assessment is **group discussion** (NTS 3k, 3p).

E.g.

Discuss and present on the following:

i. *Three types of sketches.*

ii. *Two reasons why sketches are important in the design process.*

Refer to the Teacher Manual pages 13&18 and Learner Material section 1 for additional task

Note

i. *The assessment tasks may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities in the learning plan*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a. *Participation in discussion -1.5 marks*

b. *Identification of types of sketches - 3 marks (1 mark each)*

c. *Stating appropriate reasons why sketches are important in the design process - 2 marks (1 mark each)*

   i. *It enhances creativity*

   ii. *It helps in exploring design options, etc*

d. *Ability to prepare a presentation based on the guided format (power point, report etc.) - 2 marks*

e. *Presentation - 1.5 marks*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

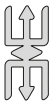
Group learners in mixed-ability groups with a minimum of 5 members depending on the class size and ask them to discuss, record their thoughts on the task to be presented, etc.

Refer to Teacher Assessment Manual and Toolkit pages 66 – 69 for further information on the assessment strategy

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

Give room for learners/groups to give feedback to colleagues and clarify misconceptions where necessary, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 1 to provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

c) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

d) read PLC Session 2 and related Learner Material (NTS 3a).

e) bring along your Teacher Manual, PLC Handbook and learning plan on *week 2* in preparation for the next session (NTS 3a).

PLC SESSION 2: Basic Shapes, Forms and Rendering Techniques in Designing

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 1* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 1* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 2* by aligning the learning plan with Learner Material and appropriate assessment strategies.

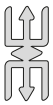
Learning Outcome

Review your learning plan for *week 2* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 2* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **group class exercise** (NTS 3k, 3p).

E.g.

Select two basic shapes of your choice to create an object, state three rendering by shading techniques that can be used to render it and use at least one of them to render the object created.

Refer to Teacher Manual pages 19–21 and Learner Material Section 1 for additional task.

Hint

*Learners are to build an individual portfolio for the entire year be submitted by the end of week 22, refer to **Appendix A** for the task and rubric.*

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Criteria	Marks	Description	Examples of Expected Responses
Shape Selection and Object Creation	*10*	*Demonstrates the selection of two basic shapes and effectively combines them to create a unique object.*	*Selects a circle and a triangle to create a simplified representation of a house.*
Identification of Rendering Techniques	*10*	*Accurately identifies three different shading techniques suitable for rendering the object.*	*Lists hatching, cross-hatching, and stippling as suitable shading techniques for rendering the object.*
Application of a Shading Technique	*10*	*Applies at least one of the stated shading techniques effectively to render the created object, demonstrating skill and understanding of the technique.*	*Uses cross-hatching to render the object, showing effective texture and depth in the areas of shadow.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

a) *Instructions should be printed / projected or written on the board for learners.*

b) *Put learners in mixed ability groups of 3 to 5 members depending on the class size.*

c) *Instruct learners to record and submit their work on manila cards and present in a whole class session.*

Refer to Teacher Assessment Manual and Toolkit pages 80-83 for further information on the assessment strategy

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class.(NTS 3l-3n)

E.g.

a) *Give room for feedback from other learners/groups and give the final comments on the work to learners*

b) *Ask learners to address the corrections and submit for final scoring, etc.*

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 2 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 3 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on week 3 in preparation for the next session (NTS 3a).

Appendix A: Portfolio

Task

Create a portfolio to constitute brief descriptions on all drawings from Week 3 to 17. Ensure to do the following

a) Write your name, form and class on an empty first page on your portfolio.

b) Prepare a table of content on all items in the portfolio.

c) Submit the portfolio work in week 22.

Marking scheme/rubrics

Criteria	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Identification Information	*Name, form, and class are correctly written on the first empty page of the portfolio.*	*Name, form, and class are present but may contain minor errors or formatting issues.*	*Name, form, or class is missing or incorrectly written.*	*Full: Portfolio starts with a clear, correctly formatted page that includes the student's name, form, and class.*
Table of Contents	*Table of contents is comprehensive, clearly formatted, and correctly lists all items in the portfolio with corresponding pages.*	*Table of contents is included but may be incomplete, poorly formatted, or contains minor errors in page numbering.*	*Table of contents is missing, incomplete, or largely inaccurate.*	*Full: Table of contents is neatly formatted, providing an accurate guide to the portfolio contents.*
Completeness of Descriptions	*All drawings from Week 3 to 17 are included with brief, accurate descriptions that provide insight into each drawing.*	*Most drawings are included and described, but some descriptions may be missing or lack detail.*	*Many drawings or descriptions are missing, or the descriptions are too vague or incorrect.*	*Full: Each drawing is accompanied by a brief description that clearly explains the concept and details of the drawing.*
Timeliness of Submission	*Portfolio is submitted on time in Week 22 as specified.*	*Portfolio is submitted slightly late, within a few days after the deadline.*	*Portfolio is submitted well after the deadline or not submitted.*	*Full: Portfolio is submitted at the beginning of Week 22, adhering to the project timeline.*

Criteria	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Organisation and Presentation	*Portfolio is exceptionally well-organised, with drawings and descriptions neatly arranged and easy to navigate.*	*Portfolio is organised but could be enhanced in terms of neatness or logical arrangement.*	*Portfolio is poorly organised, making it difficult to review the contents effectively.*	*Full: Drawings and descriptions are organised chronologically from Week 3 to 17, each section clearly divided and easy to access.*
Quality of Descriptions	*Descriptions are well-written, concise, and effectively communicate the details and purposes of each drawing.*	*Descriptions generally convey the necessary information but may lack clarity or conciseness.*	*Descriptions are poorly written, unclear, or do not adequately explain the drawings.*	*Full: Descriptions not only specify the technical aspects of each drawing but also include insights into the choice of design and technique.*

PLC SESSION 3: Principles of Perspective Drawing and Proportion in Designing

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 2* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 2* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 3* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 3* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 3* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **individual practical assessment** (NTS 3k, 3p).

E.g.

Sit under the shade of a tree and sketch an observed interesting scene making use of perspective, proportion and rendering.

Refer to the Teacher Manual pages 22-25 and Learner Material section 1 for additional questions

Hint

Resources needed for this assessment

a) *Sketch pad*

b) *Pencils of different grades (HB and B grades) properly sharpened*

c) *Eraser*

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) *Ability to draw in perspective (e.g. one point or two points) – 4 marks*

b) *Ability to show related objects in proportion (e.g.a human being and a car should not be of the same size or height) – 4 marks*

c) *Ability to use rendering technique properly (e.g. stippling, scribbling, hatching – 5 marks*

d) *Resemblance of the scene – 2 marks*

e) *Quality of lines – 2 marks*

f) *Ability to manage drawing surface(paper) – 2 marks*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

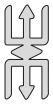
Ensure that the location for the assessment is secured and well organised ahead of time, etc.

Refer to Teacher Assessment Manual and Toolkit pages 46-49 for further information on the assessment strategy

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Drawings should be collected, scored and feedback given in reference to the areas of assessment at the next meeting, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 3 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 4 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 4* in preparation for the next session (NTS 3a).

PLC SESSION 4: Object Manipulation and Manipulation Techniques in Freehand Drawing

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 3* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 3* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 4* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 4* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 4* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **homework** (NTS 3k, 3p).

E.g.

Create a table/chart of at most five tools that can be used in object manipulation in freehand drawing.

Refer to the Teacher Manual pages 29-32 and Learner Material Section 1, for additional task

Hint

It is recommended that teachers give learners an individual homework in the 4th week to be submitted in 7th week.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) *Creating a table/chart of tools with at least 5 tools that can be used in object manipulation in freehand drawing (e.g. pencil, pen, maker, etc – 1 mark for each tool)*

b) *For explaining the concept of object manipulation and manipulation techniques in freehand drawing (Object manipulation in freehand drawing is representing objects or generating designs without using tools like templates or rulers. Manipulation techniques are ways in which the drawings are made or presented, e.g. contour drawing, shading techniques, negative space drawing, etc.) – 5 marks*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n–3p).

E.g.

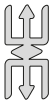
Instructions should be typed, projected, dictated or written on the board, etc.

Refer to Teacher Assessment Manual and Toolkit pages 27–31 for further information on the assessment strategy

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

Collect the work from learners, score and discuss the appropriate answers with learners, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 4 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the

b) required format and document where appropriate (NTS 3l–3n).

c) read PLC Session 5 and related Learner Material (NTS 3a).

d) bring along your Teacher Manual, PLC Handbook and learning plan on *week 5* in preparation for the next session (NTS 3a).

PLC SESSION 5: Tools and Techniques Used to Manipulate Specific Objects Through Freehand Drawing

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 4* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 4* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 5* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 5* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 5* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **practical** (NTS 3k, 3p).

E.g.

Use the available tools and techniques to manipulate simple forms and shapes through freehand drawing to come out with an idea.

Refer to Teacher Manual pages 33-38 and Learner Material section 1 for additional tasks

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Sample of rubrics

Criteria	Marks	Description	Examples of Expected Responses
Use of Tools and Techniques	*10*	*Demonstrates the effective use of drawing tools and techniques to manipulate shapes and forms.*	*Effectively uses pencils and erasers to adjust form and contour, demonstrating various shading techniques.*
Creativity in Form Manipulation	*10*	*Exhibits creativity and originality in manipulating basic shapes into a cohesive and imaginative idea.*	*Combines circles and squares in a unique way to conceptualise a modern architectural design.*
Application of a Shading Technique	*10*	*Applies at least one of the stated shading techniques effectively to render the created object, demonstrating skill and understanding of the technique.*	*Uses cross-hatching to render the object, showing effective texture and depth in the areas of shadow.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

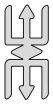
Describe the step-by-step process in detail including how to control extraneous factors, along with any safety precautions, etc.

Refer to Teacher Assessment Manual and Toolkit pages 46-49 for further information on the assessment strategy

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Highlight on the strengthens and areas needing improvement, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 5 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 6 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 6* in preparation for the next session (NTS 3a).

PLC SESSION 6: Preparing for Mid-Semester Examination

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for week 5 delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for week 5 that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 6 lessons and mid-semester examination* by aligning the learning plan with Learner Material and appropriate assessment strategies.

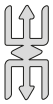
Learning Outcome

Review your learning plan for week 6 *and prepare for mid-semester examination* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching week 6 in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan.(NTS 2a – 2f, 3a – 3j)



Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **mid-semester examination** (NTS 3k, 3p)

E.g.

a) ***Essay: Answer any 2 questions out of the 5 questions.***

Explain the following:

i. *Line quality/weight.*

ii. *Line consistency*

b) ***Practical Question:***

Select two basic shapes and use them to create an object. Use two or more rendering techniques to render the object created

Refer to the Teacher Manual weeks 1-5 and Learner Material Section 1 for more task examples.

*Refer to **Appendix B** for a sample of the table of specification*

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) ***Essay- 20 marks***

Criteria: *Look out for the bolden words- each word is 1 mark*

i. *Line quality/weight*

*Line quality is a term used in art to describe the **thinness** or **thickness** of a line. Line quality can suggest different effects, such as **value, texture, depth, material, lighting and weight**. Line quality can make drawings look more **realistic, expressive and readable**.**[10 marks]***

ii. *Line consistency*

*Refers to how **closely related** the elements (lines) within a **design or composition** are in terms of their **visual characteristics**. When creating visual art, graphic design, or other visual compositions, **maintaining consistent lines** can significantly impact the overall **aesthetic and readability**.**[10 marks]***

b) ***Practical- 40 marks***

i. *For selecting 2 basic shapes. – 2.5 marks each x 2 =* ***5 marks***

ii. *For creating an object using the basic shapes –* ***10 marks***

iii. *For rendering with two techniques –* ***10 marks***

iv. *For quality / weight of line –* ***5 marks***

v. *For consistency of line –* ***4 marks***

vi. *For good use of working area/surface –* ***3 marks***

vii. *For neatness -* ***3 marks***

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Ensure materials for the examination are ready before the actual time for the examination, etc.

Refer to Teacher Assessment Manual and Toolkit pages 94-97 and 41-43, for more information on how to administer this assessment.

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Give a copy of the marking scheme to learners to serve as a guide for corrections, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 6 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 7 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week* 7 in preparation for the next session (NTS 3a).

Appendix B: Table of Specification for Mid-Semester Examination

Weeks	Focal Area(s)	Question Type	DoK Levels				Total
			1	2	3	4	
1	Concept Sketches	*Essay*	1	1			2
	Basic Shapes, Forms and Rendering Techniques in Designing	*Essay*	1				1
		Practical		1			1
3	Principles of Perspective Drawing and Proportion in Designing	*Essay*		1			1
4	Object Manipulation and Manipulation Techniques in Freehand Drawing	*Essay*			1		1
5	Tools and Techniques Used to Manipulate Specific Objects Through Freehand Drawing	*Practical*			1		1
	Total		2	3	2		7

PLC SESSION 7: Templates and Patterns

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 6* and mid-semester examination that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 6* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 7* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 7* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 7* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **research** (NTS 3k, 3p).

E.g.

Visit a local artist to research into the following and write a report on your findings for presentation in class.

i. *Templates and patterns*

ii. *Five sources and uses of templates and patterns in the community and the country.*

iii. *Reasons why existing templates and patterns in the community were created.*

Refer to the Teacher Manual pages 44–54 and Learner Material section 1 for more tasks

Inform learners to add the report to their portfolio work.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Sample of rubrics for scoring

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Definition of Templates	*Provides a clear, accurate definition of templates and illustrates this with specific examples from the research.*	*Provides a basic definition of templates but lacks clarity or detail in examples.*	*Fails to define templates or provides an incorrect definition.*	*A template is a predesigned pattern or framework used to streamline the creation of consistent documents or structures. For example, a pottery template ensures all pieces have the same shape and size.*

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Research of Sources and Uses	*Identifies and explains more than five sources and uses of templates and patterns in the community and country, with detailed examples.*	*Identifies exactly five sources and uses, but with limited explanation or detail.*	*Fails to identify five sources and uses or provides incorrect or irrelevant information.*	*Sources like local craft shops, schools, and construction businesses; uses in creating uniform products, educational tools, and building designs.*
Clarity and Organisation of Report	*Report is exceptionally well-organised, clear, and coherent, making it easy to follow and understand.*	*Report is organised and clear but could be improved in terms of structure or flow.*	*Report is poorly organised, difficult to follow, or lacks coherence.*	*Full: 'The report is divided into sections with headings for each type of template and pattern, including an index and glossary.'*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Responses can include oral responses, freehand drawings, annotated drawings, images, photographs and written responses, etc.

Refer to Teacher Assessment Manual and Toolkit pages 77-78 for further information on the assessment mode.

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Discuss with learners' areas of the report they needs improve, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

2.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 7 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 8 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 8* in preparation for the next session (NTS 3a).

PLC SESSION 8: Design and Creation Processes of Templates and Patterns

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 7* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 7* that supported learning (NTS 2e, 2 and, 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 8* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 8* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 8* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **poster** (NTS 3k, 3p).

E.g.

Prepare a poster presentation describing how designers have used tools, materials and techniques to create existing templates and patterns. Consider a minimum of four popular templates and patterns. Photographs and drawings should form part of the work. The poster can either be softcopy (power point) or hardcopy (on manila card).

Refer to the Teacher Manual pages 55–58 and Learner Material section 1 for more tasks.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Criteria	Full Marks	Description	Examples of Expected Responses
Identification of Templates and Patterns	*4 marks*	*For identifying 4 existing templates and patterns such as Gye Nyame, Aya, Funtumfunafu denkyemfunafu, Akofena.*	*Identifies each template and provides a brief description of its significance and origin.*
Tools Used	*3 marks*	*For picking each template and identifying 3 tools used in their creation like a knife, gouges, file mallet, chisel.*	*Lists tools used for each template and briefly describes how each tool is used in the process.*
Materials Used	*2 marks*	*For identifying a material used in each template's creation such as calabash, wood, cotton, ink.*	*Specifies the material used for each template and explains why it is chosen based on its properties.*
Techniques Described	*5 marks*	*Describing the techniques used in creating each template, like Stamping, Printing, Spraying.*	*Detailed explanation of the techniques involved in the creation of each template, including any specific methods or artistic touches.*

Criteria	Full Marks	Description	Examples of Expected Responses
Organisation of Poster	*3 marks*	*Organisation and layout of the poster, whether it is easy to follow and visually appealing.*	*The poster is well-organised with clear sections for each template, visually balanced and easy to navigate.*
Use of Visuals	*3 marks*	*The use of photographs/ drawings and annotations to enhance the presentation and understanding of the templates.*	*Includes relevant, clear photographs or drawings for each template with annotations that highlight key features or techniques.*
Oral Presentation Skills	*5 marks*	*Ability to present the poster orally, conveying the information clearly and engagingly.*	*Presents confidently, clearly articulating the relationship between tools, materials, and techniques in creating the templates, engages audience with relevant questions or comments.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Clearly communicate the learning outcome, requirements, and assessment criteria to the learners, etc.

Refer to Teacher Assessment Manual and Toolkit pages 97-99 for more information on the mode of assessment

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Guide learners to identify areas which needs improvements, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 8 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 9 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 9* in preparation for the next session (NTS 3a).

PLC SESSION 9: Designing and Creating 2-Dimensional Templates and Patterns as Intervention

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for week 8 delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for week 8 that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for week 9 by aligning the learning plan with Learner Material and appropriate assessment strategies.

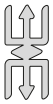
Learning Outcome

Review your learning plan for week 9 considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching week 9 in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **multiple choice** (NTS 3k, 3p).

E.g.

Which of the following is the best approach to prepare a presentation on creating a copy of an existing template or pattern design using appropriate tools, materials, and techniques?

A. *Select a random template and describe general tools and materials without specific techniques.*

B. *Choose a complex template and use advanced tools and materials not discussed in class.*

C. *Identify a specific template or pattern, detail the tools and materials used, and explain the techniques necessary for replication.*

D. *Focus solely on the theoretical aspects of pattern design without practical examples.*

Refer to the Teacher Manual pages 59-60 and Learner Material section 1 for further task.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Correct Answer: ***C*** *– 1 mark*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

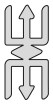
Administer constructed MCQs in a controlled environment to prevent cheating, etc.

Refer to Teacher Assessment Manual and Toolkit pages 83-85 for further information on assessment mode.

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Provide constructive feedback to the learners based on observations, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 9 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 10 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 10* in preparation for the next session (NTS 3a).

PLC SESSION 10: Design Thinking Process

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 9* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 9* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 10* by aligning the learning plan with Learner Material and appropriate assessment strategies.

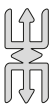
Learning Outcome

Review your learning plan for *week 10* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 10* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **individual project** (NTS 3k, 3p).

E.g.

a) *Identify a situation/problem in the school environment and write a problem statement on it.*

b) *Use the design process to solve the problem starting from the identification of the situation/problem to generation of final solution.*

c) *Build a portfolio for this project where all works done will be kept.*

Refer to the Teacher Manual pages 63–65 and Learner Material section 1 for further tasks.

Hint

The task in this session can be assigned to learners as an individual project work. Learners are to submit this project in week 20.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)
Problem Identification	*Clearly identifies and describes a specific, relevant problem in the school environment with detailed justification.*	*Identifies a problem with some description and minimal justification.*	*Fails to identify a relevant or clear problem in the school environment.*
Problem Statement	*Articulates a concise and clear problem statement that clearly outlines the issue and its impact on the school.*	*Provides a problem statement that describes the issue but lacks clarity or detail on impact.*	*Provides an unclear or incorrect problem statement that does not effectively outline the issue.*

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)
Design Process Application	*Demonstrates a thorough application of the design process from problem identification through to solution generation, well-documented at each stage.*	*Uses the design process with basic documentation but misses some details in the application.*	*Fails to apply or document the design process correctly or completely.*
Solution Effectiveness	*Proposes a creative, practical solution that effectively addresses the identified problem with evidence of potential impact.*	*Proposes a solution that addresses the problem but is either not creative or only partially practical.*	*Proposes an ineffective or irrelevant solution that does not address the problem.*
Portfolio Organisation	*Portfolio is excellently organised, includes all project stages and documentation, and is easy to review.*	*Portfolio includes most stages and documents but lacks some organisation or completeness.*	*Portfolio is poorly organised or missing significant documentation.*
Presentation Quality	*Presentation is engaging, clearly communicates the problem, the used process, and the solution, demonstrating deep understanding.*	*Presentation communicates the main points but lacks engagement or some details of the process or solution.*	*Presentation is poorly executed, unclear, or fails to adequately convey the project's details.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Provide necessary resources, materials, and support to help learners succeed in their projects, etc.

Refer to Teacher Assessment Manual and Toolkit pages 34-37 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

Highlight the areas that needs improvements, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 10 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 11 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 11* in preparation for the next session (NTS 3a).

PLC SESSION 11: Design Brief

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 10* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 10* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 11* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 11* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 11* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **case study (group)** (NTS 3k, 3p).

E.g.

Study the problem statement below and write a design brief on it.

Mensah-Krom Basic School is located right across the principal street of the community. Vehicles frequently move on the road making it very difficult for students to cross. They have to stay for a long time before crossing. Several students were involved in vehicular accident in front of the school. This has informed parents' decision to withdraw their wards from the school.

Refer to the Teacher Manual pages 66-67 and Learner Material section 1 for further task.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Problem Identification	*Clearly identifies the traffic safety issue, providing detailed context of the problem and its impact on students and parents.*	*Identifies the traffic safety problem with some context but lacks detailed impact analysis.*	*Fails to identify or provide clear context for the traffic safety issue.*	*Full: Identifies the high frequency of accidents involving students due to poor road crossing facilities.*
Analysis of Causes	*Provides a thorough analysis of the causes of the traffic safety issues, supported by specific observations or data.*	*Provides a basic analysis of the causes but lacks detail or significant data support.*	*Provides inadequate or incorrect analysis of the causes.*	*Full: Links the traffic issues to specific peak times coinciding with school start and end times, and lack of pedestrian crossings.*

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Solution Proposals	*Proposes multiple practical and effective solutions with a clear plan for implementation that directly addresses the safety issues.*	*Proposes at least one practical solution but lacks a detailed implementation plan or scope.*	*Proposes solutions that do not effectively address the traffic safety issues or are impractical.*	*Full: Proposes the installation of speed bumps, pedestrian signals, and crossing guards during school hours.*
Impact Evaluation	*Provides a detailed evaluation of the potential impact of proposed solutions, including clear benefits and possible challenges.*	*Provides a basic evaluation of the potential impact but lacks details on benefits or challenges.*	*Provides no evaluation or an unrealistic assessment of the impact of proposed solutions.*	*Full: Discusses how the proposed solutions will reduce the risk of accidents and decrease parental concerns, with consideration of maintenance costs and community acceptance.*
Use of Evidence	*Makes excellent use of relevant evidence such as traffic studies, accident reports, or parent surveys to support findings and solutions.*	*Uses some evidence to support findings but may not be comprehensive or fully relevant.*	*Uses little to no relevant evidence to support conclusions.*	*Full: Cites traffic flow data from local government studies and results from a survey of parents' concerns about road safety.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group.(NTS 3n-3p).

E.g.

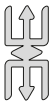
Create and maintain a sound environment for the case study discussion, etc.

Refer to Teacher Assessment Manual and Toolkit pages 31-34 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

Discuss the findings of learners in a whole class discussion and assist them to finetune their problem statement, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 11 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 12 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 12* in preparation for the next session (NTS 3a).

PLC SESSION 12: Preparing for End of Semester Examination

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 11* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 11* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 12 lessons and end of semester examination* by aligning the learning plan with Learner Material and appropriate assessment strategies.

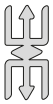
Learning Outcome

Review your learning plan for *week 12 and prepare for end of semester examination* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 12* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **end of semester examination** (NTS 3k, 3p).

E.g.

a) ***Sample of multiple-choice question***

Which of the following lines depicts a sense of movement, tension and excitement?

A. *Diagonal line*

B. *Horizontal line*

C. *Vertical*

D. *Zig-zag line*

b) ***Sample of essay question – select 5 questions out of the 8 questions***

State four reasons why sketches are important in the design process.

Refer to the Teacher Manual pages 13-67, Learner Material section 1 for further task.

*Refer to **Appendix C** for table of specification*

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) ***Multiple Choice Question*** *-40 marks (1 mark each x 40)*

Correct answer: A – 1 mark

b) **Essay**

1 mark each – for stating four reasons why sketches are important in the design process like

i. *Idea Visualisation*

ii. *Communication*

iii. *Iteration*

iv. *Problem-solving*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

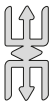
Materials for examination must be made ready before the day of examination, etc.

Refer to Teacher Assessment Manual and Toolkit pages 16, 41 and 83 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Give out the marked scripts to learners and discuss the questions with them to enable them to know their performance, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 12 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 13 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 13* in preparation for the next session (NTS 3a).

Appendix C: Table of Specification for End of Semester Examination

Week	Focal Area	Question Type	DoK Levels				Total
			1	2	3	4	
1	Concept Sketches	*Multiple choice*	2	2			**4**
		Essay		1			**1**
2	Basic Shapes, Forms and Rendering Techniques in Designing	*Multiple choice*	2	2			**4**
3	Principles of Perspective Drawing and Proportion in Designing	*Multiple choice*	2	2			**4**
4	Object Manipulation and Manipulation Techniques in Freehand Drawing	*Essay*			1		**1**
5	Tools and Techniques Used to Manipulate Specific Objects Through Freehand Drawing	*Multiple choice*	2	2			**4**
6	Concept, Symbolism, Metaphors, and Narratives Associated with Objects and Shapes	*Multiple choice*	2	3			**5**
7	Templates and Patterns	*Multiple choice*	2	2			**4**
		Essay			1		**1**
8	Design and Creation Processes of Templates and Patterns	*Multiple choice*	2	2			**4**
		Essay		1			**1**
9	Designing and Creating 2-Dimensional Templates and Patterns as Intervention.	*Multiple choice*	2	2			**4**
10	Design Thinking Process	*Multiple choice*	2	2			**4**
11	Design Brief	*Multiple choice*	1	2			**3**
		Essay			1		**1**
	Total		**19**	**23**	**3**		

PLC SESSION 13: Plane Geometrical Figures

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 12* and end of semester examination that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 12* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 13* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 13* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 13* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **e-assessment** (NTS 3k, 3p).

E.g.

Click on link or Scan this QR code to access the task

Refer to the Teacher Manual pages 72–73 and Learner Material section 2 for further task.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) *Ability to identify four geometrical figures (e.g. square, rectangle, pentagon rhombus, etc.) -1 mark each x 4= 4 marks*

b) *Ability to list a property each (e.g. a square has four straight sides, four angles measuring 90^0 each, its diagonals bisect each other, etc.) -1 mark each x 4=4 marks*

c) *For stating a real life application each a geometrical figure(e.g. a square is used to design surfaces of tables, etc.)- 2 marks each x 4 = 8 marks*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21^{st} century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

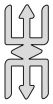
Ensure screen readers are activated on devices learners with SEN will be use using, etc.

Refer to Teacher Assessment Manual and Toolkit pages 62–66 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

Clarify any misconception that may come up, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 13 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 14 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 14* in preparation for the next session (NTS 3a).

PLC SESSION 14: Using Ratio to Enlarge and Reduce Plane Geometrical Figures

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 13* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 13* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 14* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 14* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 14* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **questioning** (NTS 3k, 3p).

E.g.

Can you describe the steps to construct an equilateral triangle with each side measuring 60 units, and then enlarge it using a ratio of 5:3?

Refer to the Teacher Manual pages 74-77 and Learner Material section 2 for further task.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

If description(s) has any of the key highlighted works, mark as correct

a) *For choosing **a pole** outside the object or within the object or on the vertex – 1 mark*

b) *For **extending a line from the pole** and **dividing it into the required number** of equal parts and numbering (5) – 2 marks*

c) *For **joining the point 3 to a vertex** of the object – 2 marks*

d) *For extending **point 5 parallel** to the one from 3 – 2 marks*

e) *For completing the **enlarged triangle** – 2 marks, etc.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

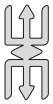
Ask one question at a time and wait for responses from learners to allow time to think through responses critically, etc.

Refer to Teacher Assessment Manual and Toolkit pages 97–99 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

Guide learners to the correct, if their description is wrong by asking tailoring questions, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 14 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 15 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 15* in preparation for the next session (NTS 3a).

PLC SESSION 15: Blend Circles and Lines with Arcs

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 14* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 14* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 15* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 15* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 15* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **class exercise** (NTS 3k, 3p).

E.g.

Figure 1 below shows a mechanical component, use the principles of blending of arcs and circles to draw the component to full size

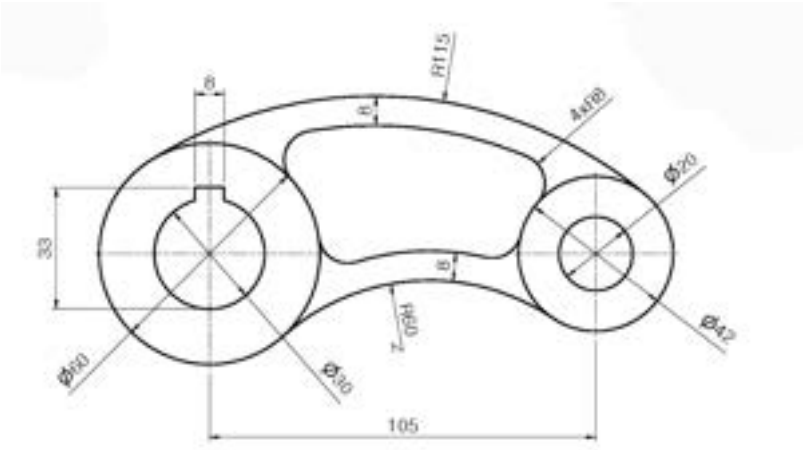


Figure 1

Refer to the Teacher Manual pages 78–81 and Learner Material section 2 for further tasks.

Hint

It is recommended that teachers give learners an individual class exercise in week 15. Ensure the test items cover the DoK levels and inform learners about the exercise ahead of time.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) *For constructing 2 external circles with 105 centres apart – 1 mark*

b) *For constructing two internal circles – 1 mark*

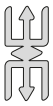
c) *For constructing the arc above – 2 marks*

d) *For constructing the arc below – 2 marks*

e) *For adding the 8 thickness to the arcs – 2 marks*

f) *For constructing the keyway – 1 mark*

g) *For quality of lines and neatness – 1 mark*



Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

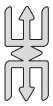
Set a reasonable time frame for completion of exercises to maintain focus and efficiency, etc.

Refer to Teacher Assessment Manual and Toolkit pages 80-83 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Evaluate the assessment outcome based on the assessment criteria with the learners, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 15 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 16 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 16* in preparation for the next session (NTS 3a).

PLC SESSION 16: Blend Circles and Lines with Arcs

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 15* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 15* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 16* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 16* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 16* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **group project** (NTS 3k, 3p).

E.g.

In pairs, design a water bottle for a water bottling company based on the knowledge acquired in designing and blending of lines and circles with arcs.

Refer to the Teacher Manual pages 82–83 and Learner Material section 2 for further tasks.

Hint

The assessment task in this session can be assigned to learners as a group project. The project should be submitted in week 19 and should form part of their portfolio.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Creativity in Design	*Design is highly creative, demonstrating innovative use of lines, circles, and arcs to create a unique water bottle.*	*Design shows use of geometric shapes but lacks full creativity or innovation.*	*Design is uninspired or improperly uses geometric shapes.*	*Full: Utilises a combination of arcs and smooth lines to create an ergonomic and visually striking water bottle design.*
Functionality and Ergonomics	*Water bottle is exceptionally functional and ergonomic, enhancing usability and comfort.*	*Functionality and ergonomics are addressed but could be improved for better usability.*	*Design lacks functionality and ergonomic consideration.*	*Full: Features a contoured design that fits comfortably in the hand, with a non-slip grip integrated into the bottle's lower half.*

Aspect	Full Marks (5 points)	Partially Correct (3 points)	Incorrect (0 points)	Examples of Expected Responses
Aesthetic Appeal	*Aesthetically outstanding, with a visually pleasing integration of lines, circles, and arcs.*	*Visually appealing but lacks a cohesive integration of geometric elements.*	*Aesthetic appeal is lacking or geometric designs are poorly integrated.*	*Full: The design includes a visually appealing pattern of interlocking circles that also enhances grip.*
Technical Accuracy	*Demonstrates precise and accurate use of geometric shapes with correct dimensions and scaling.*	*Generally accurate but includes minor errors in dimensions or scaling.*	*Significant inaccuracies in the use of geometric shapes or scaling.*	*Full: All dimensions are meticulously calculated to ensure the water bottle's stability and volume capacity.*
Presentation Quality	*Presentation is clear, concise, well-organised, and effectively communicates the design concept.*	*Presentation is adequate but could be more engaging or better organised.*	*Presentation is poorly organised, unclear, or fails to communicate effectively.*	*Full: The final presentation includes a well-prepared slide deck that clearly outlines the design process, with prototypes displayed.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Define specific tasks to be undertaken in developing the project, etc.

Refer to Teacher Assessment Manual and Toolkit pages 34-37 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Guide learners to identify the areas that needs improvement, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 16 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 17 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 17* in preparation for the next session (NTS 3a).

PLC SESSION 17: Constructing an Ellipse as a Plane Geometrical Figure

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 16* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 16* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 17* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 17* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 17* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **peer assessment** (NTS 3k, 3p).

E.g.

Assess your colleague's work on "construct an Archimedean spiral of radius 75mm."

Refer to the Teacher Manual pages 84–88 and Learner Material section 2 for further tasks.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

S/N	Criteria	Full mark 5 marks	Partial mark 3 marks	Needs improvement 2 marks
1	Circle is drawn to the given radius.			
2	The circle is divided into a number of equal parts say 8 or 12.			
3	A radius is divided into the same equal parts as the circle.			
5	The divisions on the radius are used as radii to draw arcs to intersect their corresponding lines.			
6	Points of intersections have been located.			
7	The spiral is completed with a smooth curve passing through the points of intersections identified.			
8	The spiral is in thick line whilst the other lines are thin.			

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Monitor learners to award fair marks, etc

Refer to Teacher Assessment Manual and Toolkit pages 91-94 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Ensure learners to critically accept areas where their colleagues have noticed their need improvement, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 17 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 18 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 18* in preparation for the next session (NTS 3a).

PLC SESSION 18: Preparing for Mid-Semester Examination

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 17* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 17* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 18 lessons and mid-semester examination* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 18 and prepare for mid-semester examination* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 18* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **mid-semester examination** (NTS 3k, 3p).

E.g.

Essay: *5 questions should be given for learners to answer any 3.*

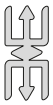
A rectangular table surface has the length of 100 and the breadth to 70.Convert it graphically into a square of equal area and find the length of side.

Refer to Teacher Manual pages 72-95 and Learner Material section 2 for further task.

Hint

a) *Refer to **Appendix D** for a sample of the table of specification*

b) *Remind learners about the submission of the group project work*



Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Task	Criteria for Full Marks	Criteria for Partial Marks	Criteria for No Marks
Drawing rectangle ABCD	*Rectangle is accurately drawn with straight lines and right angles.- 4 marks*	*Rectangle shape is recognisable but may have slightly skewed angles or uneven sides.- 2 marks*	*Rectangle is poorly drawn or not recognisable.- 0 marks*
Drawing arc with B as centre	*Arc is correctly drawn with B as centre and radius BC, intersecting AB extension at E accurately.- 2 marks*	*Arc is drawn but does not accurately intersect AB extension at E.- 1 mark*	*Arc is incorrectly drawn or not drawn from B-- 0 marks*
Bisecting AE at F	*Line segment AE is accurately bisected at F.- 2 marks*	*Bisector is placed but not precisely at the midpoint of AE.- 1 mark*	*Bisector is incorrectly placed or not at AE.- 0 marks*
Drawing semi-circle with F as centre	*Semi-circle is correctly drawn with F as centre and radius FA, completing the semi-circle shape.- 2 marks*	*Semi-circle is drawn but shape or radius is slightly inaccurate.- 1 mark*	*Semi-circle is incorrectly drawn or not centred at F.- 0 marks*

Task	Criteria for Full Marks	Criteria for Partial Marks	Criteria for No Marks
Extending BC to intersect semi-circle	*Line BC is correctly extended to intersect the semi-circle at E.- 2 marks*	*Line extension reaches the semi-circle but does not intersect at the correct geometric point.- 1 mark*	*Line is not extended or does not intersect the semi-circle.- 0 marks*
Picking BE as a side for the square	*BE is correctly chosen based on accurate geometric reasoning and used as the side of the square to complete the design.- 6 marks*	*BE is used as the side of the square, but with minor errors in positioning or alignment.- 3 marks*	*BE is incorrectly chosen or not used to complete the square.- 0 marks*
Accuracy and quality of lines	*Lines are straight, clear, and precisely drawn with consistent quality across the task.- 2 marks*	*Lines are mostly straight and clear but may vary slightly in quality or precision.-1 mark*	*Lines are poorly drawn, unclear, or inconsistently executed.- 0 marks*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Ensure materials for the examination are ready before the actual time for the examination, etc.

Refer to Teacher Assessment Manual and Toolkit pages 16 & 83 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Note the common mistakes in the examination and discussion or provide remedials for learners, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 18 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 19 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 19* in preparation for the next session (NTS 3a).

Appendix D: Table of Specification for Mid-Semester Examination

Weeks	Focal Area(s)	Question Type	DoK Levels				Total
			1	2	3	4	
13	Plane Geometrical Figures	*Essay*			2		2
		Practical					
14	Using Ratio to Enlarge and Reduce Plane Geometrical Figures	*Essay*		1			1
15	Blend Circles and Lines with Arcs	*Essay*			1		1
16	Blend Circles and Lines with Arcs	*Practical*			1		1
17	Constructing an Ellipse as a Plane Geometrical Figure	*Essay*		1			1
		Practical				1	1
	Total			4	4	1	7

PLC SESSION 19: Constructing Objects in Isometric and Oblique

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 18* and mid-semester examination that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 18* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 19* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 19* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 19* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

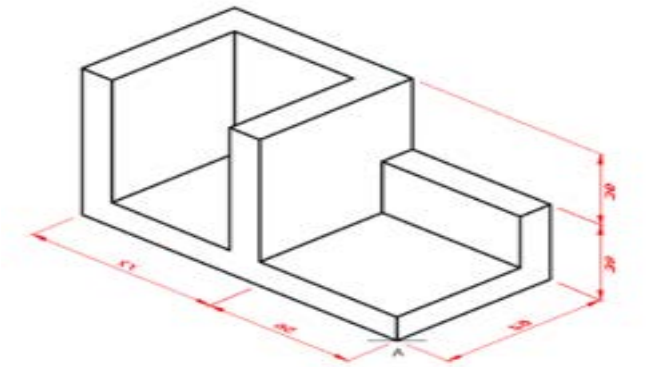
Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **peer assessment** (NTS 3k, 3p).

E.g.

Construct the isometric block below with appropriate drawing instruments



Refer to the Teacher Manual pages 94–95 and Learner Material section 2 for further task.

Hint

a) *Submission of group project work*

b) *Remind learners about the submission of their individual project*

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g. Share this rubric with learners to use to score their peers

Task	*Criteria for Full Marks*	*Criteria for Partial Marks*	*Criteria for No Marks*	*Score your peer here*
Drawing Isometric Axis	*Axes are correctly drawn with accurate angles representing all three dimensions (120° between each) – 2 marks*	*Axes are drawn but angles are slightly incorrect or not cleanly executed. – 1 mark*	*Axes are incorrectly drawn or missing. – 0 marks*	

Task	Criteria for Full Marks	Criteria for Partial Marks	Criteria for No Marks	Score your peer here
Drawing Each of the Faces	Each face is drawn correctly, aligned accurately with the isometric axes, and matches the specified dimensions -0.5 mark per face	Faces are recognisable but may have minor alignment or dimension errors.- 0.25 mark per face	Faces are incorrectly drawn, significantly misaligned, or not drawn at all.- 0 marks per face	
Accuracy in Measurement	All dimensions are accurate within the tolerance specified for the drawing, with precise execution.- 2 marks	Measurements are generally accurate but have minor deviations outside specified tolerances.- 1 mark	Measurements are inaccurate, affecting the overall scale and proportions of the drawing.- 0 marks	
Neatness and Quality of Line	Lines are consistently straight, clear, and of uniform thickness appropriate for isometric drawing.- 1.5 marks	Lines are mostly neat but may vary in thickness or clarity, slightly affecting the visual quality of the drawing.- 0.75 marks	Lines are messy, unclear, or vary widely in thickness, significantly detracting from the readability of the drawing.- 0 marks	

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

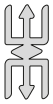
Lead the pairing or grouping for the assessment. In doing this, consider mixed groupings and avoid inter pairing and pairing amongst friends, etc.

Refer to Teacher Assessment Manual and Toolkit pages 91-94 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Encourage learners to redo the work for their peers to re-assess them, etc.



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 19 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

b) read PLC Session 20 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 20* in preparation for the next session (NTS 3a).

PLC SESSION 20: Perspective Drawing

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 19* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 19* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 20* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 20* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 20* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

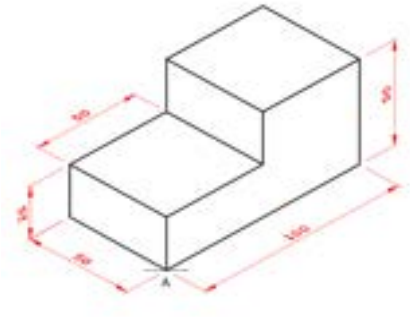
Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **critiquing** (NTS 3k, 3p).

E.g.

Critique your peer's construction of the isometric blocks in one-point and two-point perspectives.



Refer to the Teacher Manual pages 96-97 and Learner Material section 2 for further task.

Hint

Submission of individual project work

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Criteria	Excellent (5 points)	Satisfactory (3 points)	Needs Improvement (1 point)
Accuracy of Perspectives	*Correctly identifies and praises the accurate use of one-point and two-point perspectives in the peer's construction.*	*Identifies basic use of perspectives but overlooks some inaccuracies or details.*	*Fails to correctly identify or critique the use of perspectives.*

Criteria	Excellent (5 points)	Satisfactory (3 points)	Needs Improvement (1 point)
Constructive Feedback	*Provides specific, constructive feedback that helps the peer understand how to improve their construction techniques.*	*Gives general feedback that is somewhat helpful but lacks detail or specificity.*	*Feedback is vague, unhelpful, or missing.*
Positive Reinforcement	*Highlights specific strengths in the peer's work, encouraging further development of those skills.*	*Mentions strengths but without detail or clear connection to specific aspects of the work.*	*Little to no recognition of strengths, or irrelevant praises.*
Clarity and Communication	*Communicates feedback clearly and respectfully, making it easy for the peer to understand and act upon.*	*Feedback is understandable but could be expressed more clearly or respectfully.*	*Feedback is poorly communicated, confusing, or disrespectful.*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Comment on the clarity and organisation of learners' work, etc.

Refer to Teacher Assessment Manual and Toolkit pages 74-77 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Offer help or intervention in areas learners need help, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 20 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 21 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 21* in preparation for the next session (NTS 3a).

PLC SESSION 21: Surface Development of Prisms

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 20* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 20* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 21* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 21* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 21* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

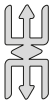
The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **homework** (NTS 3k, 3p).

E.g.

Construct the surface development of a rectangular prism of sides 30 by 50 and height 80

Refer to the Teacher Manual pages 98-100 and Learner Material section 2 for further tasks.



Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) *For drawing front elevation and plan of the prism – 2 marks*

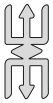
b) *For drawing in orthographic projection (1st or 3rd angle) – 1 mark*

c) *For projecting 2 horizontal lines from the front to the side plane – 1 mark*

d) *For picking the sides in plan and marked on lines projected – 2 marks*

e) *For projecting 5 vertical lines no the developed surface – 2.5 marks*

f) *For quality of lines and neatness – 1.5 marks*



Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

a) *Adapt to the needs of diverse learners especially those with special needs*

b) *Provide Resources such as textbooks, online materials, or reference materials, to support learners in completing the assignment successfully, etc.*

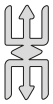
Refer to Teacher Assessment Manual and Toolkit pages 57–60 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l–3n).

E.g.

a) *Reflect on the outcomes of the assignment.*

b) *Share the results of the assignment with learners, etc.*



Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 21 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 22 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 22* in preparation for the next session (NTS 3a).

PLC SESSION 22: Surface Development of Truncated Prisms.

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 21* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 21* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 22* by aligning the learning plan with Learner Material and appropriate assessment strategies.

Learning Outcome

Review your learning plan for *week 22* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 22* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).

Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **display and exhibition** (NTS 3k, 3p).

E.g.

Construct the surface development of a hollow pentagonal prism of sides 45mm and height 60mm truncated at a height of 18mm to an angle of 30° to the base.

Refer to the Teacher Manual pages 101–103 and Learner Material section 2 for further task.

Hint

Submission of portfolio

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

S/N	Criteria	Full Mark	Partial Mark
1	*Front elevation of the prism is drawn*	3	1
2	*Plan of the prism is drawn*	2	1
3	*The vertices on the plan and front elevation have been identified either with numbers or letters*	3	1
4	*The front elevation and plan were drawn in orthographic (1st or 3rd angle)*	5	3
5	*Five horizontal lines have been projected from the front elevation.*	5	3
6	*The length of side has been picked and transferred to the horizontal lines projected to obtain 6 points and labelled.*	5	3
7	*The 6 points have been projected to intersect the horizontal lines.*	3	1

S/N	Criteria	Full Mark	Partial Mark
8	*The corresponding points of intersections of the labels on the front elevation and the base of the developed surface have been identified.*	3	1
9	*The points of intersections have been joined with straight lines to obtain the developed surface.*	2	1
10	*A clear difference has been shown between the main drawing and the constructional lines.*	3	1

For all those that will be marked yes, award each x 10 = 10 marks.

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Encourage questions and discussions to deepen understanding, etc.

Refer to Teacher Assessment Manual and Toolkit pages 72-74 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Give learners time to make corrections to submit for review, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 22 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 23 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 23* in preparation for the next session (NTS 3a).

PLC SESSION 23: Introduction to Fractal Geometry

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 22* delivered last week that:

a) went well (NTS 1a, 1b and 2a-2e).

b) you found challenging (NTS 1a, 1b and 2a-2e).

1.2 Share your experience in conducting and/or recording the assessment for the previous week.

1.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 22* that supported learning (NTS 2e, 2f and 3d-3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 23* by aligning the learning plan with Learner Material and appropriate assessment strategies.

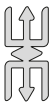
Learning Outcome

Review your learning plan for *week 23* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 23* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **checklist** (NTS 3k, 3p).

E.g.

Tick where appropriate the applications of fractal geometry

Application	Description	Correct (√)	Wrong (√)
Predicting earthquakes	*Fractal patterns are used to analyse the roughness of faults and predict seismic activities.*		
Designing computer networks	*Fractal designs help optimise the routing and scaling of network connections.*		
Crafting efficient antennas	*Fractal shapes are employed to create antennas with a wide range of frequencies and smaller sizes.*		
Modelling financial markets	*Fractals are used to model stock prices and market dynamics due to their chaotic nature.*		
Enhancing digital image compression	*Fractal algorithms reduce the size of image files while maintaining detail, making them ideal for digital image compression.*		
Generating realistic computer graphics	*Fractal geometry is used to produce textures and landscapes in video games and simulations.*		
Improving pharmaceutical designs	*Fractals are used to enhance drug delivery systems by optimising the surface area of drug particles.*		
Cooking recipes formulation	*Fractal concepts are applied in the precise formulation of cooking recipes to improve consistency and taste.*		
Creating architectural structures	*Architects use fractal geometry to design buildings and structures that are both aesthetically pleasing and structurally sound.*		
Analysing classical music compositions	*Fractals are used to analyse the patterns and structures within classical music to predict composition techniques.*		

Refer to the Teacher Manual pages 105–108 and Learner Material section 2 for further tasks.

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

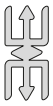
ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

Each correct choice is 1 mark

1. *Correct*
2. *Correct*
3. *Correct*
4. *Correct*
5. *Correct*
6. *Correct*
7. *Correct*
8. *Wrong*
9. *Correct*
10. *Wrong*



Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Supervise learners in a controlled environment to avoid cheating, etc.

Refer to Teacher Assessment Manual and Toolkit pages 72 - 74 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Discuss the task with learners to make corrections, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 23 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to:

a) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l–3n).

b) read PLC Session 24 and related Learner Material (NTS 3a).

c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 24* in preparation for the next session (NTS 3a).

PLC SESSION 24: Preparing for End of Semester Examination

1. Introduction (20 minutes)

1.1 Share one thing on the lesson for *week 23* delivered last week that:

a) went well (NTS 1a, 1b and 2a–2e).

b) you found challenging (NTS 1a, 1b and 2a–2e).

0.2 Share your experience in conducting and/or recording the assessment for the previous week.

0.3 Share your observation on what a colleague did by way of application of lessons learned from the previous session for *week 23* that supported learning (NTS 2e, 2f and 3d–3j).

2. Review of Learning Plans (60 minutes)

2.1 Read the purpose, learning outcome and learning indicators for the session:

Purpose

The purpose of the session is to review the learning plan for *week 24 lessons and end of semester examination* by aligning the learning plan with Learner Material and appropriate assessment strategies.

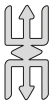
Learning Outcome

Review your learning plan for *week 24 and prepare for end of semester examination* considering the cross-cutting issues (NTS 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g–3k and 3o).

Learning Indicators

1. Review the activities in the Learner Material and identify appropriate activities based on the pedagogical approaches in the Teacher Manual that can support your lesson for the week.
2. Discuss and develop assessment tasks and rubrics/marking scheme for the learning indicators for the week.

2.2 Review the pedagogical approaches proposed for teaching *week 24* in your learning plan, identify activities that align with these in the Learner Material. Indicate the activity(ies) in your learning plan (NTS 2a – 2f, 3a – 3j).



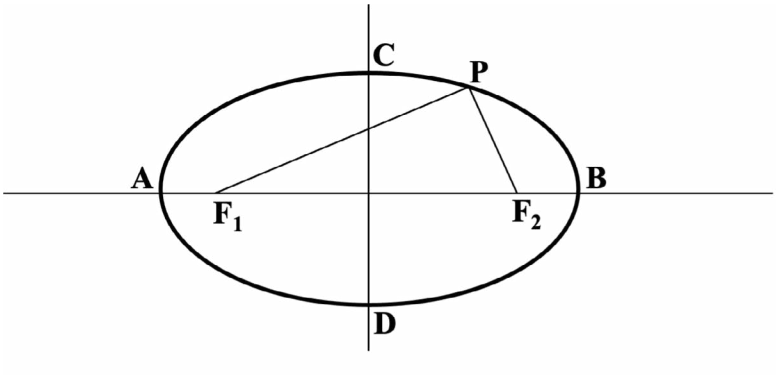
Note

The selected activities should be included in the teacher/learner activity section of the learning plan.

2.3 Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **end of semester examination** (NTS 3k, 3p).

E.g.

a) ***Sample of Multiple-Choice Question***



In the sketch above, $PF_1 + PF_2$ equals

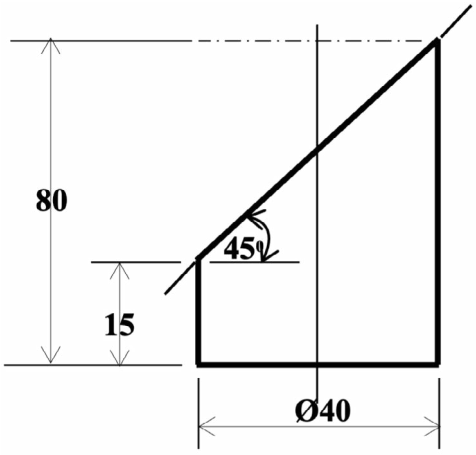
A. *AB.*

B. *CD.*

C. *½ AB.*

D. *½CD.*

b) ***Sample of Essay Question***



*The front elevation of a truncated **cylinder** is shown above*

i. *copy the elevation*

ii. *construction the true shape of the top*

iii. *draw the development of the curved surface.*

c) ***Sample of Practical Question***

i. *Using any of the solid geometrical shapes design a Dustbin to be used in the classroom*

ii. *Use shading technique to enhance your design*

Refer to the Teacher Manual pages 13–67, Learner Material section 2 for further task.

*Refer to **Appendix E** for a sample of the table of specification.*

Note

i. *The assessment tasks/items may cover levels 1 to 4 where appropriate to ensure that assessment is differentiated for all.*

ii. *The selected activities should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/learner activities of the learning plan.*

2.4 Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week's recommended assessment (NTS 3k, 3p).

E.g.

a) ***Multiple Choice Marking Scheme***

b) ***Essay Marking Scheme***

i.	*For copying the front elevation*	*–3 marks*
ii.	*For drawing the plan*	*– 3 marks*
iii.	*For constructing the true shape*	*– 6 marks*
iv.	*For constructing the development*	*– 6 marks*
v.	*For neatness and quality of lines*	*– 2 marks*

c) ***Practical Marking scheme***

i.	*For originality and creativity in the design*	*– 10 marks*
ii.	*For effective use of solid geometrical shapes*	*– 5 marks*
iii.	*For precision and neatness of lines*	*– 5 marks*
iv.	*For correct proportions and dimensions*	*– 5 marks*
v.	*For effective use of shading to enhance the design*	*– 5 marks*
vi.	*For consistency of shading*	*– 5 marks*
vii.	*For adherence to the given instructions*	*– 5 marks*
viii.	*For cleanliness and overall visual appeal*	*– 5 marks*
ix.	*For completeness of the design*	*– 5 marks*

Note

i. *The marking scheme and rubrics for scoring the assessment tasks/items should be included in the 'Assessment DoK aligned to Curriculum and TM' section below teacher/ learner activities in the learning plan.*

ii. *Take into consideration different modes of responses provided by learners.*

iii. *Discuss how you will observe and integrate character qualities, national values and 21st century skills that align with the lesson for the week and include these in your scoring.*

2.5 Discuss how you will administer the assessment task(s)/item(s) as a subject group (NTS 3n-3p).

E.g.

Materials for examination must be made ready before the day of examination, etc.

Refer to Teacher Assessment Manual and Toolkit pages 16, 41 and 83 for further information on the assessment mode

2.6 Discuss how to provide feedback, and where appropriate, record and submit the assessment scores for each learner in the class (NTS 3l-3n).

E.g.

Give out the marked scripts to learners and discuss the areas needing improvement with learners, etc.

Note

In giving feedback on assessment tasks/items, guide learners to make the necessary corrections that will improve learning.

3. Reflection (10 minutes)

3.1 Reflect and share your views on the session (NTS 1a, 1b).

3.2 Identify a critical friend to observe your lesson in relation to PLC Session 24 and provide feedback on your lesson (NTS 1f, 3g).

3.3 Remember to provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l-3n).

Appendix E: Table of Specification for End of Semester Examination

Weeks	Focal Area	Question Type	DOK Level				Total
			1	2	3	4	
13	Plane Geometrical Figures	*Multiple choice*	1	2	1		4
14	Using Ratio to Enlarge and Reduce Plane Geometrical Figures	*Multiple choice*		2	1		3
15	Blend Circles and Lines with Arcs	*Multiple choice*	1	2	1		4
16	Blend Circles and Lines with Arcs	*Practical*				1	1
17	Constructing an Ellipse as a Plane Geometrical Figure	*Multiple choice*	1	2	1		4
		Essay			1		1
18	Solid Geometrical Figures	*Multiple choice*		2	1		3
		Essay			1		1
19	Constructing Objects in Isometric and Oblique	*Multiple choice*	1	2	1		4
		Essay			1		1
20	Perspective Drawing	*Multiple choice*	1	2	1		4
		Essay		1			1
21	Surface Development of Prisms	*Multiple choice*	1	2	1		4
		Practical			1		1
22	Surface Development of Truncated Prisms	*Multiple choice*	1	2	1		4
		Essay		1			1
		Practical			1		1
23	Introduction to Fractal Geometry	*Multiple choice*	1	2	1		4
		Essay			1		1
24	Application of Fractal Geometry in Designing	*Multiple choice*	1		1		3
		Practical				1	1

Appendix 1: Structure of The Senior High School Internal Assessment and Transcript System

Introduction

This document provides details on the structure of the internal assessment and transcript system for effective implementation of the standards-based curriculum at the SHS level. The structure of the internal assessment involves a comprehensive and systematic approach to evaluating learners' performance and learning progress. The frequency of assessment is carefully planned to ensure regular and consistent monitoring, typically occurring at multiple points throughout the academic term. It is crucial to capture learner assessment scores promptly and accurately for the transcript. Therefore, guidance has been provided to ensure that each assessment is recorded in a timely manner. Effective management of the transcript system requires meticulous organisation and updated technology to handle and store data efficiently. Capacity building and training on effective internal assessment are essential for teachers, heads, assessments officers, providing them with the skills and knowledge to conduct assessments that are fair, ethical and align with learning outcomes for valid results. Engaging learners in internal school assessments fosters a sense of responsibility and self-awareness, encouraging them to take an active role in their educational journey through prompt and effective feedback.

A. Structure

Formative Assessment

This assessment may be conducted during a class period, after completing or during a practical activity, or after a teacher completes a sub-strand, strand, or a learning indicator(s). Distinct types of assessment tools can be used for Formative Assessment. These include:

- Observation during in-class activities
- Standard homework exercise for class discussion
- Question and answer sessions (formal and informal)
- Quizzes (e.g. class pop-ups)
- In-class activities and presentations (individuals and groups)
- Project work (individuals and groups)
- Practical assessments
- Field trips/Presentation of Reports

- Class assignments/Self/Peer Assessments
- Class tests
- Portfolios
- Performance assessments (roleplay, demonstration oral/aural)

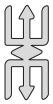
Summative Assessment

Summative Assessment is conducted at the end of the learning sequence (end of semester). It records the learners' overall achievement/performance at the end of the learning sequence. The type of tools used may include:

- Mid-Semester examination
- End of semester examination
- Project work/Portfolio/Research/Practical assessments

TABLE 1: *Proposed Structure, assessment activities and marks distribution*

	Mode of Assessment	Contribution/ Weight	Submission per Year
1	Class Assessments (e.g., Classwork, Quizzes, Homework, Debate, Presentation, Drama & Roleplay, Case Study)	10 %	2
2	Mid-Semester Examination (Assessment/Project/ Research)	10%	2
3	Practical or Portfolio or Performance Assessment (Individual)	10 %	1
4	Group Projects, Research, or Case Studies, Practical/Lab work, Workshops, Performances, Presentations (Out of Class)	10 %	1
5	Individual Projects, Research, or Case Studies, Practical/Lab work, Workshops, Performances, Presentations (Out of Class)	20%	1
6	Supervised Individual Semester Assessment/Project/ Research/ End of Semester Examination	40 %	2
	Total	100 %	9



Note

Character Qualities/National, Values, 21st Century Skills: Teachers should make a conscious effort to observe these soft skills as learners go about their activities in the class, take notes, and award marks appropriately. Assessment of these skills should be deliberately embedded in the various modes of assessment outlined in the table above.

B. Frequency of Assessment

Table 2 provides a suggested schedule of internal assessment for SHS. It is important to note that whilst assessments should comply with the specific learning outcomes of the subject area, they should cover the 21st century skills and competencies, GESI, SEL and National values as espoused in the TAMT using diversity in assessment modes as suggested in Table 1. Teachers may increase the frequency of assessments using other assessment strategies. The schedules presented should serve as **milestones** for schools to comply with.

Table 2: *Suggested schedules of internal assessment for SHS*

	Semester One													
SN	Modes of Assessment	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Individual Class Assessment(s)				→										
2	Practical or Portfolio** or Performance Assessments (Individual)					→	→	→	→	→	→				
3	Group Projects, Research or Case Studies (out of class)	→	→	→	→	→	→	→	→	→	→				
4	Supervised Individual Semester Assessment													→	→

	Semester Two													
SN	Modes of Assessment	15	16	17	18	19	20	21	22	23	24	25	26	27	28
5	Individual Class Assessment(s)				→										
6	Group work or Exercises						→	→	→						
7	Practical or Portfolio or Performance Assessments (Individual)	→	→	→	→	→	→	→	→						
8	Individual Project work or Research or Case Study		→	→	→	→	→	→	→	→	→				
9	Supervised Individual Semester Assessment													→	→

Note: How and when to capture learner assessment scores for the Transcript.

1. **Individual Class Assessment:** This can include individual classwork. This assessment can begin before week 4, but the evaluation scores should be ready by weeks 4 and 18.
2. **Individual Practical/Performance Assessment:** This form of assessment should include orientation of learners at the beginning to provide enough information

concerning the deliverables, progress review, and feedback processes. The assessment score should be ready by the end of weeks 5 through 10, and 15 through 22.

3. **Group Projects/ Research/Case Studies:** Learners should be grouped to work on a common project, case study or research-based problem. The learners should be given orientation concerning the rubrics and ethical or professional conduct concerning the assessment. The problems, projects, research assignments, or case studies should be related to the learners' environment. The assessment score should be ready by week 10.
4. **Supervised Individual Semester Assessment:** This may be a written examination or project work. It must be noted that regardless of the mode of assessment, there should be supervision throughout. This assessment should be completed by weeks 13/14 and 27/28.
5. **Individual Project Work/Research/Case Study:** This can include mini-design assignments, investigative or case studies or research-based assignments. The assessment score should be ready by week 24.

Assessments should cover the scope of the 21st century skills and competencies, GESI, SEL and national values espoused in the TAMT. Table 3 gives examples of the scope. Refer to the TAMT for a comprehensive list of the scope.

Table 3: *Examples of 21st Century skills and competencies, GESI, SEL and National Values to be covered by scope of assessment*

21st Century Skills & Competencies	GESI & SEL	National Values
· Critical Thinking and Problem Solving · Creativity · Innovation · Collaboration · Communication · Global and Local Citizenship · Learning for life · Leadership · Analytic skills · Digital Literacy	· Gender Equality and Social Inclusion · Self-Awareness · Self-Management · Social Awareness · Relationship Skills · Responsible Decision Making · Tolerance	· Respect · Truth and Integrity · Tolerance · Respect · Equity · Communality · Appreciation · Stewardship · Time Management

Table 4 shows the recommended assessment strategies for the scope in Table 3.

Table 4: *Recommended assessment strategies for 21st century skills and competencies*

21st Century Skills & Competencies	Assessment Strategies
Critical Thinking, Problem Solving, Analytical skills	· Debates · Analysis of Case Studies based on learners' environment. · Research & Project work. · Objective and Essay type questions/items
Creativity and Innovation	· Individual and group projects · Analysis of Case Studies based on learners' environment. · Design & product creation to solve societal problems
Communication and Collaboration	· Debates · Group projects. · Presentations · Drama & Role play
Global and Local Citizenship	· Research & Project work. · Analysis of Case Studies based on cultural and global issues
Leadership and learning for life	· Individual and Group projects · Presentations
Digital Literacy	· Research & Project work. · Presentations using ICT tools. · individual and group projects

The TAMT details the rubrics for the assessment strategies suggested in Table 3. A combination of the assessment strategies could provide diversity and ensure that the assessment scope is effectively covered during formative and summative assessments. It is important to note that the GESI, SEL and National values espoused in the TAMT should be incorporated into the assessment strategies.

C. Learner Involvement

What should learners contribute?

Learners' involvement in the internal assessment processes in schools offers valuable insights into how the learner perceives and experiences of the assessment process. This engagement process grants learners the opportunity to explain areas of confusion, frustration, or unfairness, and these help teachers refine their assessment approaches.

Again, learner involvement fosters communication between teachers and students. This can help clarify expectations, address concerns, and create a more positive learning environment.

When to involve learners

As part of the initial needs assessment for teacher training, gather learner input on areas needing improvement in the Internal Assessment Score (IAS) process. This helps to incorporate learner feedback in developing appropriate teacher training materials.

How should learners be involved?

Teachers should organise focus group sessions, to gather learner feedback on past assessments. This feedback can be used to inform future training sessions for teachers. e.g., Mock assessments and Co-creation of rubric.

Guide learners on the learning outcome expected. Involve them in the development of the assessment rubrics, and checklists to evaluate their progress and identify areas for improvement. Learners would demonstrate respect for diverse perspectives and the ability to work cooperatively with others.

Reflection

Integrate reflective activities such as journaling or discussions where students can analyse their learning experiences and identify areas for growth.

By actively involving teachers and learners in the SBA process, we create a dynamic learning environment. This empowers students to take ownership of their learning journey while equipping teachers with the tools to effectively guide and assess student progress.

Transparency and Setting Goals

At the beginning of a lesson, communicate clearly, the assessment criteria to the learners using appropriate language and structure. Present the information in an organised and coherent manner.

Self-assessment

Incorporate opportunities for self-assessment throughout the learning process. Learners can use rubrics or checklists to evaluate their progress and identify areas for improvement. Learners would demonstrate respect for diverse perspectives and the ability to work cooperatively with others.

Goal Setting

Encourage learners to set achievable learning goals aligned with the assessment criteria. This empowers them to take ownership of their learning journey.

Peer Assessment

Strategically incorporate peer assessment activities where students evaluate each other's work based on established criteria. This fosters critical thinking and collaboration skills.

Student-led presentations or projects

Provide opportunities for students to display their learning through presentations or projects. This allows them to develop communication and presentation skills.

By actively involving teachers and learners in the SBA process, we create a dynamic learning environment. This empowers students to take ownership of their learning journey while equipping teachers with the tools to effectively guide and assess student progress.

D. Feedback Mechanism

A feedback mechanism is a systematic approach for providing learners with information about their performance. This information helps them understand their strengths, identify areas for improvement, and achieve their learning goals. In the multi-subject environment of senior high school, timely and constructive feedback is crucial.

Timely means that feedback is provided soon enough for learners to act upon it after each assessment. Here are suggested general timelines to consider for the following types of assessments:

Type of Assessment	Expected Timeline for Feedback
Individual class assessments (mostly written)	1–3 days
Group assignments	1 week, with interim check-ins for assignments over extended periods of time.
Project work/Semester paper/End of Semester examinations	after key milestones and a final comprehensive review upon completion

For feedback to be constructive, it should focus on the task and not the learner's personality. It should be specific, actionable, and delivered in a way that motivates improvement.

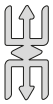
In providing feedback, use the sandwich method (CCC), which starts with a positive aspect of the work (***compliment***), followed by constructive criticism (***correction***), and concludes with another positive note (***compliment***). To set the stage for effective feedback, clearly communicate the learning objectives, expectations, and scoring rubrics before any assessment.

Learners must maintain an "assessment portfolio" where they compile all their assignments, reports, and feedback. Parents and other stakeholders review this portfolio during open days, parent-teacher meetings, or monitoring activities.

Feedback can be delivered using different methods after the assessment is done and marked. The choice of delivery should be guided by best practices and constraints that may exist, such as available time and class sizes. The following are some delivery methods to consider:

- **Whole Class Feedback:** The teacher facilitates a discussion about the assessment with all the learners. During the discussion, the teacher should highlight common strengths and weaknesses, provide clarifications, and share best practices.

- **Individual Feedback:** The teacher gives learners personalised (one-on-one) guidance or written comments. Provide ***prompts to guide learners*** to self-correct their wrong responses.



Note

Provide checklists or rubrics that learners can use to assess their own work before submitting it. This helps them independently identify errors and make the necessary adjustments.

- **Group Feedback:** The teacher groups learners facing similar challenges for targeted instruction and provides them with feedback.
- **Peer Review Feedback:** The teacher allows learners to learn from one another by giving constructive feedback to peers.
- **Self-Reflection:** After receiving feedback, the teacher should encourage learners to analyse their work, identify areas for improvement, and set goals using rubrics as a guide.
- **External Feedback:** In specific cases, the teacher should consider feedback from subject experts, teachers from other institutions, parents, and other stakeholders.

Regardless of the chosen feedback mechanism, note that self-reflection is essential. This allows learners to internalise feedback, set personal targets for improvement, and develop a growth mindset. Following the feedback, teachers are to provide opportunities for learners to correct mistakes through targeted exercises and reassessments.

By implementing these feedback strategies, teachers can empower senior high school learners to become active participants in their learning journey.

E. Transcript System

Effective data management is crucial for informed decision-making in today's dynamic educational landscape. The computerised transcript system achieves this purpose by offering second-cycle institutions with a comprehensive record of learner performance. The transcript system is a centralised repository for learner information. It gathers key details such as learner profiles, semester information, subjects taken with their respective scores (including continuous assessments and end of semester examination), credits, grades, semester, and overall Grade Point Averages (GPAs). Additionally, a dedicated section captures brief descriptions of learners' character qualities at the end of each semester.

There should be at least three individual class assessments, at least one group work and at least one project work.

Appendix 2: Excerpts from The Teacher Assessment Manual and Toolkit

A. Principles of Effective Assessment

As a process of determining the nature and extent of learning and development among learners, it is important to ensure that the assessment process meets the following principles:

1. Validity
2. Reliability
3. Fairness and ethics
4. Transparency
5. Inclusivity
6. Practicability
7. Assessment utility

Developing a valid assessment (Validity of Assessment Results)

To ensure that assessment scores or results are useful and interpreted appropriately, the teacher should:

i. Clearly state the purpose of the assessment (e.g., what the test will be used for).
ii. Create a learning and assessment plan (i.e., table of test specification tots)
iii. Write assessment items or tasks that measure important learning outcomes of the curriculum (e.g., Skills, competencies, collaborative efforts, and lifelong learning).
iv. Clearly define the performance criteria or standards/schemes/rubrics (i.e., define the specific knowledge, skill or behaviour that learners should demonstrate
v. Score or grade assessment task based on the performance criteria to avoid biases, stereotyping, among others.
vi. Ensure that the content of the assessment aligns closely with the defined criteria (thus, the assessment questions, tasks, or activities should directly measure what they want to assess).
vii. Interpret the assessment results based on the purpose and the performance criteria.

Reliability (Consistency of Assessment Results)

In assessment, consistent standards of teacher assessment and fairness are important goals to aim for. The 'connoisseur' approach to assessment; that is, 'I know it when I see it, but I can't put it into words' is not acceptable. Reliable results must be dependable for decision making.

For an Assessment result to be reliable, the teacher should:

i. Clearly identify the learning outcomes to be assessed.

ii. Give learners work or completed assessment tasks and activities to other teacher(s) to review.

iii. Use multiple assessment strategies to measure the same or similar learning outcomes (e.g., giving the tasks or items of a class exercise as another class exercise or homework or group project) or using different item formats to assess learning outcomes.

iv. Prepare scoring rubrics or marking schemes with specific weighting (marks)

v. allocated to the items and use it consistently.

vi. Give rubrics of tasks/activities in the case of performance or practical assessment ahead of time.

vii. Ensure that the load or the length of the tasks are appropriate to the level of the learner (e.g., 25 minutes for 20 items; a project for a week or the term/ semester).

viii. Administer assessment in a conducive environment that minimise disruption (e.g., noise, lightening, ventilation, among others) and devoid of any cheating.

Fairness and Ethics

Assessment strategies should give learners equitable opportunity to demonstrate what they know and can do taking into consideration their ability, learning styles, gender, special educational needs (SEN), among others. The teacher should:

i. Ensure that the assessment tasks/activities align with the learning outcomes and content covered in class.

ii. Use different forms of assessment tasks to assess learning outcomes (e.g., oral assessment, class exercises, class tests, homework, assignments, written tests, projects, and practical demonstrations as well as the end-of-term/ semester assessment).

iii. Provide clear and detailed instructions to learners about the assessment's format, expectations, and criteria for evaluation.

iv. Identify learners with SEN and make the necessary adaptation by providing extra time, alternative formats and other necessary accommodations.

v. Avoid using culturally biased or discriminatory content, unfamiliar words, questioning, or examples in assessments.

vi. Communicate the assessment plan in advance. For example, date, time, location, and any other relevant logistics.

Transparency

Transparency in assessment refers to making the assessment process and criteria clear and understandable to learners. The teacher should:

i. Make learners aware of the demand of the assessment tasks.
ii. Share performance criteria and indicate what will constitute the pass mark.
iii. Readily share assessment results with the appropriate stakeholders (learners, parents/guidance, teachers).
iv. Provide opportunity for leaners to seek review and redress.
v. Share the learning outcomes the assessment is designed to measure with learners.
vi. be ready to share assessment criteria or rubrics when the need arises.

Inclusivity

Inclusivity in assessment will allow teachers to create assessment practices that are fair and accessible to ALL learners (GESI, SEL and SEN).

The teacher should:

i. Familiarise with the section of inclusivity on the national pre-tertiary learning and assessment framework (NPLAF, page 32).
ii. Select assessment strategies that are appropriate for different learning needs.
iii. Assign workload in connection with the developmental and learning needs of learners.
iv. Work with special education experts in the school system to adapt and accommodate assessment to the needs of all learners (i.e., extra time, alternative formats, or other necessary accommodations should be available).
v. Make use of different formats (braille, oral translation, text-to-speech, ai, sign language interpretation and other assistive technology forms).
vi. Develop rubrics that are inclusive (taking into consideration grammar, vocabulary, handwriting, presentation of ideas).

Practicability

For assessment strategies or processes to be feasible, convenient, efficient and successful. The teacher should:

i. Ensure that appropriate and adequate assessment materials, resources and security are available.
ii. Consider appropriate assessment format to match the learning outcome(s), class size, age and ability levels.
iii. Consider the time available to develop, administer, score and give constructive feedback.

Assessment Utility (utilisation and benefits)

To enhance the usefulness and practical value of assessment tasks/activities, the teacher should:

i. Clearly state the intended use of the assessment results.
ii. Identify the essential learning outcome(s) to be covered in the assessment.
iii. Construct assessment tasks/activities that are well aligned to real-life situations.
iv. Select and allocate the appropriate resources for the assessment activities.
v. Provide constructive feedback to learners on their performances.
vi. Provide credible information that are useful to learners and other stakeholders (teachers, parent/guardians).
vii. Weigh and indicate the benefits and the cost of the assessment strategies
viii. to be used.
ix. Justify the selection of a particular assessment format over the others (objective-type, essay, project, portfolio, demonstration, etc.).

B. Ethical considerations in Assessment

1. Designing and Developing the Assessment

i. Identify the specific learning outcome(s) to be assessed.
ii. State clearly the purpose of the assessment(s).
iii. Specify the content area (i.e. Content Standards and/or Indicators) to be assessed and align them to the learning outcome(s).
iv. Select appropriate format or strategy that should be in line with the learner's characteristics, learning outcome(s) and resources.
v. Design different versions (differentiated assessment) of the assessment including the use of alternative strategies of assessment.
vi. Avoid biassed assessment tasks (e.g., task favouring a group of learners such as males among others).
vii. Avoid using unfamiliar language and materials in writing the assessment tasks.
viii. Adapt different versions to suit the needs of all learners. For example, make provision for learners with visual impairment by enlarging the font sizes of the assessment instrument and providing braille versions.
ix. Develop the marking scheme/ scoring rubrics when developing the assessment task.
x. Include mark allocation on the individual questions that are given when necessary.
xi. Ensure that the assessment task is stored securely.
xii. Provide clear direction for administration of the assessments.
xiii. Consider logistics.

2. Administering the Assessment

i. Communicate the assessment nature/structure/format, time, content coverage and location of the assessment tasks clearly to learners.

ii. Ensure the setting is suitable and conducive for the assessment (e.g., lighting, ventilation, less noise among others).

iii. For learners with SEN establish rapport and communicate in simple and clear language. Provide alternative settings for learners with SEN to meet their specific needs. (e.g., providing individualised accommodations such as writing the assessment in a separate room).

iv. Provide needed logistics (e.g., answer booklets, first aid, pens and pencils among others) for the assessment task.

v. For learners with SEN make room for the use of translators, assistive devices such as hearing aids, braille, computers, recorders, and other technologies that are relevant to their needs.

vi. Administer assessments within appropriate time limits to enhance validity and to minimise the chance for cheating. Provide additional time for learners with SEN.

vii. For learners with SEN, make room for varied modes such as oral, written, the use of a computer (text-to-speech and speech-to-text) among others.

viii. Avoid anxiety, intimidating language, and unnecessary announcements.

ix. Provide learners with anonymous identifiers and codes instead of names to enhance reliability and validity.

x. In the case of practical/performance assessments, share rubrics and marking schemes with learners.

xi. Ensure controlled and supervised distribution of assessment materials to avoid leaks or unauthorised sharing.

3. Scoring the Assessment

i. Consistently make use of the marking scheme/ scoring rubrics.

ii. Ensure multiple ratings or scoring/grading are done where necessary (e.g., for essay-type questions, practical/performance assessment).

iii. Focus on the content (i.e., what is being assessed) instead of handwriting, spelling, punctuations, concord, and vocabulary when scoring.

iv. For learners with SEN considerations should be made for vocabulary, spelling, and grammar especially in the English language.

v. Provide opportunity for remarking, review, or redress where necessary.

vi. Record the actual scores/grades of learners as a reflection of their performance. Do not add or subtract marks based on personal influences.

vii. Keep assessment results of the learners safe (either manually or digitally).

viii. Consider the use of professional scorers, judges, or raters in the case of External Assessments.

4. Reporting and Feedback in Assessment

i. Ensure that the learner is aware of those who will be receiving the report.

ii. Communicate results to authorised persons such as parents/guardians and other teachers.

iii. Seek permission (informed consent) from the learner or parent/guardian if a third party may be involved.

iv. Ensure that the true performance of the learner is reported (do not manipulate or distort the results).

v. Present assessment results without stereotyping or biases.

vi. Use language and terminology that is respectful and GESI responsive when reporting reports.

vii. Provide clear and meaningful interpretation of the assessment results.

viii. Adhere to legal requirements, ethical guidelines and institutional policies governing the reporting of assessment results.

5. Feedback

i. Provide constructive feedback timely and promptly.

ii. Emphasise the learner's strengths and opportunities for improvement rather than focusing solely on weaknesses.

iii. Ensure that the feedback given to the learner, parents/guardians and other teachers reflects the performance of the learner.

iv. Consider and adjust the mode of providing feedback to suit the needs of learners (consider GESI and SEN issues).

v. Provide feedback based on the assessment criteria and not on personal influence.

vi. Avoid displaying and announcing learners' performance unofficially.

vii. Create opportunities for learners to readily access their results through creation of portals, portfolios and files for individual learners and other stakeholders.

viii. Ensure collaborative assessment by sharing and taking the learner's information.

ix. Create opportunities for learners to reflect on their own assessment results and learning.

x. Give written comments to learners in formative assessment to help the learner track their errors and make the necessary corrections.

6. Interpreting and Using the Assessment Results

i. Provide clear and detailed criteria including criterion/pass mark for interpreting the assessment results.

ii. Avoid biases in interpreting the assessment results. Ensure result interpretation is not influenced by gender, religion, ethnicity, personal liking among others.

iii. Use simple and clear language in the interpretation of the assessment results.

iv. Interpret assessment results based on evidence and sound assessment practices.

v. Ensure that the interpretation of the results accurately reflects the learner's ability, skills, competencies and knowledge.

vi. Ensure the learner is aware of the assessment process and the consequence of the results.

vii. Ensure assessment results are used for their INTENDED PURPOSE, aligning with the learning outcomes.

viii. Seek the consent of the learner and parents/guardians before using the assessment results for any purpose.

ix. Ensure that assessment informs the teaching and learning process in a fair and unbiased manner and provide remediation where necessary.

x. Ensure that assessment results are confidentially kept and only shared with relevant stakeholders, such as the learner, parents/guardians, and school administrators.

xi. Avoid using assessment results to label (name-calling), stereotype and discriminate among learners.

xii. Ensure that results are stored and used in a secured manner.

xiii. Avoid discussing the learner's results and performance unofficially with others (e.g., with other teachers, staff, learners and among others).

C. Differentiated Assessment

Differentiated assessment adapts strategies to diverse learning needs, strengths, and interests of all learners. Teachers tailor assessments to accommodate varying levels of readiness, learning styles, and preferences that ensure that all learners have equitable opportunities to demonstrate their understanding and skills.

To implement differentiated assessment, teachers should consider the following:

i. *Varied assessment formats:* provide a range of assessment options, such as written assignments, oral presentations, projects, or multimedia presentations. This allows learners to exhibit their knowledge and skills using formats that align with their abilities and strengths.

ii. *Flexible deadlines:* give learners the opportunity to complete assessments within a flexible timeframe. This considers different learning paces and allows learners to manage their time appropriately.

iii. *Varying tasks:* Vary levels of difficulty for assessment tasks, allowing learners to choose the one that best suits their needs and challenges them appropriately.

iv. *Accommodations:* Provide necessary accommodations for learners with unique learning needs, such as extended time, modified formats, or additional resources to support their assessment process.

v. *Individualised feedback:* Provide individualised and constructive feedback that addresses the learner-specific needs and areas for improvement. Tailoring feedback to specific standards and learning outcomes can help learners understand their strengths and areas for improvement.

vi. *Learner involvement:* Involve learners in the assessment process by encouraging self-reflection, self-assessment, and goal setting. Engaging learners in dialogue about their learning and assessment promotes

D. Guidelines on how to Construct Multiple Choice Questions (attachment)

1. Clearly define the purpose of the test/assessment
2. Define the learning outcome (i.e. knowledge, comprehension, skills, or competencies) you want learners to demonstrate through MCQs.
3. Prepare a table of test specifications or blueprints.
    i. List topics and subtopics covered during the instructional period
    ii. Distribute the number of test items among course content and instructional objectives or behaviours.
4. Write the test items (note: it should match the content and DoK levels stated in the table of test specification).
    i. The central issue of the items should be in the question statement (stem).
    ii. The options should be plausible and homogeneous in content.
    iii. All options must follow syntax and punctuation rules.
    iv. Repetition of words in the options should be avoided.
    v. Vary the placement of the correct option (appropriately, arrange options in alphabetical order, ascending or descending or in order of magnitude if using numbers or dates).
    vi. Stems and options should be stated positively. However, a negative stem could be used sparingly, and the word should be emphasized either by underlining it or writing it in capital form (e.g. **not,** NOT, not**; except**, EXCEPT, except).
5. Write clear directions/instructions. (e.g. Answer All Questions. All questions carry equal marks, Select/Choose from the alternative lettered A-D the correct answer).
6. Review the test items (go through items again after construction i.e. after a few days to week).

7. Prepare scoring key (scoring keys should be prepared concurrently with item construction).

E. Common Assessment Used in the Classroom

Class Exercise As An Assessment Strategy

Description: Class exercise as an assessment strategy are tasks designed to evaluate learner's understanding, knowledge, and skills related to a particular subject to gauge how well learners are grasping a content being taught.

Teachers should mainly use class exercises for formative purposes to assess learners across all subject areas, which can take various forms, such as quizzes, problem-solving tasks, group discussions, reflective questions, case studies, question and answer and practical activities, performance, observation, checklist/rubrics and demonstration providing valuable insights into the learning process.

Purpose: Class exercises can be used to:

i. Help identify learning gaps in comprehension, retention, application of knowledge, values and attitudes.
ii. Allow for immediate feedback and clarification of concepts.
iii. Encourage active participation of learners for deeper understanding.
iv. Modify teaching and learning techniques, strategies, and resources based on learning outcomes.
v. Gradually build learners performance in a lesson over time to reduce summative test anxiety.
vi. Help identify learners who may require special educational support.
vii. Accommodate different learning styles and abilities, including group work and multiple representations for learners with special educational needs.

Settings

i. Classroom
ii. Laboratory/Workshops/Resource Centres/Libraries
iii. Studios
iv. Field (school park/garden or community spaces)
v. Online learning platforms/Virtual classrooms e.g. Zoom, Class WhatsApp pages, Google classrooms.

Time frame: Class exercises often take place in a lesson and may be conducted before, during and after a lesson depending on the learning outcome and the duration of the lesson.

Class size: Class exercises may be conducted for learners either individually, as a group or whole class.

Steps

Before

The teacher should:

i. Define the learning outcomes.

ii. Design exercises using simple and clear language.

iii. Select relevant exercises based on nature of the class exercise and desired skills/ knowledge to be attained. E.g. quizzes, case studies etc.

iv. Develop and discuss assessment criteria with learners.

v. Set a reasonable time frame for completion of exercises to maintain focus and efficiency.

vi. Clearly communicate instructions, including format, length, and resources.

The learner should:

i. Read and understand instructions to ensure a thorough understanding of the exercise provided.

ii. Collect all available required resources and tools for the task/exercise.

During

The teacher should:

i. Assign task/exercise based on the learning outcome as well as learners with special needs.

ii. Walk around the classroom and observe learners as they work on the exercise.

The learner should:

i. Organise and set up their work area to facilitate a smooth workflow.

ii. Plan how to approach the exercise, considering instructions and steps or techniques to employ.

iii. Commence class exercise timely and promptly to work within the given time for completion of the task.

After

The teacher should:

i. Evaluate the assessment outcome based on the assessment criteria with the learners.

ii. Provide constructive feedback for learners' performance for discussions.

NB: Teachers should pay attention to learners with special educational needs.

Reflect and modify teaching and learning strategies and resources based on feedback received.

The learner should:

i. Reflect, self and peer assess their exercises and provide constructive feedback.
ii. Use the feedback to improve on their work/exercises.

Homework As An Assessment Strategy

Description: Homework or assignments as an assessment strategy involve the use of structured tasks or projects that learners complete outside of regular class time to evaluate their understanding, knowledge and skills gained in a specific learning outcome. This assessment strategy can take various forms, such as written assignments, projects, research papers, problem sets, essays, or creative tasks.

Some concepts that can be assessed using homework/ assignments include menu planning and recipe development, problem solving exercises in mathematics, hands-on experiments and observations, creative writing assignments and art projects, map development and application of GIS in locating places.

Purpose: The key purposes of using homework/assignment as an assessment strategy by the teacher include:

i. Assessment of Understanding
ii. Application of Knowledge
iii. Reinforcement of Learning
iv. Independent Study
v. Provision of valuable feedback
vi. Skill Development
vii. Assessment of Diverse Abilities

Settings

i. Classroom
ii. Field work
iii. Online platforms
iv. Home

Class Size: Depending on the intended learning outcomes, assignments/ homework can be structured for either:

i. Small class sizes
ii. Large class sizes

Time Frame: The time frame for conducting assignments can be adjusted based on the desired learning outcomes and the complexity of the task.

i. Short-term Assignments (Daily or nightly homework and weekly assignments)
ii. Medium-term Assignments (Bi-weekly or monthly assignments)

iii. Long-term Assignments (Semester/ term-long assignments)

Steps

Before

The teachers should:

i. Clearly define the learning outcomes intended to be achieved
ii. Design/ Create a well-structured assignment with clear instructions and expectations.
iii. Adapt to the needs of diverse learners especially those with special needs
iv. Provide Resources such as textbooks, online materials, or reference materials, to support learners in completing the assignment successfully.

During

The teachers should:

i. Keep track of learners' progress on the assignment.
ii. Be available to answer questions and provide clarification during the assignment phase.
iii. Provide formative feedback and guidance to help students improve their work.
iv. Teach learners how to properly cite sources and use information ethically/ avoid plagiarism.

The learner should:

i. Seek clarification about the task from teachers or peers where necessary
ii. Actively work on the homework, focusing on comprehension
iii. Manage their time effectively
iv. Learners can reach out to their parents/guardians, peers, or online resources for guidance and clarification in responding to the tasks

After

The teacher should:

i. Evaluate the completed assignments using clear and consistent grading criteria
ii. Analyse student performance to identify common strengths and areas for improvement.
iii. Discuss feedback with learners
iv. Reflect on the outcomes of the assignment.
v. Share the results of the assignment with learners
vi. Acknowledge and celebrate learners' achievements to boost motivation and self-esteem.

The learner should:

i. Review their work to identify errors or areas for improvement.
ii. Reflect on what they have learned
iii. Bring up questions that were confusing for class discussion.
iv. Use feedback to learn from their mistakes and improve performance.

Discussion As An Assessment Strategy

Description: Discussion is a formative assessment strategy that involves using verbal communication and group interaction to assess learners' understanding, knowledge, and skills. The teacher is to observe and assess learners' contributions, ability to analyse and synthesise information, and provide feedback based on their performance. It can be used for both formative and summative assessments.

Discussion can be used in all subject areas of the secondary education curriculum depending on the purpose of the assessment and learning outcomes under consideration.

Purpose: The following are the purposes of discussion as an assessment strategy:

i. Build knowledge and develop a learner's critical and creative thinking.
ii. Develop learners' communication skills.
iii. Increase the depth of the learner's understanding and eliminate misconceptions.
iv. Engage learners in active participation in the lesson.

Setting

i. A classroom
ii. Small groups
iii. Seminars
iv. Online learning platforms (virtual classroom and discussion forum)
v. Fieldwork

Time frame: Appropriately, discussion as an assessment strategy can last for a lesson depending on the learning outcomes and learning indicator.

Class size: The class sizes appropriate for discussion as an assessment strategy can vary from small class to large/whole class.

Steps

Before

The teacher should:

i. Determine the learning outcomes to be assessed.
ii. Specify the content to be learnt that aligns with the learning outcome.
iii. Give prepared questions to guide the discussion (i.e., make use of open- ended questions, adaptive to the diverse/abilities of learners)

iv. Establish discussion guidelines or rules (let learners know what is expected of them, the content of the discussion and the format of the discussion i.e., individual, small or whole class)

The learner should:

i. Read any assigned readings, watch videos, or engage with other course materials related to the discussion topic.

ii. Take notes while reviewing the materials on important concepts, arguments, or evidence.

iii. Reflect on their own experiences, prior knowledge, or relevant examples that relate to the discussion topic.

iv. Seek clarification if needed.

During

The teacher should:

i. Start and facilitate the discussion (ensure that all learners could participate and encourage learners to engage in critical thinking and reflective thinking).

ii. Monitor and assess learner's participation (encourage self and peer assessment).

iii. Provide constructive feedback on learners' responses and contributions. NB. Teachers are advised to manage all learners' responses and accommodate them but must be fair and ethical.

The learner should:

i. Pay attention, maintain eye contact, and be open to different viewpoints and contributions from mates.

ii. Share their own unique perspectives, insights, and experiences related to the discussion topic.

iii. Take notes during the discussion to capture key points, new understanding, or questions that arise.

iv. Ask follow-up questions, seek clarification, or offer alternatives or suggestions respectfully.

After

The teacher and the learners reflect on the discussion in relationship to the expected learning outcomes to check whether the learning outcomes have been achieved.

Case Study As An Assessment Strategy

Description: A case study can be used as an assessment and or pedagogical strategy. Usually, it is used as an assessment strategy to examine a learner's ability to apply acquired knowledge, skills and experiences by carefully investigating a particular circumstance or scenario to provide solutions to real-life situations. Usually, it will have the following components:

1. Theme
2. Case description
3. Study of the case
4. Class Discussions
5. Conclusion and reflection

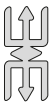
Types of case studies

i. Descriptive case studies: The teacher should ask learners to analyse and explain the key features and characteristics of the case.

ii. Explanatory case studies: The teacher should ask learners to give detailed information on the case by identifying and explaining the factors that contributed to the situation.

iii. Exploratory case reports: The teacher should ask learners to gather information, analyse data, and draw conclusions about a topic where limited information is available

iv. Cumulative case studies: The teacher should encourage learners to synthesise and integrate their learning across different subjects



Note

Any of these can be done individually or as a group depending on the class size. For large class sizes, a group of 3 to 5 members should be used.

Purpose: The purpose of a case study is for learners to apply acquired knowledge, concepts and theories to solve real-life situations. What should the teacher consider before using a case study as an assessment strategy?

i. The complexity of the content standard

ii. The availability of resources

iii. Ability level of learners

iv. Time

v. Class size

Steps: To ensure a well-structured and quality case study, it is important for the teacher to consider the following:

Before

The teacher should:

i. Clearly define the learning outcomes to be assessed.

ii. Identify appropriate issues or cases to be investigated.

iii. Determine the format of the case study (e.g., written document, a multimedia presentation, a video, or a combination of these), depending on the resources available.

iv. In form the learner on what to do, time frame, and expectations.
v. Provide materials (i.e., text, videos, pictures etc.) for the case study discussion.
vi. Develop and provide a clear scoring rubric that outlines or defines quality
vii. work to learners.

During

The teacher should:

i. Create and maintain a sound environment for the case study discussion.
ii. Bring the whole class together and invite each group to share their findings,
iii. solutions, or recommendations.
iv. Ask open-ended questions on the issue of discussion to clarify any misconception.
v. Incorporate peer assessment or peer grading as part of the process.

After

The teacher should:

i. Provide constructive feedback on learners' responses.
ii. Ask the learners to reflect on their learning process, such as what they learned, what they found difficult, or what they would do differently.
iii. Summarise the main points and lessons learned from the case study and link them to the learning outcomes and content.

Ethical Considerations: In the use of case study as an assessment strategy, the teacher should:

i. Discuss ethical considerations with learners, especially in cases that involve sensitive or potentially controversial topics (e.g., gender, cultural, social, emotional, political and religious issues) when selecting and discussing a case.

Documentation and Record-Keeping: The teacher should keep records of assessments and learners' submissions to maintain transparency and fairness (e.g., portfolio)

Portfolio Assessment- General

Description: A portfolio assessment is an evaluative tool to measure learners' understanding in a comprehensive manner, looking at the overall progress instead of individual marks from tests and quizzes.

Purpose: Portfolio assessment is used to establish various cognitive achievements as well as practical competencies. Portfolio assessment could be used for the different levels of Depth of Knowledge (Levels 1 – 4). It helps teachers identify areas where the learner may need additional support or resources to improve learning and provide a wide variety of learners' mastery of a particular standard and growth over a defined time.

Types of Portfolio Assessments: A portfolio is a systematic collection of learners' work that represents learner's activities, actions, and achievements over a specific period in one or more areas of the curriculum. There are three main types of portfolios:

1. Assessment Portfolios
2. Teaching and Learning or Working portfolios
3. Showcase portfolios

Assessment Portfolios

Assessment portfolios, also known as evaluative portfolios, contain work that has been evaluated according to set standards or criteria. These portfolios demonstrate a learner's ability to meet specific learning standards. They often contain rubrics, test results, learner reflections, teacher's notes, and graded assignments. For instance, in a science class, an assessment portfolio may contain lab reports, results from class tests, assessed projects, and the learner's reflection on their learning throughout the term/semester/year.

Teaching and Learning or Working Portfolios

Teaching and learning or working portfolios are formative in nature. They allow a learner to demonstrate his or her ability to perform a particular skill. For example, a working portfolio may include a collection of lab reports during a semester (term) that highlight a learner's improving ability to create hypotheses.

Showcase Portfolios

Showcase portfolios are summative in nature. They include samples of a learner's best work to demonstrate mastery at the end of a unit of study, semester or school year. The showcase portfolio allows the learner to select their most outstanding work, hence demonstrating their highest level of learning and achievement. It can contain final drafts of assignments, projects, or any piece of work that the learner is particularly proud of, demonstrating the learner's mastery of the relevant skills.

What is in a Portfolio?

A portfolio contains the following:

1. Completed assignments and evaluations (e.g., Self-Assessment, Peer- Assessment)
2. Journal writings (daily report – Date, Time and Activities)
3. Reflections on discussions
4. Photos, sketches, and other visuals
5. A summary statement made at different points regarding what has been learned/ achieved.

Setting: The portfolio assessment strategy can be used in the following settings:

1. Project-Based Learning
2. Independent Study and Research Projects
3. Classroom-based assessment
4. Field Work

5. Exhibitions/ Fairs
6. Problem-based Learning
7. Laboratory environment
8. Studio
9. Resource Centres

For all approaches, the portfolio must demonstrate clear and close adherence to specific learning outcomes in the curriculum.

Steps

Before

The Teacher should:

i. Determine the purpose of the portfolio. Decide how the results of a portfolio evaluation will be used to inform the subject.

ii. Identify the learning outcomes the portfolio will address.

iii. Decide what learners will include in their portfolio. Portfolios can contain a range of items–plans, reports, essays, resumes, checklists, self-assessments, references from employers or supervisors, and audio and video clips. Limit the portfolio to 3-4 pieces of learner's work and one reflective essay/memo.

iv. Identify or develop the scoring criteria (e.g., a rubric) to judge the quality of the portfolio.

v. Establish standards of performance and examples (e.g., examples of a high, medium, and low-scoring portfolio).

vi. Create learner instructions that specify how learners collect, select, reflect, format, and submit.

vii. It is the teacher's responsibility to help learners by explicitly tying subject assignments to portfolio requirements.

During

The learner should:

i. Collect evidence related to the outcomes being assessed.

ii. Select the best and appropriate evidence and label each piece of evidence according to the learning outcome being demonstrated.

iii. Be guided on how to write a one or two-page reflective essay/memo that explains why they selected the particular examples, how the pieces demonstrate their achievement of the program outcomes, and/or how their knowledge/ability/attitude changed.

iv. Be guided on how to format requirements (e.g., type of binder, font and style guide requirements, online submission requirements).

v. Be given submission (and pickup) dates and instructions.

After

The teacher should:

i. Clearly establish the criteria for evaluating/scoring in a consistent manner
ii. Mark and record learners' performances
iii. Reflect on the activity and learner performances
iv. Provide constructive feedback to the learner
v. Identify learners with SEN who may need extra support

The learner should:

i. Reflect on the feedback received
ii. Revise their work for final submission

Time Frame: Deciding on a time frame for Portfolio assessment depends on and includes the following:

i. Nature of project/problem or assignment
ii. Class size
iii. Resources

However, based on the learning outcome(s) the appropriate time frame for this portfolio is a week for minor activity and a term for extended projects, especially in Art and Design or Performing Arts.

Form

i. Individual learner's portfolios when the class size is relatively small.
ii. Group portfolio when the size is relatively large.
iii. Whole class/ school

Research As An Assessment Strategy

Description: Research as an assessment strategy is a systematic process of inquiry and investigation that aligns with a particular learning outcome to develop knowledge and understand a phenomenon. It involves identifying an issue in need of investigation, collecting and analysing data, conducting experiments, and drawing conclusions based on the findings. Once learners have completed their research work, they will write a report and do a presentation on their findings.

Purpose: Research as an assessment strategy is used to assess learner's ability to:

i. Identify a problem and gather information (data) from a variety of sources.
ii. Evaluate the credibility and accuracy of information.
iii. Analyse and synthesise information from multiple sources.
iv. Communicate their findings clearly and concisely.

Setting

i. Classrooms
ii. Factories/ Industries
iii. School farms
iv. School communities
v. Libraries
vi. Homes.
vii. Fieldwork
viii. Workshops

Class Size: As a teacher, depending on the number of learners in your class, individual or group research-based assessment can be used. However, teachers can create large groups for complex research, where different members can focus on specific aspects of the research.

Time Frame: The time frame for conducting a research-based assessment can vary depending on the complexity of the learning outcomes (skill to be achieved) may be:

i. Short-term
ii. Medium-term
iii. Long term

Steps

Before

The teacher should:

i. Define the learning outcomes.
ii. Develop a theme in line with learning outcomes.
iii. Design the research work and provide a description that is in line with learning outcomes.
iv. Define specific tasks to be undertaken in developing the research.
v. create a timeline.
vi. Select resources and materials needed.
vii. Provide guidance and support for learners.
viii. Develop clear assessment rubrics.
ix. Provide feedback and revisions.

During

The teacher should:

i. Provide clear guidelines for developing the research and how to assess it.
ii. Design and plan the research work to align with the learning outcomes.

iii. Provide necessary resources, materials, and support to help learners succeed in their research work.

iv. Guide learners in reflecting on their research-based assessments and help them develop metacognitive skills.

After

The teacher should:

i. *Alignment with learning outcomes*: The research work should be aligned with the learning outcomes of the content standards. This means that the research work should allow learners to demonstrate their understanding of the course material and to develop the skills that are being taught.

ii. *Originality*: The research work should be original and not simply a rehash of existing information. Learners should be encouraged to develop their ideas and to come up with their conclusions.

iii. *Critical thinking:* The research work should demonstrate that learners can conceptualise, apply, analyse, synthesise and evaluate the information they have gathered and come out with an action plan.

iv. *Communication skills:* The research work should be well-written and well- organised. Learners should be able to communicate their findings clearly and concisely.

Practical Assessments

Description: Practical assessment gauges a student's capacity to use their knowledge and abilities in practical and hands-on settings. It involves evaluating learners' ability to perform specific tasks and demonstrate practical skills. It includes laboratory experiments, simulations, demonstrations or projects.

The exact nature of the assessment will depend on the subject or area a teacher is interested in.

Purpose: The purpose of conducting a practical assessment is to:

i. Evaluate learners' proficiency, problem-solving capacity, and aptitude for carrying out tasks.

ii. Create and deliver tests that ask learners to complete real-world assignments, experiments, or demonstrations.

Setting: Teachers can use practical assessment in the following settings:

i. Classroom

ii. Laboratory

iii. Field

iv. School farms/gardens/community

v. Technical workshops

vi. Science fair

vii. Virtual/Digital/Remote
viii. Co-curricular activities and clubs
ix. Outdoor spaces
x. Workplace
xi. Team project

Time Frame: Based on the learning outcome and the skills to be acquired, a Practical assessment can be done in a week, at the end of a term or year depending on the project.

Class size: Class size suitable for practical assessment can be individual, group or whole class

Steps

Before

Learners can understand the content and theory being used by;

i. Reviewing the theoretical concept
ii. Familiarising themselves with the concept under assessment

Choosing experimental design, learners are required to;

i. Design an experiment using the theoretical concept.
ii. Outline the stages/process for the experiment and formulate hypotheses.

Gathering materials

i. Make a list of the tools and supplies you will need.
ii. Ensure that the necessary materials are available

During

Choosing experimental procedure:

i. Learners are required describe the step-by-step process in detail including how to control extraneous factors, along with any safety precautions.

Gathering and analysing data

With support from teachers, learners are required to:

i. Measure the dependent variable appropriately at various factor values to collect data.
ii. Analyse the data meaningfully.
iii. Sort, examine, and derive conclusions from the data analysis

After

Display of findings

i. Give a concise visual summary of the results.

ii. Address any restrictions or mistakes.

Reflection and improvement

i. Consider your advantages and disadvantages.

ii. Improve the design of upcoming experiments.

iii. Throughout the process, place a strong emphasis on ethics, integrity, and seeking advice as appropriate.

iv. Encourage a critical and inquisitive outlook on learning.

Debate As An Assessment Strategy

Description: Debate as an assessment strategy involves structured arguments and discussions to evaluate learners' knowledge and understanding of issues/ideas. It encourages research and articulation of views; it can be used for formative or summative assessments. Types of debates include formal debates with rules and roles and informal debates, which are more flexible.

Purpose: Using debate as an assessment strategy offers a comprehensive evaluation of learners' ability to generate ideas based on their knowledge and understanding of concepts and confidence in supporting their own ideas.

Settings

i. Classroom

ii. Performance spaces (e.g. dining hall, assembly hall, laboratory)

iii. Electronic platforms

iv. Music and drama theatre

Class Size: Depending on the learning outcomes to be achieved debates can be organised in:

i. Small classes

ii. Large classes

Time frame: The teacher can conduct a debate within a single class session, it can also span over several class sessions or weeks.

Steps

Before

The teacher should:

i. Select appropriate motion/ topic, ensuring it is relevant to the learning outcome

ii. Offer resources and materials to support learners

iii. Assign roles /create teams or pairings

iv. Establish rules and procedures

The learner should:

i. Undertake research regarding the debate's topic or motion
ii. Play an active role as a team member (in team-based debates)

During

The teacher should:

i. Host the debate
ii. Ensure effective time management
iii. Monitor and take notes

The learner should:

i. Participate in the debate
ii. Listen and take notes
iii. Counter argue when necessary

After

The teacher should:

i. Facilitate a debriefing session (Teachers should utilise the debriefing sessions to address any misunderstandings or questions that come up from the debate. They should also highlight the key concepts and important lessons based on the learning outcome)
ii. Implement peer assessments.
iii. Organise follow-up activities as necessary.

The learners should:

i. Reflect on their performance and the debate as a whole.
ii. Assess their peers' performances based on established criteria.

The Test of Practical Knowledge (TPK) Assessment Strategy

Description: This assessment is tailored to evaluate a learner's capacity to apply acquired knowledge in real-life situations by engaging in hands-on tasks or simulations that mirror real-world scenarios, assessing practical skills, problem-solving abilities, and the application of practical knowledge theoretically. It aims to gauge how effectively learners can employ their knowledge to solve problems or accomplish tasks.

Purposes: The general purpose of the test of practical knowledge is to assess learners' ability to apply practical knowledge in theory to:

i. Evaluate their application-based understanding.
ii. Assess their problem-solving skills.
iii. Measure the learner's practical knowledge and its use in real-life situations.
iv. Provide insights into a learner's ability to transfer practical knowledge into theoretical actions.

Setting: The Test of Practical Knowledge is conducted in environments that simulate real-life situations relevant to the learning outcome and the context being assessed. This could be a

i. Classroom
ii. Laboratory
iii. Field
iv. School farms/gardens/community
v. Technical workshops
vi. Science fair
vii. Virtual/Digital/Remote
viii. Outdoor spaces
ix. Workplace
x. Team Project

Class Size: The size of the class can vary based on resources and the nature of the practical tasks. It could be individual, smaller groups, or whole class.

Time Frame: The timing for assessing the Test of Practical Knowledge can range from a single session to multiple sessions, depending on the complexity of tasks and skills being assessed.

Steps

Before

The teacher should:

Provide clear instructions and resources needed for the tasks.

Clarify any doubts about the assessment task.

The learner should:

i. Seek clarification from the teacher or other relevant persons before starting the assessment.
ii. Familiarise themselves with theoretical concepts beforehand.

During

The teacher should encourage teamwork and effective communication if tasks involve group work.

The learner should

i. Focus on applying learned concepts to solve problems or complete tasks accurately within the given context.
ii. Manage time efficiently to complete tasks within allocated timeframes.

After

The teacher should encourage learners to reflect on their performance, review their work, and identify areas for improvement.

Performance Assessment Strategy

Description: In its simplest terms, a performance assessment is one which requires learners to demonstrate that they have mastered specific skills and competencies by performing or producing something. It is important that the task be meaningful and engaging to learners. When learners perform tasks that are meaningful and engaging to them, they can take ownership of their learning and effectively work, either independently or in collaboration, depending on the requirement of the task. Performance assessment can be used as either formative or summative tool.

Purpose: The main purpose of this assessment strategy is to provide learners with the opportunity to demonstrate their knowledge and understanding about a concept and communicate that understanding through a performance task.

Setting: Performance assessment can be used in the following settings:

i. Classroom
ii. Laboratory/workshops
iii. Field
iv. Theatre

Time Frame: Teachers should note that the learning outcome and learners' achievement expectations may inform the appropriate time frame for the use of performance assessment. However, the designated time of completion of the assessment task should not be too short or two long.

Class Size: Performance assessment works best for all forms of class size. Teachers should, however, be strategic in making learners work individually or in moderate/large groups depending on the unique situation.

Steps: To develop and implement performance assessment, teachers should:

Before

The teacher should:

i. State the purpose of the assessment.
ii. Specify the learning outcome to be assessed using the performance assessment strategy.
iii. Make learners aware whether they will work individually or as groups (e.g., group of 2-5).
iv. Design a performance task which requires the learners to demonstrate the intended skills and knowledge required of them.
v. Discuss with learners the rules of engagement which includes the performance criteria that specifies the extent to which learners have mastered the skills and knowledge.

vi. Discuss with learners the available resources to be used.

The learner should:

i. Make ready the available resources that will help them perform the assessment task.

ii. Seek for clarification on the performance task to be performed when necessary.

During:

The teacher should:

i. Monitor and ensure serenity of the environment for learners to work effectively as individuals or groups as in the case of a laboratory/field/workshop exercise.

ii. Guide learners to complete the assigned task(s) within the stipulated time.

The learner should:

i. Design the artifact or the idea using the available resources.

ii. Should submit the performance product to class at the stimulated time for evaluation.

After:

The teacher should:

i. Collaborate with learners to evaluate the performance task(s) outcome.

ii. Communicate constructive feedback of the assessment to the learners.

iii. Provide information on how the assessment feedback would be used.

The learner(s) should:

i. Offer constructive feedback on their colleague's work.

ii. Self-reflect and make use of constructive feedback to shape his/her work.

Demonstration As An Assessment Strategy

Description: Demonstration as an assessment strategy offers a practical and effective way to evaluate learners' knowledge, skills, and abilities by observing their performance in a real or simulated context. This may include a presentation, a practical experiment, a role-play, a performance, or a project.

Purpose: The main purpose of using demonstration as an assessment strategy is to allow learners to showcase their skills and competencies through practical application. Some of the areas in which learners can demonstrate their proficiencies are:

i. Problem-solving skills

ii. Critical thinking abilities

iii. Communication

Settings

i. Classroom
ii. Laboratory/ Workshop /Studio
iii. Simulation studio/environment
iv. Field or real-world settings (e.g., field trips, community projects, or internships)
v. Performance spaces (e.g., theatre, music room, or sports field/studio/rooms)
vi. Online/remote/virtual platform

Time Frame: The time frame for conducting demonstration as an assessment strategy depends on the following:

i. Learning outcome(s)
ii. Complexity of the task to be performed
iii. Resources

NB: The teacher should provide the learner enough time to demonstrate their abilities and ensure the assessment process is managed within the constraints of the learning environment.

Class size: Demonstration can be used for individuals or groups (large or small groups) for the reasons of attention, support, and prompt feedback on factors such as assessors, resources and equipment, learning outcome and the assessment environment.

Steps

Before

The teacher should

i. Set clear expectations of the learning outcomes, specific skills, knowledge and competencies.
ii. Provide instructions for the demonstration to include safety precautions, criteria for assessment and time.
iii. Provide learners the opportunity to rehearse the task or the activity to be demonstrated.
iv. Provide the needed materials and resources to be used for the demonstration.
v. Address the concerns of the learners raised after the rehearsals.
vi. Distribute the task to the learner(s) considering Special Education Needs - SEN)

The learner should:

i. Understand the learning outcomes, specific skills, knowledge, and competencies expected of them.
ii. Take the necessary steps to prepare for the demonstration by reviewing the instructions and rehearsing the expected knowledge, skills, and competencies.

iii. Seek clarification about the instructions and materials to be used for the demonstration.

iv. Take the opportunity to practice and refine their skills or knowledge before the demonstration.

v. Reflect on their previous learning and experiences related to the skills or knowledge being assessed.

During

The teacher should:

i. Observe the learner's performance of the task demonstrated.

ii. Provide continuous guidance to learner(s) on the task especially when they are working with or in hazardous situations.

iii. Monitor the progress of the learner(s) on the task.

iv. Pace the timing of the demonstration such that differentiation is considered.

v. Assess the performance of the learners on the task.

vi. Take notes of critical issues such as learners' strengths and areas for improvement

The learner should:

i. Focus on the demonstration and actively listen to the instructions and explanations provided.

ii. Carefully watch the demonstration, noting the steps, techniques, and key details being shown.

iii. Take notes of important points, steps, or tips during the demonstration to refer to later.

iv. Request feedback from the demonstrator or peers to ensure they are on the right track and identify areas for improvement.

After

The teacher should:

i. Provide constructive feedback to the learners based on observations. highlighting areas of improvement, reinforcing correct techniques, and encouraging further practice.

ii. Review notes to consider where learners have performed well and areas that need improvement

iii. Provide support to learners who may be struggling with the demonstrated skills. This can involve additional explanations, demonstrations, or one-on- one assistance.

The learner should:

i. Reflect on their own performance during the demonstration and assess their understanding and execution of the demonstrated skills or techniques.

ii. Share their performance and ask for feedback to improve their learning.

iii. Identify specific areas where they need further assistance or practice; they can seek out additional resources such as tutorials, online courses, or books to support their learning and assessment.

Questioning As An Assessment Strategy

Description: Questioning as an assessment strategy is the practice of engaging learners in an interactive dialogue or a series of carefully crafted questions to evaluate their understanding, knowledge, skills, and critical thinking abilities. Teachers can use questioning as an assessment strategy in all learning areas or subjects.

Purpose: Questioning as an assessment strategy can be used by the teacher to:

1. Identify learning gaps through the assessment of the level of comprehension, retention and application of knowledge, and skills gained by learners in achieving a learning outcome of a given content.
2. Actively engage leaners in the teaching and learning process.
3. Assess if a concept taught has been well grasped as learners' feedback provides valuable feedback to them and the teacher.
4. Clarify concepts leading to deeper understanding or seek additional information in solving real-world or imaginary issues.
5. Promote the acquisition of critical thinking and problem-solving skills.
6. Encourage immediate or real-time feedback from leaners leading to deeper thinking.
7. Investigate misconceptions for clarification.
8. Accommodate diverse learning styles to achieve a specific learning outcome.

Types: The following are various types of questioning techniques based on the Depth of Knowledge (DoK) levels that the teacher can use in assessment:

i. Closed-ended questions – DoK 1: have a limited number of predetermined answers and are designed to gather specific information requiring "yes" or "no", "True or False"

ii. Open-ended Questions - DoK 2 and 3: allow for a more detailed and

iii. comprehensive response, which begins with words like "what," "why," or "how."

iv. Funnel Questions- DoK 2 and 3: used to gradually narrow down a topic, starting with broader questions and proceeding to more specific ones. This technique helps gather information in a logical and structured manner.

v. Probing Questions - DoK 2 and 3: used to explore a topic in more detail or to gain deeper insights. They are often used to dig deeper into a previous response or to uncover hidden information,

vi. Leading Questions - DoK 2 and 3: used to steer learners towards a particular answer or viewpoint. They may imply an expected or desired response.

vii. Hypothetical Questions- DoK 3 and 4: These questions often involve speculative or creative thinking. They require learners to make connections, apply knowledge, and think beyond the immediate context.

Settings

i. Classroom
ii. Co-curricular activities, e.g. School Clubs and Games
iii. Field trips/work, e.g., Factories/industries, school farms/gardens/ pantries(kitchen)
iv. Laboratory/Resource Centre
v. Workshops/studios/theatres

Time Frame: Teachers can use questioning in their daily teaching and learning activities. However, it should be used based on the learning outcome of the subject matter under consideration. It can specifically be used:

i. Throughout the teaching and learning process (Formative Assessment): before, during and after the teaching of a lesson.
ii. In summative assessment, questioning can be used together with other forms of assessment such as oral/aural(listening) assessment at the end of a unit or content and programme.

Class size: Individual, small group or whole class

Steps: In using questioning as an assessment strategy, the teacher and learner can employ the following steps:

Before

The teacher should:

i. Define the Learning Outcomes to be achieved and develop key questions
ii. before class based on the outcomes.
iii. Select appropriate question type(s) that align with the content standard/ indicators to be taught and the DoK levels to be achieved. The questions to be asked should be clear, relevant, concise, and free from ambiguity and biases.
iv. Design valid questions that will suit the type of questioning strategy to be used to achieve the learning outcomes.

NB: Avoid or minimise the use of questions that will yield Yes/No or True/False responses but make more use of questions that allow for explanatory responses.

Plan question sequence and adapt questioning techniques to meet the diverse learning needs and abilities of their learners to promote active participation.

During

The Teacher should:

i. Select the context and provide relevant information to give learners the basis for the questions.

ii. Vary the form of questions: those that gauge knowledge, require diagnosis, or challenge conclusions considering the learner's background characteristics to promote inclusivity.

iii. Ask one question at a time and wait for responses from learners to allow time to think through responses critically.

iv. Encourage active engagement of all learners.

v. Monitor learners' performance and learning process to identify areas where learners may need additional support or clarification or to plan appropriate remediation where appropriate.

vi. Acknowledge all responses/answers- repeat so the class can hear and/or write them on the board.

vii. Provide constructive and timely feedback; teachers are advised to accommodate learners' varied responses as well as be fair and ethical.

viii. Use assessment data to modify their teaching techniques, strategies and resources.

ix. Move around the classroom or learning centre

The learner should:

i. Ensure they gain an understanding of the learning outcomes and work towards achieving them through self and peer assessment.

ii. Actively participate in the questioning process by listening carefully to the questions, thinking critically about their responses, and providing thoughtful answers.

iii. Self and peer assess themselves using a questioning assessment strategy when learning to enable them to reflect on their learning.

iv. Own their learning by adapting strategies to improve their learning outcomes, skills and competencies.

After

The teacher should:

i. Analyse responses

ii. Provide constructive feedback

iii. Modify teaching and learning processes

iv. Document assessment data

v. Reflect and adapt questioning techniques, strategies and resources to check if expected learning outcomes have been achieved.

vi. Teachers and learners reflect on responses to check if expected learning

vii. outcomes have been achieved.

Peer/Self Assessment Strategy

Description: Peer/self-assessment is a type of performance monitoring and evaluation related to a learning outcome done by or among learners under the supervision of a teacher to track their learning progress. It can be used as both formative and summative assessment. However, it is predominately used for formative assessment purposes.

Purpose: Peer/self-assessment provides an opportunity for learners to reflect and provides insight, leading to meaningful feedback on their or other learners' work (behaviours, competencies and experiences). Peer/self-assessment enhances deep learning and understanding among learners and trains learners to track their progress and areas for improvement.

Setting

i. Classroom-based environment
ii. Fieldwork
iii. Laboratory i.e., Science Resources Centres
iv. Studio
v. Workshop

Class size: Peer assessment strategy can be done in small groups or whole class.

Time Frame: The time frame depends on the complexity of the assignment, the estimated period of the lesson stated in the curriculum and how learners have been adequately prepared. However, the time should neither be too short nor too long.

Steps

Before

The teacher should:

i. Set clear expectations of the learning outcome, skills and competencies
ii. Decide the structure and format of the assessment e.g.: written or oral
iii. Introduce the learners to the assignment to be assessed
iv. Develop the assessment criteria and scoring rubrics with learners.

During

The teacher should

i. Model peer/self-assessment by letting learners assess or review what he has taught to open them up to the assessment to be conducted.
ii. For peer assessment, lead the pairing or grouping for the assessment. in doing this, the teacher should consider mixed groupings, and avoid inter- pairing and pairing amongst friends. (fairness and transparency)
iii. In self-assessment, the teacher should guide learners with special educational needs in their assessment through questioning
iv. Provide constructive feedback to learners after the assessment

The learner should:

i. Work and submit assignments
ii. Assess their assignments or that of other learners and give constructive feedback
iii. Reflect on the feedback received and revise the work for final submission

After

The teacher should:

i. Grade the assignments (summative)
ii. Reflect on the activity with learners
iii. Offer help or intervention in areas learners need help
iv. Work on areas that need improvement

NB: The teacher should be a mediator between arguing learners and should also consider and guide learners in their approach to providing feedback. (Be conscious of gender, cultural, social and religious sensitive comments and issues)

Teacher should also provide multiple opportunities or formats for learners to assess to accommodate all learn.

Appendix 3: Teacher Lesson Observation Form

Name of School: .....

Subject being observed: .....

Class

Year 1 ☐ Year 2 ☐ Year 3 ☐

Sex of the teacher

Male ☐ Female ☐

1. Is the purpose of the lesson clearly stated in the lesson plan and focused on learners achieving the lesson learning outcomes?

Yes ☐ In Part ☐ No ☐ NA ☐

1b. Please provide an explanation to your answer in Q1 above

.....

2. Are the unique needs of female learners, male learners, and learners with special education needs adequately catered for in the lesson plan? For example, the choice of teaching methods and learning activities reflects/does not reflect the learning needs of all learners.

For example, the choice of teaching methods, and learning activities.

Yes ☐ In Part ☐ No ☐ NA ☐

2b. Please provide an explanation to your answer in Q2 above

.....

3. Does the teacher manage behaviour well, maintaining a positive and non-threatening learning environment throughout the lesson?

Yes ☐ In Part ☐ No ☐ NA ☐

3b. Please provide an explanation to your answer in Q3 above

.....

4. Are appropriate teaching and learning materials and other resources (including ICT, books, desks) available, accessible and being used to support learning of all females, males and learners with special education needs?

Yes ☐ In Part ☐ No ☐ NA ☐

4b. Please provide an explanation to your answer in Q4 above

.....

5. Are learners engaged on tasks that challenge them in line with the content standards? Does the teacher take into consideration the uniqueness of learners?

Yes ☐ In Part ☐ No ☐ NA ☐

5b. Please provide an explanation to your answer in Q5 above

6. Is there evidence that students are learning?

Yes ☐ In Part ☐ No ☐ NA ☐

6b. Please provide an explanation to your answer in Q6 above

7. Is teaching differentiated to cater for the varied needs of all learners (i.e., male learners, female learners, learners with special education needs) and those with poor literacy and/ or numeracy proficiency?

Yes ☐ In Part ☐ No ☐ NA ☐

7b. Please provide an explanation to your answer in Q7 above

.....

8. Does the teacher use real life examples which are familiar to learners to explain concepts?

Yes ☐ In Part ☐ No ☐ NA ☐

8b. Please provide an explanation to your answer in Q8 above

.....

9. Does the teacher point out or question traditional gender roles when they come up during the lessons as appropriate?

Yes ☐ In Part ☐ No ☐ NA ☐

9b. Please provide an explanation to your answer in Q9 above

.....

10. Does the lesson include appropriate interactive and creative approaches e.g., group work, role play, storytelling to support learners achieving the learning outcomes?

If yes, give examples of the issues and skills that have been so integrated.

Yes ☐ In Part ☐ No ☐ NA ☐

10b. Please provide an explanation to your answer in Q10 above

.....

11. Have cross-cutting issues and /or 21st century skills been integrated into the lesson to support learners in achieving the learning outcomes e.g., problem-solving, critical thinking, communication? If yes, give examples of the issues and skills that have been so integrated.

Yes ☐ In Part ☐ No ☐ NA ☐

11b. If yes, give examples of the issues and skills that have been so integrated.

.....

12. Does the teacher incorporate ICT into their practice to support learning?

Yes ☐ In Part ☐ No ☐ NA ☐

12b. Please provide an explanation to your answer in Q12 above

.....

13. Does the teacher encourage all female male and male learners (including those who may be shy or afraid to speak) to ask questions, answer questions, participate in group work, etc. during the lesson?

Yes ☐ In Part ☐ No ☐ NA ☐

13b. Please provide an explanation to your answer in Q13 above

.....

14. Is assessment evident in the lesson? If yes, does it include assessment as, for or of learning and go beyond recall?

If yes, did it include assessment of, for or as learning and go beyond recall?

Yes ☐ In Part ☐ No ☐ NA ☐

14b. Please provide an explanation to your answer in Q14 above

.....

15. Do learners make use of feedback from teacher and peers?

Yes ☐ In Part ☐ No ☐ NA ☐

15b. Please provide an explanation to your answer in Q15 above

.....

16. Does the teacher sum up the lesson and evaluate the lesson against the learning outcomes with the learners?

Yes ☐ In Part ☐ No ☐ NA ☐

16b. Please provide an explanation to your answer in Q16 above

.....

17. Does the teachers' planning of lessons taught before the one observed show how they plan for learning over time, considering individual and group needs?

Yes ☐ In Part ☐ No ☐ NA ☐

17b. Please provide an explanation to your answer in Q17 above

.....

18. Does the teacher pay attention to the composition of females and males during group work and assigns females leadership roles.

Yes ☐ In Part ☐ No ☐ NA ☐

18b. Please provide an explanation to your answer in Q18 above

.....

19. Does the teacher provide constructive verbal feedback to both females and males and learners with special education needs?

Yes ☐ In Part ☐ No ☐ NA ☐

19b. Please provide an explanation to your answer in Q19 above

.....

20. Does the teacher provide constructive written feedback to both females and males and learners with special education needs in their exercise book?

Yes ☐ In Part ☐ No ☐ NA ☐

20b. Please provide an explanation to your answer in Q20 above

.....

21. Key strengths in the lesson

.....

22. Areas for development

.....

23. Next steps for teacher

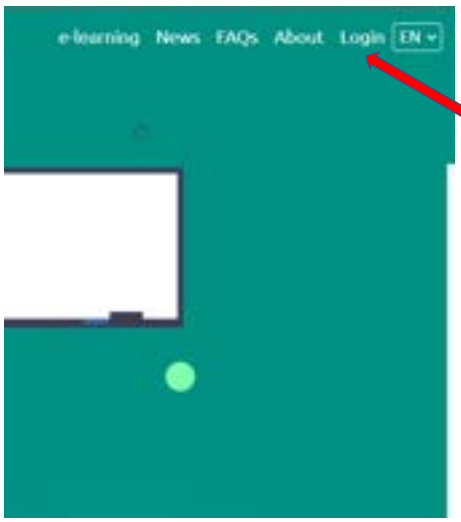
.....

24. Additional Notes (on teacher's actions, the flow of activities, etc.)

.....

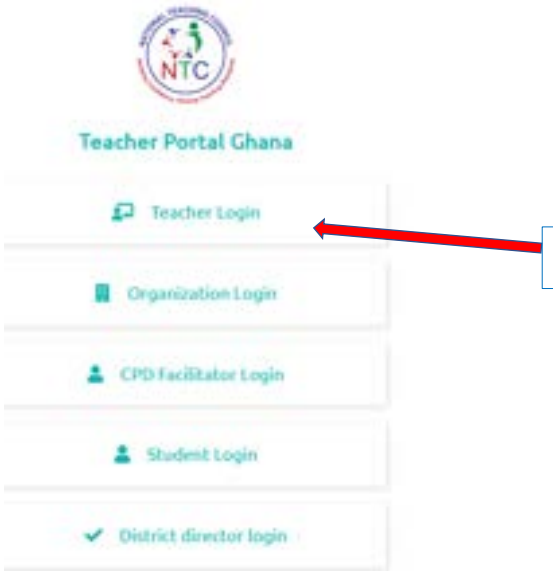
Appendix 4: How to Check CPD Points and Training Records on Teacher Portal Ghana

1. Visit *tpg.ntc.gov.gh* and click Login



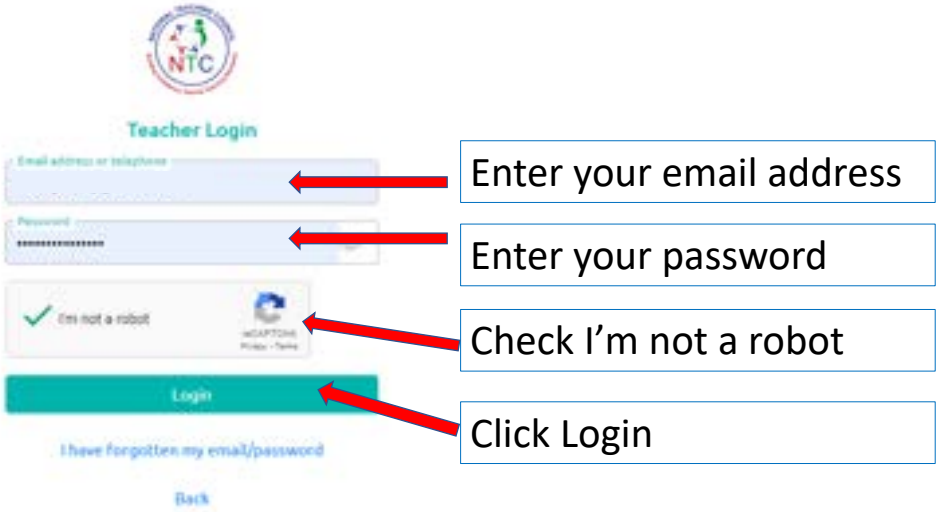
Click Login on the TPG homepage

2. On the Login page, click Teacher Login

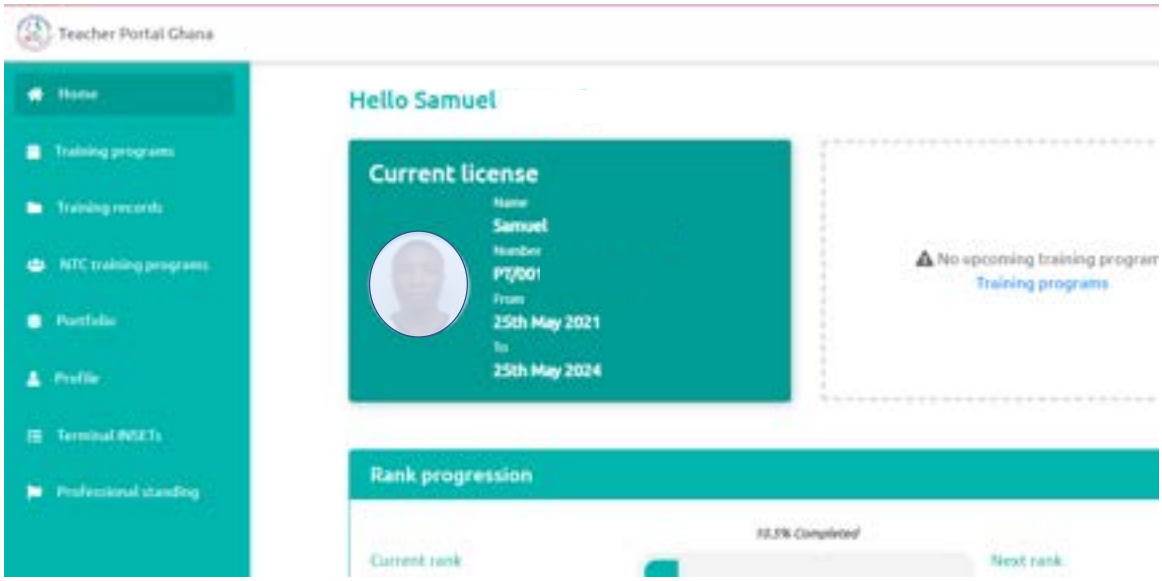


Click Teacher Login

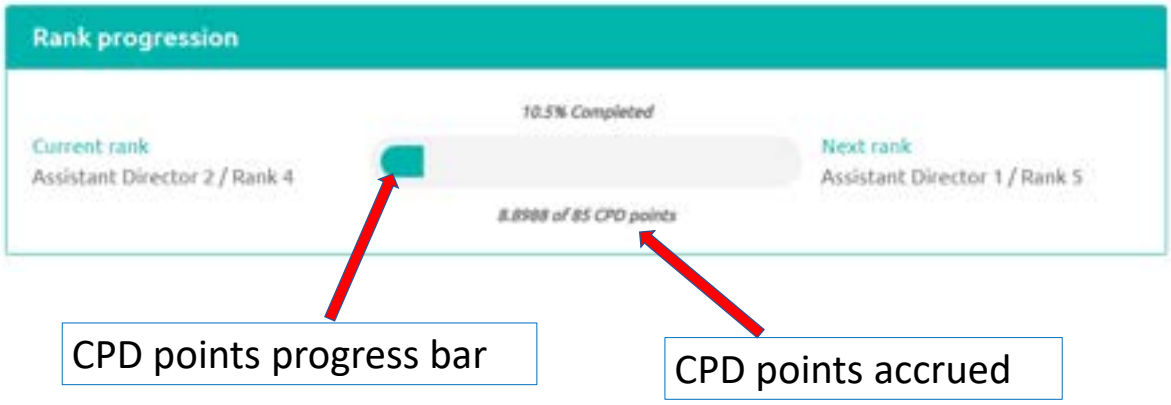
3. On the Teacher Login page enter your email address and password and then click Login



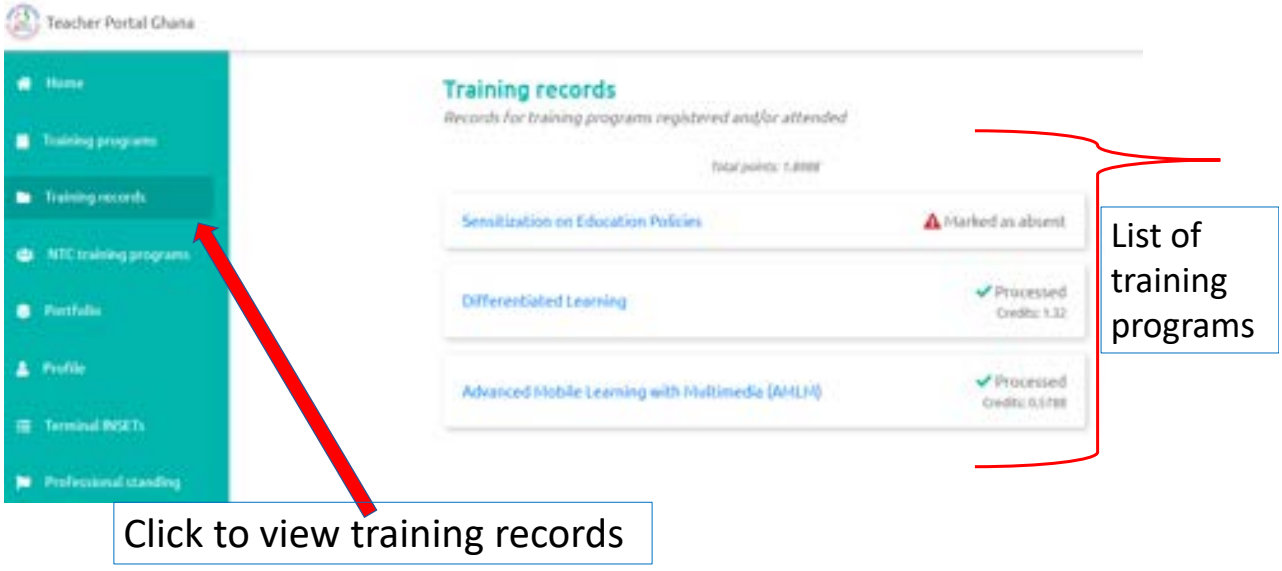
4. After a successful login you will get access to your TPG account (Check image below)



5. To check CPD points, scroll down to Rank progression. You will see the CPD points progress bar and actual points accrued (Check image below)



6. To view training records, from the side menu tap on Training records (Check image below)



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