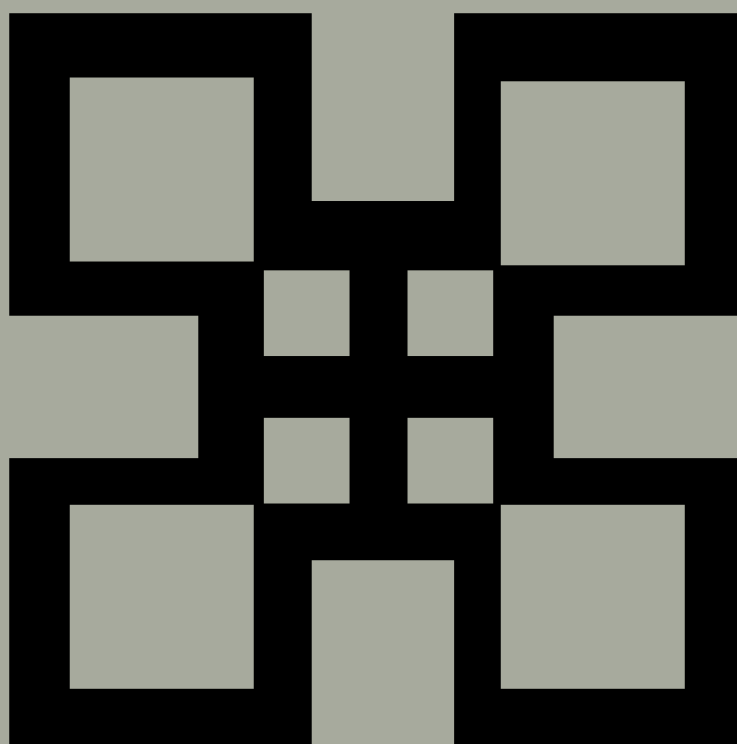


Professional Learning Community Handbook

# Agriculture

Year One



Ghana Education  
Service (GES)



# Professional Learning Community Handbook

## Agriculture

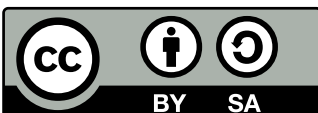
Year One



REPUBLIC OF GHANA



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# Introduction

This Professional Learning Community (PLC) Handbook is designed to enable teachers to deliver effective lessons for Year One of the new Agriculture 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 (TAMTs), 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 21<sup>st</sup> 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, which are described below.

- a. **Group Project:** One (1) group project should be given in week 2 of the first semester and collected from learners in the 8<sup>th</sup> week. The scores for the project should be recorded.
- b. **Class Exercise:** Class exercises/homework conducted in weeks 3, 5 and 9 in the first semester and weeks 13,19 and 20 in the second semester. Two (2) best scores of the learner for these exercises i.e., 1 in each semester should be recorded for the learner.
- c. **Portfolio:** One (1) portfolio should be given in week 1 and submitted in week 22, the scores of the portfolio should be recorded.
- d. **Mid-Semester Examination:** Two (2) mid-semester examinations should be conducted, 1 in each semester, in week 6 for first semester and week 18 for the second semester.

- e. **Individual Project:** One (1) individual project should be given in week 14 and submitted in week 20 for assessment.
- f. **End of Semester Examination:** At the end of each semester, an end of semester examination should be conducted, that is in weeks 12 and 24 of the first and second semester respectively.

# 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: Misconceptions in Agriculture and how to Dispel them

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

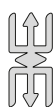
The purpose of the session is to review the learning plan for week 1 by aligning the plan with the Learner Material and appropriate assessment strategies.

### 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 activities 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 poster presentation** (NTS 3k, 3p).

### E.g.

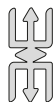
*Make a presentation on five (5) misconceptions in Agriculture as well as how misconceptions in Agriculture can be dispelled.*

Refer to Teacher Manual Section 1, Week 1, pages 17 to 20 and Learner Material Section 1 for more task examples.

### Hint



Give task on Portfolio to learners to be done individually and submitted in week 22. Refer to Appendix A for sample portfolio.



### 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 3n – 3p).

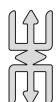
**E.g.**

Assigning a total score of 20 marks for the group poster presentation as shown in the rubrics below:

- a) Expected content answers for misconceptions in Agriculture
  - i. Agriculture is a low-status occupation
  - ii. Agriculture is only for rural areas
  - iii. Modern farming practices are not applicable or affordable
  - iv. Agriculture is solely reliant on rain-fed
  - v. Agriculture is a male-dominated field
- b) Expected content answers for how to dispel misconceptions in Agriculture
  - i. Hands-on projects
  - ii. Agricultural clubs and extracurricular activities
  - iii. Curriculum integration
  - iv. Resource person/experts
  - v. Collaboration with local farmers and Agricultural organisations.
- c) Rubrics for Scoring Group Poster Presentation in Week 1 (20 marks)

Criteria				
	Excellent (4 marks)	Very Good (3 marks)	Fair (2 marks)	Poor (1 mark)
Content	<i>Provides at least four (4) misconceptions in Agriculture and four (4) solutions</i>	<i>Provides three (3) misconceptions in Agriculture and three (3) solutions.</i>	<i>Provides two (2) misconceptions in Agriculture and two (2) solutions.</i>	<i>Provides one (1) misconception in Agriculture and one (1) solution.</i>
Graphics/ Presentations Boards	<i>Slides are attractive. Text is legible. No grammatical errors.</i>	<i>Slides are attractive. Text is legible. Some grammatical errors.</i>	<i>Slides are attractive. Text is not very legible. Some grammatical errors.</i>	<i>Slides are not attractive. Text is not legible. There are several grammatical errors.</i>
Presentation/ Organisation	<i>Presenters make very good eye contact with the audience. All material is presented using language that is original without reading from the screen or page.</i>	<i>Presenters make good eye contact with the audience. Minimal reading from the screen or page.</i>	<i>Presenters make minimal eye contact with the audience. Everything is read directly from the screen or page.</i>	<i>Presenters make no contact with the audience. Everything is read directly from the screen of page.</i>
Time Usage	<i>Presentation meets the 10-minute time requirement.</i>	<i>Presentation is 2-3 minutes under the 10-minute time requirement.</i>	<i>Presentation is 4-6 minutes under the 10-minute time requirement.</i>	<i>Presentation is 8-10 minutes or more under the 10-minute time requirement.</i>
Collaboration	<i>Members actively encourage and support each other; they listen to others' ideas; facilitate group decision-making.</i>	<i>Members participate well; they listen to others' ideas and contribute effectively.</i>	<i>Sometimes listens to others but has difficulty contributing effectively.</i>	<i>Members rarely listen or contribute to team discussions.</i>

**Total – 20 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<sup>st</sup> 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.**

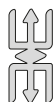
*Explain the task and recommend learning resources to learners, guide them to create PowerPoints and provide feedback on learners PowerPoint slides, presentation style and content, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 97–99 for more information on poster presentation.*

**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.**

*Analyse learners' PowerPoint presentation to know if they followed the instructions given to them, note their strengths and weaknesses for discussion in class, and encourage them to use the feedback on the discussions to improve their next poster presentation, 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:

- 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 2 and related Learner Material (NTS 3a).
- c) bring along your Teacher Manual, PLC Handbook and learning plan on week 2 in preparation for the next session (NTS 3a).



## Appendix A: Sample of Portfolio

### Task

#### E.g.

*Develop a portfolio using your class works, home works, field work, mid-term papers and end of first semester paper to showcase your progress and achievements throughout the academic year. After your portfolio is done, write a brief reflection of not more than 250 words, stating some valuable skills that you have learned, the challenges you faced and things you can do to improve upon your academic progress in the next academic year.*

### Artefacts (items) to be included in the Portfolio

#### E.g.

- a) *Learner's class exercise and homework book for Agriculture*
- b) *Copies of group class exercises*
- c) *Individual project(s)*
- d) *A copy of group project (handwritten or photocopied)*
- e) *A brief reflection (not more than 250 words) on your academic journey for the year, stating what skills you've learned, what challenges you faced on the journey and things you can do to improve upon your achievements in next academic year, etc.*

### Structure and organisation of the Portfolio

#### E.g.

*As part of the structure of the portfolio, learners should have the following details*

- a) *Cover Page (Title, Student name, Student ID, Class, Date of submission)*
- b) *List of Content*
- c) *Items/artefacts should be arranged in order in a 'clear bag/file,' thus exercise book, group exercise, individual project, group project, reflection, test papers, etc.*

### How to Administer

#### E.g.

- a) *Explain the type of portfolio to the learners; a collection of assessments done throughout the academic year*
- b) *Give the portfolio assignment/task to learners in week 1 of first semester*
- c) *Call for the portfolios routinely for evaluation, ensuring that learners are keeping record/ evidence of work done as intended*
- d) *By the 20<sup>th</sup> week, instruct learners to write their reflections and design a cover page for their portfolio*
- e) *Portfolio should be submitted in the 22<sup>nd</sup> week at a time agreed by both teacher and learners, etc.*

Refer to the Teacher Assessment Manual and Toolkit pages 143–149 for more information on how to use portfolio as an assessment strategy.

### Feedback

E.g.

- a) *Routinely inspect portfolio and provide feedback, pointing out any omissions identified in the portfolio*
- b) *Share the results of the portfolio with the learners and commend their efforts*
- c) *Return the items/artefacts to the learners unless otherwise decided by the entire class*
- d) *Encourage learners to keep record of their academic works for future reference, etc.*

### Rubrics for scoring

E.g.

- |                                                                  |                   |
|------------------------------------------------------------------|-------------------|
| a) <i>Cover page</i>                                             | <i>[3 marks]</i>  |
| b) <i>List of content</i>                                        | <i>[2 marks]</i>  |
| c) <i>Introduction</i>                                           | <i>[5 marks]</i>  |
| d) <i>At least a copy of one group class exercise</i>            | <i>[5 marks]</i>  |
| e) <i>Individual project work</i>                                | <i>[5 marks]</i>  |
| f) <i>A copy of group project work</i>                           | <i>[5 marks]</i>  |
| g) <i>Learner's reflection for the year</i>                      | <i>[10 marks]</i> |
| h) <i>Demonstration of creativity and self-directed learning</i> | <i>[5 marks]</i>  |

# PLC SESSION 2: Meaning and Importance of Agricultural Education

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

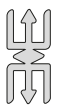
### Learning Outcome

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 activities 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 **essay** (NTS 3k, 3p).

**E.g.**

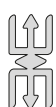
*Write an essay on the need for Agriculture education.*

*Refer to Teacher Manual Section 1, Week 2, pages 21–22 and Learner Material Section 1 for more task examples.*

**Hint**



*Give out group project work this week. It should be submitted in Week 8. See **Appendix B** for sample 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.*

**1.4** 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 3n – 3p).

**E.g.**

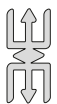
*Assigning a total score of 20 marks for the essay as shown in the rubrics below:*

*Rubrics for Grading Essay in Week 2 on the Need for Agricultural Education*

Criteria	Exemplary (4 marks)	Proficient (3 marks)	Developing (2 marks)	Needs Improvement (1 mark)
Understanding of Agricultural Education	<i>Demonstrates an in-depth understanding of Agricultural education and its importance, addressing multiple facets such as sustainability, food security, and technology.</i>	<i>Shows a good understanding of Agricultural education but may focus on limited aspects.</i>	<i>Shows a basic understanding of Agricultural education but lacks depth or misses key elements.</i>	<i>Demonstrates little to no understanding of Agricultural education or its relevance.</i>

Criteria	Exemplary (4 marks)	Proficient (3 marks)	Developing (2 marks)	Needs Improvement (1 mark)
Clarity of Argument	<i>Presents a clear, compelling argument for the need for Agricultural education, backed by strong reasoning and evidence.</i>	<i>Presents a clear argument with some supporting reasoning and evidence.</i>	<i>Argument is present but lacks clarity or strong support.</i>	<i>Argument is unclear, weak, or not supported by evidence.</i>
Organisation and Structure	<i>Well-organised with a clear introduction, body, and conclusion; ideas flow logically from one to the next.</i>	<i>Has a clear structure with an introduction, body, and conclusion, though transitions may be weak.</i>	<i>Shows some organisation but lacks clear transitions between ideas.</i>	<i>Essay is disorganised with no clear structure or logical flow of ideas.</i>
Depth of Analysis	<i>Thoughtfully analyses the need for Agricultural education, addressing both the current state and future implications.</i>	<i>Provides a solid analysis but may not explore future implications in depth.</i>	<i>Offers limited analysis; focuses more on description than critical thinking.</i>	<i>Provides little to no analysis, with vague or superficial discussion.</i>
Writing Mechanics (Grammar, Spelling, Punctuation)	<i>Free of grammatical, spelling, or punctuation errors; writing is polished and professional.</i>	<i>Contains a few minor errors, but they do not interfere with the overall readability.</i>	<i>Contains several errors that may distract from the overall clarity.</i>	<i>Frequent errors in grammar, spelling, and punctuation significantly hinder readability.</i>

**Total – 20 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<sup>st</sup> 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.**

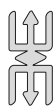
*Provide learners with guidelines on how to write essays, and encourage them to collaborate and tolerate each other's views, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 94 to 97 for more information on how to assess essay.*

**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.**

*Share the scoring rubrics and results of the essay with learners, discuss it, and encourage them to use the feedback for future work, 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 B: Sample of Group Project Work

### Task

#### E.g.

*The project is to identify an agro-based industry in your community and analyse how the industry and Agriculture are interdependent*

### Sample Task

#### E.g.

- a) *In groups, design a questionnaire with a maximum of 10 questions on the interdependency between Agriculture and industry.*
- b) *Visit any agro-based industry in your community and find out about how the work they do depend on Agriculture and vice versa using the designed questionnaire.*
- c) *Interview at least 10 workers from the agro-based industry, it should include the human resource manager, production manager and labourers.*
- d) *Keep accurate records of your interviews.*
- e) *Analyse the data collected and write a report on it.*
- f) *The report should consider cover page, goal and objectives, background, methods, results and recommendations or other deliverables.*
- g) *Record daily attendance for all group members.*

### Submission

*Project should be submitted in week 8 of first semester for scoring.*

### How to Administer

#### E.g.

- a) *At the beginning of lessons for Week 2, inform learners that there will be a group project for them and help the learners to form groups*
- b) *Share the task with learners and explain it to them*
- c) *Provide learners with letters to seek permission from the agro-based industry prior to their visit*
- d) *Encourage cooperation among the group members, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 34–36 for more information on the assessment of project.*

### Feedback

#### E.g.

- a) *Discuss the scoring rubrics with the learners and share the results with them for discussion*

- b) *Let each group share their success and challenging stories during data collection for the project and how they overcame it, etc.*

### Rubrics for Scoring

Assign a total of 27 marks to be scaled down to 20 marks

- a) *Expected content answers for interdependencies between Agriculture and industry.*
- i. *Processing and manufacturing industry: Agriculture produces the basic raw materials for most industries, especially the agro-based industries. Agriculture also depends on industry for the processing of the produce into finished forms for value addition.*
  - ii. *Chemical industry: This industry produces fertilisers, insecticides, pesticides and weedicides for the maintenance of soil fertility, prevention and treatment of diseases, pests and weeds. Agriculture provides the chemical industry with raw materials such as farmyard wastes for the manufacturing of organic fertilisers.*
  - iii. *Mechanical industry: Various types of farm machineries and implements are manufactured by mechanical industry to increase Agricultural productivity. Agriculture intends to provide food to the workers in this industry.*
  - iv. *Financial Institutions: Farmers in the Agricultural sector get loans from the banks and other financial institutions to expand and sustain their farming enterprises. Farmers on the other hand save with these banks and financial institutions to sustain the financial institutions*
  - v. *Transport industry: They are involved in moving Agricultural produce from the farm gate to the marketing and processing centres. The transport industry also depends on the funds obtained from the evacuation of Agricultural produce to sustain their business.*
  - vi. *Research: Researchers carry out experiments to come up with Agricultural innovations, new techniques and technologies to improve crop and animal production. Agriculture in turn provides specimens to researchers for their experiments, feedback on their research outcomes and food for consumption.*
- b) *Rubrics for Grading Group Project Work*

	<b>Excellent (3 marks)</b>	<b>Good (2 marks)</b>	<b>Acceptable (1 mark)</b>
<i>Cover page</i>	<i>States the topic, name, ID and date of submission correctly.</i>	<i>States the topic, name, ID and date of submission with some mistakes.</i>	<i>At least one of these, the topic, name, ID or date of submission is missing and some mistakes are observed.</i>
<i>Background</i>	<i>Provides appropriate introduction, problem statement and justification.</i>	<i>Provides appropriate introduction and problem statement but not justification.</i>	<i>Provides appropriate introduction but not problem statement and justification.</i>

	<b>Excellent (3 marks)</b>	<b>Good (2 marks)</b>	<b>Acceptable (1 mark)</b>
<i>Objectives</i>	<i>Objectives are specific, measurable, achievable, relevant, and time-bound.</i>	<i>Objectives are specific, measurable, achievable, but lacks relevance and time-bound.</i>	<i>Objectives are specific and measurable, but not achievable, relevant, and time-bound.</i>
<i>Methods</i>	<i>Clearly states the study area, the experimental design, data collection procedure and data analysis.</i>	<i>States the study area, the experimental design and data collection procedure, but lacks appropriate data analysis.</i>	<i>States the study area and data collection procedure, but lacks experimental design and data analysis.</i>
<i>Results and discussion</i>	<i>Provide and discuss at least four interdependencies between Agriculture and industry.</i>	<i>Provide and discuss three interdependencies between Agriculture and industry.</i>	<i>Provide and discuss two or less interdependencies between Agriculture and industry.</i>
<i>Conclusion and recommendations</i>	<i>Delivers clear, comprehensive conclusion and recommendations that are well supported by project findings.</i>	<i>Delivers useful conclusion and recommendations that are supported by project findings.</i>	<i>Conclusion and recommendations may not be useful or are weakly supported by project findings.</i>
<i>References</i>	<i>Sources are directly related to the topic, up-to-date and adapted APA (American Psychological Association) style.</i>	<i>Sources are related to the topic and up-to-date, but adapted different formats.</i>	<i>Sources are related to the topic, but out-dated and adapted different formats.</i>
<b>Other criteria to be used by the teacher</b>			
<i>Creativity</i>	<i>Groups exhibit high-level imaginative skills such as inclusion of pictures, graphs and other multimedia contents in their report.</i>	<i>Groups exhibit imaginative and critical thinking skills with the inclusion of few pictures, graphs and other multimedia contents in their report.</i>	<i>Groups exhibit less imaginative and critical thinking skills in their report.</i>
<i>Teamwork</i>	<i>Strong teamwork and active participation by all members of the group.</i>	<i>Teamwork and active participation by some group members.</i>	<i>Poor teamwork and participation.</i>

Total –30 marks

# PLC SESSION 3: Interdependence between Agriculture and Industry

## 1. Introduction (20 minutes)

- 1.1** Share one thing on the lesson for week 2 delivered last week that:
- went well (NTS 1a - 1b, 2a - 2e).
  - you found challenging (NTS 1a - 1b, 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

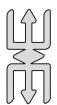
The purpose of the session is to review the learning plan for week 3 by aligning the learning plan with Learner Material and appropriate assessment strategies.

### 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

- 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.
  - 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 activities in your learning plan (NTS 2a - 2f, 3a - 3j).



### Note

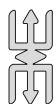
*The selected activities should be included in the teacher/learner activity section of the learning plan.*

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

**E.g.**

*Outline five (5) ways Agriculture and industry depend on each other.*

*Refer to Teacher Manual Section 1, Week 3, pages 27 and 28, and Learner Material Section 1 for more task examples.*



#### 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 3n – 3p).

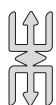
**E.g.**

*The total score for the class exercise is 10 marks. Give two (2) marks for each correct answer, 1 mark for the point and another mark for the outline.*

*Expected answers:*

- a) *Processing industry: Agriculture produces the basic raw materials for processing industry, and Agriculture depends on processing industry for the processing of the produce into finished forms.*
- b) *Chemical industry: Produces fertilisers and insecticides for Agricultural activities, and Agriculture provides the chemical industry with raw materials for the manufacturing of organic fertilisers and insecticides.*
- c) *Mechanical industry: Manufactures farm machineries and implements for Agricultural activities, Agriculture intends to provide food to the workers in this industry.*
- d) *Financial Institutions: Provide funds for farmers and Agricultural workers, while farmers and Agricultural workers save with financial institutions.*
- e) *Transport industry: Moves Agricultural produce from the farm gate to the markets and consumers, and the transport industry depends on the funds obtained from the evacuation of Agricultural produce to sustain their business.*

*2 x 5 = 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 21<sup>st</sup> 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.**

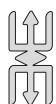
*Provide necessary resources and support learners to succeed in their class exercise (links to websites and materials on the interdependency between Agriculture and industry), etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 80–83 for more information on the assessment of class exercise.*

**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 on learners' work and encourage learners to use the feedback to improve their next class exercise, 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 to 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: Measuring Tools in Agriculture, their Uses and Maintenance

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

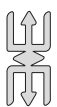
### Learning Outcome

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 activities 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 **multiple choice question** (NTS 3k, 3p).

**E.g.**

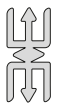
*Multiple Choice Question*

1. *The instrument used for precise measurement of length is .....*

- A. *Surveyor’s tape*
- B. *Tape measure*
- C. *Vernier calliper*
- D. *All of the above*

*1 mark for the correct answer*

*Refer to Teacher Manual Section 2, Week 4, pages 34 to 38 and Learner Material Section 2 for more task examples.*



**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 3n – 3p).

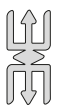
**E.g.**

*Multiple Choice Question*

1. *The instrument used for precise measurement of length is .....*

- A. *Surveyor’s tape*
- B. *Tape measure*
- C. *Vernier calliper*
- D. *All of the above*

*Correct answer is C (1 mark for the correct answer)*



**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<sup>st</sup> 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.**

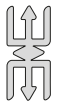
*Provide learners with clear guidelines and sample multiple choice questions and encourage learners to submit their work on time, etc.*

*Refer to pages 83–86 of the Teacher Assessment Manual and Toolkit for further information on multiple choice questions.*

**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.**

*Mark the multiple choice questions immediately, provide feedback on learners' answers and allow them to do corrections on their work, 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 to 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 5 and related Learner Material (NTS 3a).
- c) bring along your Teacher Manual, PLC Handbook and learning plan on *week 5* in preparation for the next session (NTS 3a).

# PLC SESSION 5: Safety Measures Employed in Operating Farm Machines and Power in Agricultural Production

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

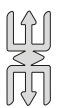
### Learning Outcome

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 activities 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.*

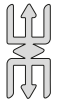
**2.3** Develop assessment tasks/items based on the learning indicator(s) for the week. This week's recommended mode of assessment is **group homework** (NTS 3k, 3p).

**E.g.**

*Provide five (5) safety measures that should be put in place during a farming activity to prevent injuries.*

*Refer to Teacher Manual Section 2, Week 5, pages 44 to 46 and Learner Material Section 2 for more task examples.*

**The homework should be submitted in week 7.**



#### 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 3n – 3p).

**E.g.**

*Assigning a total score of 13 marks for the homework, 10 marks for the safety measures that are put in place during a farming activity and a maximum of 3 marks for teamwork and collaboration.*

a) *Expected answers:*

- i. *Personal Protective Equipment (PPE): Wear PPE such as helmets, safety goggles, ear protection, overalls, gloves, and safety boots to protect against potential hazards including flying debris, noise, chemicals, and falls.*
- ii. *Hazard Identification and Warning Signs: Clear warning signs, labels, and markings should be placed on machines to alert Agricultural workers about potential dangers.*
- iii. *Training and Education: Proper training and education on the safe operation of farm machines is crucial.*
- iv. *Machine Inspection and Maintenance: Regular inspection and maintenance of farm machines is necessary to ensure they are in proper working condition.*
- v. *Safe Start-up and Shutdown Procedures: Following correct start-up and shutdown procedures is crucial for operator safety.*

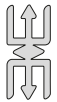
*Give 2 marks for each correct item, 1 mark for stating the point and 1 mark for stating the safety measures that are put in place during a farming activity to prevent injuries on the farm.      2 x 5 = 10 marks*

b) *Teamwork and collaboration*

- i. *Strong teamwork and active participation by all members of the group = 3 marks*
- ii. *Teamwork and active participation by some group members = 2 marks*
- iii. *Poor teamwork and active participation = 1 mark*

*Maximum of 3 marks*

**Total – 13 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<sup>st</sup> 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.**

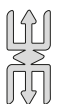
*Ask learners to start their homework at close of class lessons for the day and encourage them to consult their parents or use the internet, when necessary, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 57 to 60 for more examples of how to administer homework.*

**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 bring up questions on safety measures that were unclear for class discussion and use feedback to improve upon their understanding, 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 to 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 in 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, 2a - 2e)
- b) you found challenging (NTS 1a - 1b, 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.

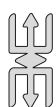
### Learning Outcome

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/marketing 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 activities in your learning plan (NTS 2a - 2f and 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 **mid-semester examination** (NTS 3k, 3p).

**E.g.**

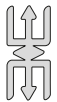
*Section A: Multiple Choice Question*

1. *Which branch of agriculture deals with the production and management of forest resources?*
    - A. *Apiculture*
    - B. *Aquaculture*
    - C. *Silviculture*
    - D. *Olericulture*
- 1 mark for each correct answer*

*Section B: Essay Type Question*

1. *Briefly explain four (4) ways agriculture can be used to solve the unemployment situation in Ghana. (8 marks)*

Refer to the **Appendix C** for the table of specifications for sampling and writing of the test items.



**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 3n – 3p).

**E.g.**

*Section A: Multiple Choice Question*

1. *Which branch of agriculture deals with the production and management of forest resources?*
  - A. *Apiculture*
  - B. *Aquaculture*
  - C. *Silviculture*
  - D. *Olericulture*

*Correct answer is C*

*1 mark for each correct answer (20 questions)*

**Total – 20 marks**

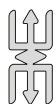
### Section B: Essay Type Question

1. Briefly, explain four (4) ways agriculture can be used to solve the unemployment situation in Ghana.

Expected Answers:

- i. *Job creation: Farming, processing and marketing agricultural products can generate employment opportunities.*
- ii. *Entrepreneurship: Encouraging young people to start agribusinesses can create jobs and stimulate local economies.*
- iii. *Value addition: Processing and transforming raw agricultural products into higher-value goods can increase income and employment.*
- iv. *Rural development: Investing in agriculture can revitalise rural areas, reducing urban migration and creating jobs in rural communities.*

1 mark for stating the point and 1 mark for a correct sentence, that is,  $2 \times 4 = 8$  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<sup>st</sup> 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.**

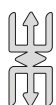
*Provide clear instructions, resources and conducive environment needed for the tasks, etc.*

*Refer to pages 83–86 and 94–97 of Teacher Assessment Manual and Toolkit for more information on assessment of multiple choice and essay type questions, respectively.*

- 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 learners' performance with them individually and as a class and encourage learners to use the feedback to improve 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 6 to 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 C: Table of Specification for Mid Semester Examination

Consider the following for the Mid–semester Examinations:

- a) *Cover content from weeks 1–5, taking into consideration DoK 1–4 levels.*
- b) *Resources:*
  - i. *Answer Booklets*
  - ii. *Learning Material*
  - iii. *Teacher Manual*
  - iv. *Teacher Assessment Manual Toolkit*
- c) *The test should include*
  - i. *Section A– Multiple Choice Questions (20 questions for 20 marks, 1 mark for each question)*
  - ii. *Section B– (5 Essay Type Questions, 3 to be answered by learners for 30 marks, 10 marks per question)*

*Sample questions:*

*Section A: Multiple Choice Question: 1 mark for each correct answer*

1. *Which branch of agriculture deals with the production and management of forest resources?*
  - A. *Apiculture*
  - B. *Aquaculture*
  - C. *Silviculture*
  - D. *Olericulture*

*Section B: Essay Type Question*

1. *Briefly explain four (4) ways agriculture can be used to solve the unemployment situation in Ghana. (8 marks)*
- d) *Time: 1 hours 30 minutes*
  - e) *Total Score: 50 marks to be scaled down to 20 marks for submission.*
  - f) *Prepare table of specification*

Table of specification for item construction for section A and B

Weeks	Focal Area(s)	Types of Questions	DoK Levels				Total
			1	2	3	4	
1	<i>Misconceptions in Agriculture and how to Dispel them</i>	<i>Multiple Choice</i>	2	3	1	-	6
		<i>Essay</i>	1	1	1	-	3
2	<i>Meaning and Importance of Agricultural Education</i>	<i>Multiple Choice</i>	2	3	1	-	6
		<i>Essay</i>	1	-	1	-	2
3	<i>Interdependence between Agriculture and Industry</i>	<i>Multiple Choice</i>	1	3	2	1	6
		<i>Essay</i>	1	1	1	-	3
4	<i>Measuring Tools in Agriculture, their Uses and Maintenance</i>	<i>Multiple Choice</i>	2	3	2	-	7
		<i>Essay</i>	1	1	1	1	4
5	<i>Safety Measures Employed in Operating Farm Machines and Power in Agricultural production</i>	<i>Multiple Choice</i>	2	3	1	-	6
		<i>Essay</i>	1	1	-	1	3
6	<i>Meaning and causes of Injuries in Agricultural Production</i>	<i>Multiple Choice</i>	1	1	2	-	4
		<i>Essay</i>	-	-	-	-	0
		<b>Total</b>	<b>15</b>	<b>20</b>	<b>13</b>	<b>2</b>	<b>50</b>

# PLC SESSION 7: Types and Uses of Farm Machines and Power in Agricultural Production

## 1. Introduction (20 minutes)

- 1.1** Share one thing on the lesson for week 6 and mid-semester examination that:
- went well (NTS 1a -1b, 2a – 2c)
  - you found challenging (NTS 1a -1b, 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

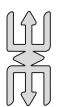
The purpose of the session is to review the learning plan for week 7 by aligning the learning plan with Learner Material and appropriate assessment strategies.

### 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

- 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.
  - 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 **discussion** (NTS 3k, 3p).

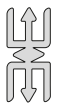
**E.g.**

*Discuss the uses of farm machines and power in Agricultural production.*

*Refer to Teacher Manual Section 2, Week 7, pages 54 to 60 and Learner Material Section 2 for more task examples.*

#### Hint

*The group homework assigned in week 5 is due for submission this week (week 7).*



#### 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 3n – 3p).

**E.g.**

*Assigning a total of 13 marks for the discussion.*

- a) *Five (5) identified machines with the appropriate discussion of their uses (2 marks each)*

*For instance;*

- i. *Tractors: Used for ploughing, planting, harvesting, hauling and general fieldwork.*
- ii. *Combine Harvesters: Used for harvesting crops such as wheat, corn, soya beans and rice.*
- iii. *Silage Harvesters: Used for harvesting and chopping forage crops such as corn or grass for ensiling.*
- iv. *Milking Machines: Used for mechanised milking of dairy animals such as cow or goat.*
- v. *Fish Graders: Used to sort fish by size, etc.*

*1 mark for stating the farm machines and power in Agricultural and 1 mark for providing the correct use of it, that is, 2x5=10 marks*

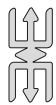
- b) *Teamwork and collaboration*

- i. *Strong teamwork and active participation by all members of the group = 3 marks*
- ii. *Teamwork and active participation by some group members = 2 marks*



- iii. Poor teamwork and active participation = 1 mark

*Maximum of 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 21<sup>st</sup> 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.**

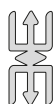
*Show short videos or documentaries on the uses of farm machines and power in Agricultural production, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 66–69 for more information on discussion.*

- 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 feedback on common mistakes and areas for improvement during the group discussion and encourage learners to use the feedback to improve subsequent discussions, 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 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: Principal Parts of Farm Machines and Implements and their Functions

## 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, 2a – 2e)
- b) you found challenging (NTS 1a – 1b, 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, 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 8 by aligning the learning plan with Learner Material and appropriate assessment strategies.

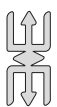
### Learning Outcome

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 activities 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 **demonstration** (NTS 3k, 3p).

**E.g.**

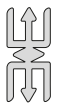
*Demonstrate the use of knapsack sprayer to apply weedicide at the school farm.*

*Refer to Teacher Manual Section 2, Week 8, pages 62–67 and Learner Material Section 2 for more task examples.*

#### Hint



*The report of the group project work assigned in week 2 is due for submission this week (week 8).*



#### 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 3n – 3p).

**E.g.**

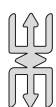
*Assigning a grade of A, B, C, D and E, that is excellent, very good, good, satisfactory and needs improvement, respectively for the demonstration.*

- a) *Demonstrating the use of knapsack sprayer to apply weedicide*
  - i. *Step 1: Wear protective gear: Put on protective clothing, including gloves, goggles, and a mask, to protect yourself from contact with the pesticide.*
  - ii. *Step 2: Adjust nozzle and spray pattern: Adjust the nozzle to the desired spray pattern (fan or cone) and adjust the spray intensity by twisting the nozzle accordingly.*
  - iii. *Step 3: Thoroughly inspect the sprayer for any fault such as leaks, damage to handles and proper functioning of all parts.*
  - iv. *Step 4: Calibrate the knapsack to ensure that it is dispensing the correct amount of liquid per hectare through the selected nozzle.*
  - v. *Step 5: Prepare the pesticide solution: Dilute the pesticide or herbicide as instructed by the manufacturer, ensuring proper mixing.*
  - vi. *Step 6: Fill the knapsack sprayer: Pour the prepared pesticide solution into the tank of the knapsack sprayer. Close the tank securely to prevent leakage.*

- vii. *Step 7: Strap on the knapsack sprayer: Position the knapsack sprayer on your back and secure the straps for comfortable and secure carrying.*
- viii. *Step 8: Prime and pressurise: Prime the sprayer by pumping the handle to build pressure in the tank. Ensure sufficient pressure for effective spraying.*

b) *Grading learners on demonstration*

- i. *Excellent (A): Followed all steps correctly*
- ii. *Very good (B): Missed a step*
- iii. *Good (C): Missed only two steps*
- iv. *Satisfactory (D): Missed three steps*
- v. *Needs improvement (E): Missed 4 or more steps*



**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 the different modes of responses provided by learners.*
- iii. *Discuss how you will observe and integrate character qualities, national values and 21<sup>st</sup> 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.**

*Guide learners to take the necessary steps to prepare for the demonstration by reviewing the instructions on how to apply weedicides and to wear PPEs prior to spaying, and task them to follow the instructions during the demonstration, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 62–72 for more information on how to administer demonstration as 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.**

*Identify specific steps where learners need further assistance or practice, seek out additional resources/support such as online videos or as trials/rehearsals to guide their learning and assessment, etc.*

### 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: Classification of Crops

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

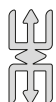
### Learning Outcome

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 activities 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.*

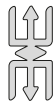
**2.3** Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week’s recommended mode of assessment is **homework (individual)** (NTS 3k, 3p).

**E.g.**

Create a classification tree of crops based on their growth cycle.

Refer to Teacher Manual Section 3, Week 9, pages 79 to 81 and Learner Material Section 3 for more task examples.

The homework should be submitted in week 11.



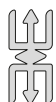
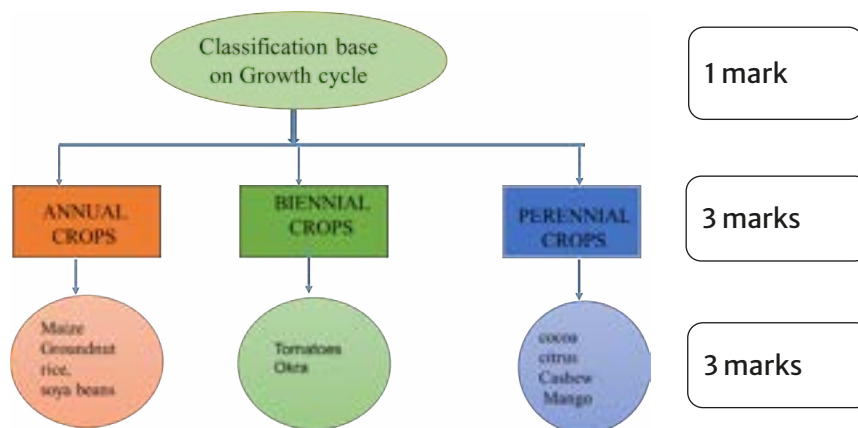
**Note**

- 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 3n – 3p).

**E.g.**

Assessing learners for a total score of 10 marks on the classification of tree crops based on growth cycle using the chart below:



**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<sup>st</sup> 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.**

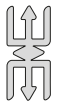
*Support learners with resources needed to create the charts, go round during the charts, provide feedback on learners' charts, and be available to answer and clarify learners' questions on the task, etc.*

*Refer to pages 57–60 of the Teacher Assessment Manual and Toolkit for further information on homework.*

**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.**

*Observe learners' charts, award marks and support learners to correct their mistakes, 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: Principles of Crop Production

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

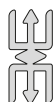
### Learning Outcome

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 activities in your learning plan (NTS 2a – 2f, 3a – 3j).



### Note

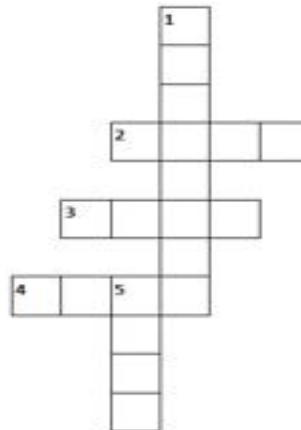
*The selected activities should be included in the teacher/learner activity section of the learning plan.*

**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 **gamification** (NTS 3k, 3p).

**E.g.**

Fill in the puzzle below on principles of crop production using clues under the headings Across and Down.

### Principles of Crop Production



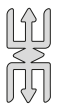
#### Across

2. Choosing the right species is crucial for successful production
3. Compete with crops for resources
4. Causes significant yield losses

#### Down

1. Essential for plant growth
5. Foundation of crop production

Refer to Teacher Manual Section 3, Week 10, pages 82 to 83 and Learner Material Section 3 for more task examples.



#### 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 3n – 3p).

**E.g.**

Assigning a total of 10 marks for completing the puzzle correctly within 5 minutes.

1 mark for each correctly identified word filled in the puzzle (5 marks)

#### **Fastness of completion**

5 marks for completing the puzzle correctly within 1 minute

4 marks for completing the puzzle correctly within 2 minutes

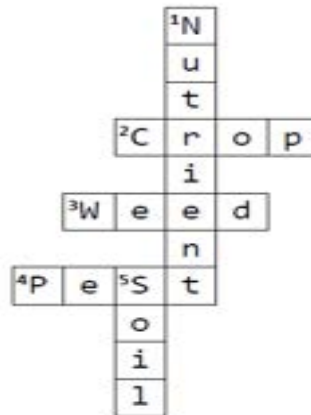
3 marks for completing the puzzle correctly within 3 minutes.

2 marks for completing the puzzle correctly within 4 minutes.

1 mark for completing the puzzle correctly within 5 minutes.

No marks for completing after 5 minutes.

## Principles of Crop Production



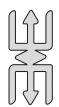
### Across

- 2. Choosing the right species is crucial for successful production
- 3. Compete with crops for resources
- 4. Causes significant yield losses

### Down

- 1. Essential for plant growth
- 5. Foundation of crop production

Across	Down
2. Crop	1. Nutrients
3. Weed	5. Soil
4. Pest	



### 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<sup>st</sup> 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.**

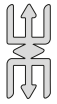
Explain the nature of the exercise to learners, task them to identify key terms associated with the principles of crop production and develop a puzzle with it, etc.

*Refer to pages 105–106 of the Teacher Assessment Manual and Toolkit for further information on assessment using gamification.*

- 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 feedback on common mistakes of learners and areas of improvement and encourage learners to use the feedback to improve their next work, 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: Hands-on and Observation of Farm Practical Activities to Acquire Skills in the Principles of Crop Production

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

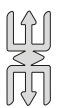
### Learning Outcome

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/markings 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 activities 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 assessment** (NTS 3k, 3p)

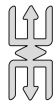
**E.g.**

*Perform seed quality check on maize seeds and write a report on your observation.*

*Refer to Teacher Manual Section 3, Week 11, pages 88 to 90 and Learner Material Section 3 for more task examples for more information on practical assessment.*

**Hint**

- i. The individual homework assigned in week 7 is due for submission this week (week 11).*
- ii. Report on the activity should be submitted before the end of the first semester examination.*



**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 3n – 3p).

**E.g.**

*Assigning ‘yes,’ ‘in-part’ or ‘no’ for the report presented on the practical. The teacher should adequately guide and support learners to perform the experiment and concentrate his/her assessment on the report presented by learners by checking whether the following as shown in the rubrics below have been addressed.*

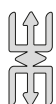
*Rubrics for assessing learners on seed germination practical*

	Yes	In-part	No
<i>The topic provided by the learner is appropriate</i>			
<i>The introduction is well written</i>			
<i>The objective is SMART</i>			
<i>The methods are well performed</i>			
<i>The results and discussion are well presented</i>			
<i>Appropriate conclusion and recommendation have been drawn</i>			

**Hint**



*This checklist rubrics is necessary for instructional management purposes of formative assessment*



### 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<sup>st</sup> 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.

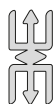
*Discuss the purpose of the practical exercise with learners, put them into mixed gender groups of 2-5 and provide them with the necessary tools and resources for the activity, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 46-49 for further information on the assessment of practical activities.*

**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.

*Identify and discuss areas of the report that need improvement and encourage learners to improve in the next practical and reporting, 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, 2a – 2e)
- b) you found challenging (NTS 1a – 1b, 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.

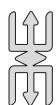
### Learning Outcome

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/marketing 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 activities 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.**

*Section A: Multiple Choice Question*

1. Which of the following is a safe practice when applying fertilizers and pesticides?
  - A. Applying them during strong winds
  - B. Eating and drinking during application
  - C. Ignoring weather conditions
  - D. Using calibrated application equipment (1 mark for each correct answer)

*Section B: Essay Type Question*

1. Describe the use of each of the following survey instruments on the farm:
  - a) Tape measure
  - b) Survey compass (6 marks)

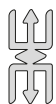
*Section C: Practical*

1. Specimen A is a complete manual knapsack sprayer
  - a) State three precautions you will take to ensure that while using the specimen on a farm, it does not pose health risk to the user. (3 marks)
  - b) Apart from pesticide application, state three uses of the specimen in a crop farm (3 marks)
  - c) Give two ways of maintaining the specimen after use. (2 marks)
  - d) State two uses of the specimen in livestock production. (2 marks)

#### Hint



Refer to the **Appendix D** for the table of specifications for sampling and writing of the test items.



#### 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 3n – 3p).

**E.g.**

*Section A: Multiple Choice Question*

1. Which of the following is a safe practice when applying fertilizers and pesticides?
  - A. Applying them during strong winds
  - B. Eating and drinking during application
  - C. Ignoring weather conditions
  - D. Using calibrated application equipment

*Correct answer is D (1 mark for each correct answer)*

*Section B: Essay Type Question*

*Expected answers*

1. Description of use of survey instruments on the farm:
  - a) Tape measure
    - i. Plotting fields/mark out plots
    - ii. Measuring planting rows
    - iii. Estimating yields
    - iv. Irrigation systems/setting up drip lines etc.
    - v. Measuring size of pens or enclosures  
–Garden planning/laying out beds, pathways and proper spacing.
  - b) Survey compass
    - i. Land mapping and plotting
    - ii. Boundary marking
    - iii. Irrigation planning
    - iv. Road and pathway layout
    - v. Plantation layout
    - vi. Construction planning
    - vii. Fencing

*(3 x 1 + 3 x 1= 6 marks)*

*Section C: Practical*

1. *Specimen A is a complete manual knapsack sprayer*

- a) *Precautions during use of specimen E/manual knapsack sprayer so it does not pose health risk to user.*
- i. *Read the Instructions for use of sprayer and chemical*
  - ii. *Wear Protective gear*
  - iii. *Check for leaks*
  - iv. *Apply only the recommended amount of chemical/use chemicals responsibly*
  - v. *Avoid direct exposure to chemicals when using it*
  - vi. *Clean equipment thoroughly*
  - vii. *Avoid eating or drinking during use*

**(3 x 1 = 3 marks)**

- b) *Other uses of the specimen E/manual knapsack sprayer in a crop farm apart from pesticide application*
- i. *Fertiliser application*
  - ii. *Watering*
  - iii. *Apply cleaning solutions to farm equipment and tools*
  - iv. *Apply soil conditioners or soil amendments in liquid form*

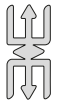
**(3 x 1 = 3 marks)**

- c) *Ways of maintaining the specimen E/manual knapsack sprayer after use.*
- i. *Clean nozzle and filters*
  - ii. *Store in cool dry place*
  - iii. *Inspect for damage and repair*
  - iv. *Flush the system with clean water to remove chemical residue*
  - v. *Wash and dry sprayer*
  - vi. *Lubricate moving parts*

**(2 x 1 = 2 marks)**

- d) *Uses of specimen E/manual knapsack sprayer in livestock production.*
- i. *Spraying pesticides on animals*
  - ii. *Spraying pesticides in animal housing*
  - iii. *Spraying water on animals*
  - iv. *Deworming*
  - v. *Vaccination*

**(2 x 1 = 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 21<sup>st</sup> century skills that align with the lesson for the week and include these in your scoring.*

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

**E.g.**

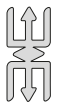
*Discuss the structure of the test with learners, provide learners further hint for the practical examination, create a conducive environment during examinations, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 41–43, 83–86 and 94–97 for more information on test of practical knowledge, multiple choice and essay type questions, respectively.*

**2.5** 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.**

*Returned marked answer booklets to learners promptly, discuss their performance with them (individually and as class) and encourage them to use the feedback to improve their learning, 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 D: Table of Specification for End of Semester Examination

Consider the following for the end of semester examinations:

- a) Cover content from weeks 1–12, taking into consideration DoK levels 1–4.
- b) Resources:
  - i. Answer Booklets
  - ii. Learning Material
  - iii. Teacher Manual
  - iv. Teacher Assessment Manual and Toolkit
  - v. Specimen and Materials for Practical Examination
- c) The test should include
  - i. Section A– Multiple Choice Questions (40 questions for 40 marks, 1 mark for each question)
  - ii. Section B– (5 Essay Type Questions, 3 to be selected for 60 marks, 20 marks per question)
  - iii. Practical Section – (5 questions, Answer all questions for 100 marks, 20 marks per question)
- d) Time: 1 hour 30 minutes for Section A and B and 1 hour for practical examination.
- e) Total Score: 200 marks to be scaled down to 60 marks.
- f) Sample question:

### Section A: Multiple Choice Question

1. Which of the following is a safe practice when applying fertilizers and pesticides?
  - A. Applying them during strong winds
  - B. Eating and drinking during application
  - C. Ignoring weather conditions
  - D. Using calibrated application equipment (1 mark for each correct answer)

### Section B: Essay Type Question

1. Describe the use of each of the following survey instruments on the farm:
  - a) Tape measure
  - b) Survey compass (6 marks)

*Section C: Practical**1. Specimen A is a complete manual knapsack sprayer*

- a) State three precautions you will take to ensure that while using the specimen on a farm, it does not pose health risk to the user. (3 marks)*
- b) Apart from pesticide application, state three uses of the specimen in a crop farm (3 marks)*
- c) Give two ways of maintaining the specimen after use. (2 marks)*
- d) State two uses of the specimen in livestock production. (2 marks)*

*Table of specification for item construction for section A, B and C*

Weeks	Focal Areas	Types of Questions	DoK Levels				Total
			1	2	3	4	
1	Misconceptions in Agriculture and how to Dispel them	Multiple Choice	2	2	2	-	6
		Essay	1	1	1	-	3
		Test of Practical	-	-	-	-	-
2	Meaning and Importance of Agricultural Education	Multiple Choice	2	3	1	-	6
		Essay	-	1	-	-	1
		Test of Practical	-	-	-	-	-
3	Interdependence between Agriculture and Industry	Multiple Choice	2	3	2	-	7
		Essay	-	-	1	-	1
		Test of Practical	-	-	-	1	1
4	Measuring Tools in Agriculture, their Uses and Maintenance	Multiple Choice	2	3	2	-	7
		Essay	-	1	1	-	2
		Test of Practical	-	-	-	-	-
5	Safety Measures Employed in Operating Farm Machines and Power in Agricultural Production	Multiple Choice	2	3	1	-	6
		Essay	-	1	1	-	2
		Test of Practical	-	-	-	-	-
6	Meaning and causes of Injuries in Agricultural Production	Multiple Choice	2	2	1	-	5
		Essay	1	1	1	-	3
		Test of Practical	-	-	-	-	-
7	Types and Uses of Farm Machines and Power in Agricultural Production	Multiple Choice	2	3	2	-	7
		Essay	-	-	1	-	1
		Test of Practical	-	-	-	1	1

Weeks	Focal Areas	Types of Questions	DoK Levels				Total
			1	2	3	4	
8	Principal Parts of Farm Machines and Implements and their Functions	Multiple Choice	2	3	1	-	6
		Essay	-	1	1	-	2
		Test of Practical	-	-	-	-	-
9	Classification of Crops	Multiple Choice	2	2	2	-	6
		Essay	-	-	1	-	1
		Test of Practical	-	-	-	1	1
10	Principles of Crop Production	Multiple Choice	3	3	1	-	7
		Essay	-	1	-	-	1
		Test of Practical	-	-	-	-	-
11	Hands-on and Observation of Farm Practical Activities to Acquire Skills in the Principles of Crop Production	Multiple Choice	3	2	1	-	6
		Essay	1	1	1	-	3
		Test of Practical	-	-	-	-	-
12	Meaning and Importance of Farm Animals	Multiple Choice	3	2	1	-	6
		Essay	-	1	-	-	1
		Test of Practical	-	-	-	1	1
		<b>Total</b>	<b>30</b>	<b>40</b>	<b>26</b>	<b>4</b>	<b>100</b>

# PLC SESSION 13: Management Systems Involved in Animal Production

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

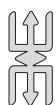
The purpose of the session is to review the learning plan for week 13 by aligning the learning plan with Learner Material and appropriate assessment strategies.

### 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 activities 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.*



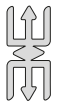
**2.3** Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **homework (individual)** (NTS 3k, 3p).

**E.g.**

*Enumerate three (3) advantages and disadvantages each of the management systems in animal production.*

*Refer to Teacher Manual Section 4, Week 13, pages 16 to 20 and Learner Material Section 4 for more task examples.*

*Learners are to submit the homework in week 15.*



#### 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 3n – 3p).

**E.g.**

*Assigning a total mark of 18 to the advantages and disadvantages of the farming systems, that is 1 mark for each point as indicated below:*

a) *Extensive system*

i. *Advantages:*

- *Utilises natural forage resources and reduces feed costs.*
- *Allows animals to exhibit natural behaviours and social interactions.*
- *Generally, requires lower capital investment in housing and infrastructure.*

ii. *Disadvantages:*

- *May result in lower production efficiency compared with intensive systems.*
- *Requires extensive land and may not be suitable for high-density production.*
- *Animals are exposed to bad weather, predators and disease conditions.*

*1 mark for each point 1 x 6 = 6 marks*

b) *Semi-Intensive System*

i. *Advantages:*

- *Natural forage utilisation and feed cost is better than the intensive system.*
- *Capital investment is less intensive compared to the intensive system.*
- *Better control of feeding and health management than the extensive system.*

ii. *Disadvantages:*

- *Capital intensive compared to the extensive system.*
- *May require more land compared to the intensive system.*
- *Animals can easily be stolen or knock down by vehicles when they are released for feeding.*

1 mark for each point 1 x 6 = 6 marks

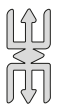
c) *Intensive Systems*i. *Advantages:*

- *Allows for high-density stocking, maximising production per unit area.*
- *Provides precise control over nutrition, health and environmental conditions.*
- *Protects animals from adverse weather and predation.*

ii. *Disadvantages:*

- *Requires significant capital investment in housing and equipment.*
- *Potential for environmental and welfare concerns in crowded conditions.*
- *Dependency on external feed sources may increase production costs*

1 mark for each point 1 x 6 = 6 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<sup>st</sup> 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.**

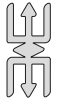
*Set a reasonable time frame for completion and submission of the homework, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 57–60 for more information on the assessment of homework.*

**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.**

*Score, share and discuss the scoring with learners highlighting on their strengths and areas for improvement in their next homework, 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: Skills in Farm Animal Management Practices for Rearing Animals

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

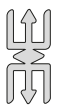
### Learning Outcome

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 activities 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 **test of practical knowledge** (NTS 3k, 3p).

**E.g.**

1. *Specimen A is an equipment used in animal production, study the specimen and answer the following questions below:*



*Specimen A*

- a) *Identify specimen A. (1 mark)*
- b) *State the use of specimen A. (1 mark)*
- c) *Outline three (3) importance of using specimen A. (2 marks)*
- d) *List three (3) other methods that can be used to achieve the same purpose as specimen A. (3 marks)*
- e) *Enumerate two (2) ways of maintaining specimen A (2 marks)*

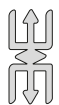
*Refer to Teacher Manual Section 4, Week 14, pages 21 to 24 and Learner Material Section 4 for more task examples.*

**Hint**



*Give out individual project work this week. It should be submitted in Week 20. See **Appendix E** for sample 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.*

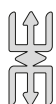
**2.4** Discuss (and agree as a subject group) how you will develop the marking scheme/ rubrics for scoring the assessment task(s)/item(s) for the week’s recommended assessment (NTS 3n – 3p).

**E.g.**

*Expected answers*

- a) *Identification of specimen A.*  
*Ear tag applicator (1 mark)*

- b) *Use of specimen A.*  
*For applying ear tags on the ears of farm animals* (1 mark)
- c) *Three importance of using specimen A.*
- i. *Identification of animals to track their performance*
  - ii. *Identification of animals to track treatment regimes*
  - iii. *Identification of animals to increase the accuracy of record keeping* (1 x 3 = 3 marks)
- d) *Three (3) other methods that can be used to achieve the same purpose as specimen A.*
- i. *Ear notching*
  - ii. *Branding*
  - iii. *Neck chains* (1 x 3 = 3 marks)
- e) *Two (2) ways of maintaining specimen A*
- i. *Clean after use*
  - ii. *Store in a cool dry place* (1 x 2 = 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 21<sup>st</sup> 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.**

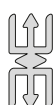
*Show a documentary on management practices carried out in animal production, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 41–43 for more information on the assessment of test of practical knowledge.*

**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 feedback on learners' work, highlighting strengths and areas for 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 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).



## Appendix E: Sample of Individual Project Work

### Task

#### E.g.

*The objective is to undertake a project on how agroforestry systems in our community ensure sustainable agriculture and present a report on it.*

### Sample Task

#### E.g.

- a) *Visit your community and find out how agroforestry systems ensure sustainable Agriculture.*
- b) *Interview at least five (5) people including farmers and staff of ministry of Agriculture/ forestry where applicable.*
- c) *Analyse the data collected and write a report on it.*
- d) *The report should consider cover page, goal and objectives, background, methods, results and recommendations or other deliverables.*

### Submission

*Project should be submitted latest in week 20 of second semester for scoring.*

### How to Administer

#### E.g.

- a) *At the beginning of lessons for Week 13, inform learners that there will be individual project work*
- b) *Share the task with learners, provide them with guidelines and how the project will be assessed*
- c) *Provide learners with introductory letters to assist them in seeking information from farmers or staff of ministry of agriculture/forestry where necessary, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 34–36 for more information on the assessment of project.*

### Feedback

#### E.g.

- a) *Provide individual feedback on learners' project and let them reflect on the outcome of their work*
- b) *Let learners to talk about their work, the challenges they faced when working as individuals and clarify difficulties of learners, etc.*



### Rubrics for Scoring

Assign a total of 24 marks to be scaled down to 20 marks

- a) *Expected answers for how agroforestry systems ensure sustainable Agriculture for the results and discussion.*
- i. *Alley Cropping: Involves the planting of trees or shrubs at regular intervals in rows within an agricultural field. This system provides shade, reduces wind erosion, improves soil fertility through nutrient cycling, and provides timber or other tree products.*
  - ii. *Silvopasture: It is the combination of tree planting with livestock grazing. Trees are spaced to allow for grazing underneath, providing shade and forage for livestock. This system enhances livestock productivity, improve soil quality, and sequester carbon.*
  - iii. *Windbreaks: Windbreaks consist of trees or shrubs planted along the edges of fields or farms to reduce wind speed and protect crops and livestock. They act as physical barriers, preventing wind erosion and reducing stress on plants and animals.*
  - iv. *Agroforestry Gardens: Home gardens are multi-layered agroforestry systems found around households and typically include fruit trees, timber trees, vegetables, and medicinal plants. Home gardens provide diverse food sources, support biodiversity, and contribute to household nutrition and income.*
  - v. *Taungya System: The Taungya system involves the temporary association of crops with tree planting. Farmers cultivate annual crops between newly planted tree seedlings to make productive use of land during the early establishment of the trees and once the trees mature, the agricultural component is gradually phased out.*
  - vi. *Community Forest Management: Community Forest management involves collaborative efforts by local communities to manage and utilise forest resources sustainably. Agroforestry practices such as fruit tree plantations, can be integrated into community-managed forests to diversify income sources and enhance ecosystem services.*

b) *Rubrics for Grading Individual Project Work in Week 15*

	<b>Excellent (3 marks)</b>	<b>Good (2 marks)</b>	<b>Acceptable (1 mark)</b>
<i>Cover page</i>	<i>States the topic, name, ID and date of submission correctly.</i>	<i>States the topic, name, ID and date of submission with some mistakes.</i>	<i>At least one of these, the topic, name, ID or date of submission is missing and some mistakes are observed.</i>
<i>Background</i>	<i>Provides appropriate introduction, problem statement and justification.</i>	<i>Provides appropriate introduction and problem statement but not justification.</i>	<i>Provides appropriate introduction but not problem statement and justification.</i>

	<b>Excellent (3 marks)</b>	<b>Good (2 marks)</b>	<b>Acceptable (1 mark)</b>
<i>Objectives</i>	<i>Objectives are specific, measurable, achievable, relevant, and time-bound.</i>	<i>Objectives are specific, measurable, achievable, but lacks relevance and time-bound.</i>	<i>Objectives are specific and measurable, but not achievable, relevant, and time-bound.</i>
<i>Methods</i>	<i>Clearly states the study area, the experimental design, data collection procedure and data analysis.</i>	<i>States the study area, the experimental design and data collection procedure, but lacks appropriate data analysis.</i>	<i>States the study area and data collection procedure, but lacks experimental design and data analysis.</i>
<i>Results and discussion</i>	<i>Provide and discuss at least four how agroforestry systems ensure sustainable Agriculture.</i>	<i>Provide and discuss three how agroforestry systems ensure sustainable Agriculture.</i>	<i>Provide and discuss two or less how agroforestry systems ensure sustainable Agriculture.</i>
<i>Conclusion and recommendations</i>	<i>Delivers clear, comprehensive conclusion and recommendations that are well supported by project findings.</i>	<i>Delivers useful conclusion and recommendations that are supported by project findings.</i>	<i>Conclusion and recommendations may not be useful or are weakly supported by project findings.</i>
<i>References</i>	<i>Sources are directly related to the topic, up-to-date and adapted APA (American Psychological Association) style.</i>	<i>Sources are related to the topic and up-to-date, but adapted different formats.</i>	<i>Sources are related to the topic, but out-dated and adapted different formats.</i>
<i>Creativity</i>	<i>Learner exhibits high-level imaginative skills such as inclusion of pictures, graphs and other multimedia contents in their report.</i>	<i>Learner exhibits imaginative and critical thinking skills with the inclusion of few pictures, graphs and other multimedia contents in their report.</i>	<i>Learner exhibits less imaginative and critical thinking skills in their report.</i>

**Total -24marks**

# PLC SESSION 15: Concepts and Importance of the Interrelations between Forestry and Agriculture

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

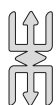
### Learning Outcome

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 activities 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.*

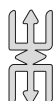
**2.3** Develop assessment tasks/items based on the learning indicator(s) on assessment for the week. This week's recommended mode of assessment is **individual poster presentation** (NTS 3k, 3p).

**E.g.**

*Make a poster presentation on the importance of the interrelations between forestry and Agriculture.*

*Refer to Teacher Manual Section 5, Week 15, pages 31 and 32, and Learner Material Section 5 for more task examples.*

*Homework assigned in week 13 is due for submission this week (week 15).*



#### 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 3n – 3p).

**E.g.**

*Assigning a total score of 16 marks for the individual poster presentation as shown in the rubrics below:*

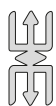
- a) *Expected content answers for importance of the interrelations between forestry and Agriculture.*
  - i. *Economic and Social Benefits: Both Agriculture and forestry contribute significantly to local and national economies, generating employment, income and economic development.*
  - ii. *Forest Fuelwood and Agro-residue Use: Forests can provide a source of fuelwood for cooking and heating, reducing pressure on agricultural resources and agro-residues from crop production can also be used as biomass for energy generation.*
  - iii. *Agroforestry: Integrating trees with crops and/or livestock on the same piece of land which can enhance Agricultural productivity through improved soil fertility, microclimate regulation and pest control provided by the trees, and the crops and livestock contribute to the livelihoods and income of farmers.*
  - iv. *Land Use and Landscape Integration: The proximity of Agriculture to forests can lead to increased biodiversity, microclimate regulation, and soil conservation in agricultural areas, while, forests benefit from ecological interactions with Agricultural lands such as pollinator movement and soil nutrient cycling.*
  - v. *Water Resource Management: Forests play a crucial role in regulating water flow and quality in watersheds, while well-managed forests act as natural sponges,*

*storing and gradually releasing water which benefits Agriculture by ensuring a stable water supply for irrigation and other uses.*

**b) Rubrics for Scoring Individual Poster Presentation in Week 15 (16 marks)**

<b>Criteria</b>				
	<b>Excellent (4 marks)</b>	<b>Very Good (3 marks)</b>	<b>Fair (2 marks)</b>	<b>Poor (1 mark)</b>
<b>Content</b>	<i>Provides at least four (4) importance of the interrelations between forestry and Agriculture.</i>	<i>Provides three (3) importance of the interrelations between forestry and Agriculture.</i>	<i>Provides two (2) importance of the interrelations between forestry and Agriculture.</i>	<i>Provides one (1) importance of the interrelations between forestry and Agriculture.</i>
<b>Graphics/ Presentations Boards</b>	<i>Slides are attractive. Text is legible. No grammatical errors.</i>	<i>Slides are attractive. Text is legible. Some grammatical errors.</i>	<i>Slides are attractive. Text is not very legible. Some grammatical errors.</i>	<i>Slides are not attractive. Text is not legible. There are several grammatical errors.</i>
<b>Presentation/ Organisation</b>	<i>Presenters make very good eye contact with the audience. All material is presented using language that is original without reading from the screen or page.</i>	<i>Presenters make good eye contact with the audience. Minimal reading from the screen or page.</i>	<i>Presenters make minimal eye contact with the audience. Everything is read directly from the screen or page.</i>	<i>Presenters make no contact with the audience. Everything is read directly from the screen of page.</i>
<b>Time Usage</b>	<i>Presentation meets the 10-minute time requirement.</i>	<i>Presentation is 2-3 minutes under the 10-minute time requirement.</i>	<i>Presentation is 4-6 minutes under the 10-minute time requirement.</i>	<i>Presentation is 8-10 minutes or more under the 10-minute time requirement.</i>

**Total – 16 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<sup>st</sup> 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.**

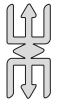
*Guide learners to create PowerPoints and provide feedback on learners PowerPoint slides, presentation style and content, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 97–99 for more information on poster presentation.*

**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.**

*Share the results of the PowerPoint presentation with learners, clarify misunderstandings and acknowledge learners' achievements to boost their motivation and self-esteem, 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: Meaning and Nature of Soil

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

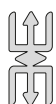
### Learning Outcome

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 activities 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.**

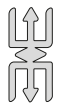
*Draw and label the soil stratifications (soil profile) of your school farm.*

*Refer to Teacher Manual Section 5, Week 16, pages 36 to 39 and Learner Material Section 5 for more task examples.*

#### Hint



*Groups are to paste their well labelled work on the wall before the start of the next lesson for peer assessment.*



#### 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 3n – 3p).

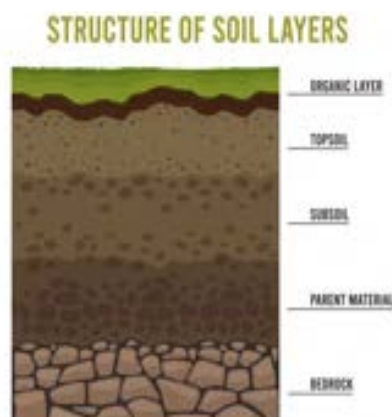
**E.g.**

*Task learners to go round and peer assess other groups work based on the following criteria for awarding a total mark of 10.*

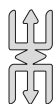
*Criteria for peer assessment*

- a) *Neatly drawn soil profile = 1 mark each for clear drawing of each profile, thus, 1x5= 5 marks*
- b) *Well labelled stratifications of the soil profile = 1 mark for each correct label, that is, 1x5 = 5 marks*

*For instance;*







### 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<sup>st</sup> 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.

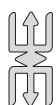
*Provide clear procedure for carrying out the task and the peer assessment, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 91–94 for more information of peer 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.

*Provide constructive feedback to learners' work highlighting their strengths and areas for growth in their interaction during the peer assessments, 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: Composition of Soil and their Importance

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

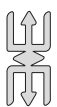
### Learning Outcome

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 activities in your learning plan (NTS 2a – 2f, 3a – 3j).



### Note

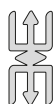
*The selected activities should be included in the teacher/learner activity section of the learning plan.*

**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.**

*Display/exhibit five (5) compositions of soil samples collected from the school compound, garden or farm.*

*Refer to Teacher Manual Section 5, Week 17, pages 44 to 46 and Learner Material Section 5 for more task examples.*



**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 3n – 3p).

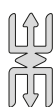
**E.g.**

*Assessing display and exhibition work using excellent, good, fair and poor as presented below:*

*Rubrics for Grading Display and Exhibition in Week 17 on Soil Composition*

Criteria	Excellent	Very good	Good	Fair
Content Accuracy	<i>Information is scientifically accurate, covers soil composition in-depth (minerals, organic matter, air, water, microorganisms), and includes advanced concepts like soil horizons and types.</i>	<i>Information is mostly accurate, covers all key aspects of soil composition with minor errors or omissions.</i>	<i>Information is somewhat accurate but incomplete; some key aspects of soil composition are missing or unclear.</i>	<i>Information is mostly inaccurate or lacks critical aspects of soil composition.</i>

Criteria	Excellent	Very good	Good	Fair
<i>Creativity and Visual Appeal</i>	<i>Display/exhibition is highly creative, engaging, and visually appealing; uses innovative materials, colours, and designs to draw attention and illustrate points clearly.</i>	<i>Display is visually appealing and uses some creative elements; design is neat and supports the content effectively.</i>	<i>Display has limited creativity; basic visuals and design are used but are not particularly engaging.</i>	<i>Display lacks creativity, is poorly designed, or does not capture attention effectively.</i>
<i>Organisation and Layout</i>	<i>Display is highly organised with a clear, logical flow of information; headings and sections are easy to follow; the overall layout enhances understanding.</i>	<i>Information is organised and follows a logical sequence, though layout could be slightly improved.</i>	<i>Information is somewhat organised but lacks a clear flow or structure; audience may struggle to follow the display.</i>	<i>Display is disorganised or chaotic; information is difficult to follow or scattered.</i>
<i>Use of Supporting Materials (e.g., charts, diagrams, models)</i>	<i>Effectively integrates charts, diagrams, or models that enhance the explanation of soil composition; these materials are accurate and easy to interpret.</i>	<i>Uses some charts, diagrams, or models to support the explanation, though they may not be fully integrated or as effective.</i>	<i>Includes minimal supporting materials or uses them in a way that does not strongly enhance understanding.</i>	<i>Does not use charts, diagrams, or models, or those used are inaccurate or difficult to interpret.</i>
<i>Engagement with Audience</i>	<i>Highly engaging and interactive; encourages audience participation, asks questions, and prompts discussions or hands-on activities related to soil composition.</i>	<i>Engages the audience somewhat through interaction, though may rely on passive viewing rather than active participation.</i>	<i>Minimal audience engagement; interaction is limited or does not actively involve the viewers.</i>	<i>Display does not engage the audience at all; no effort to interact or involve viewers.</i>



### 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<sup>st</sup> 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.**

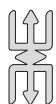
*Provide learners with clear procedure for carrying out the display/exhibition, go round the groups during the display and provide guidance and assistance where necessary, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 54–57 for more information on display and exhibition.*

**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 share their thoughts and feedback about the exercise and use their feedback to modify your teaching strategies and improvement in future display and exhibition, 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, 2a – 2e).
- b. you found challenging (NTS 1a – 1b, 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.

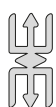
### Learning Outcome

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 activities 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.**

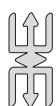
*Section A: Multiple Choice Question*

1. *The growing of crops in between rows of trees or shrubs is known as .....*
    - A. *Alley cropping*
    - B. *Mono cropping*
    - C. *Mixed cropping*
    - D. *Pasture cropping*
- 1 mark for each correct answer*

*Section B: Essay Type Question*

1. *Discuss how the physical, chemical and biological properties of soil influence crop growth and yield. (7 marks)*

Refer to **Appendix F** for the table of specifications to aid in the sampling and writing of the test items.



#### 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 3n – 3p).

**E.g.**

*Section A: Multiple Choice- Question*

1. *The growing of crops in between rows of trees or shrubs is known as .....*
  - A. *Alley cropping*
  - B. *Mono cropping*
  - C. *Mixed cropping*
  - D. *Pasture cropping*

*Correct answer is A (1 mark for each correct answer)*

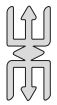
### Section B: Essay Type Question

1. Discuss how the physical properties of soil influence crop growth and yield.

*Expected Answers:*

*The physical properties,*

- such as soil texture and structure (1 x 2 = 2 marks)*
- affect water infiltration, retention, and root penetration (1 x 3 = 3 marks).*
- Soils with balanced sand, silt and clay provide optimal conditions for crops (2 marks for complete answer and 1 mark for partial answer).*



#### Note

- 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.*
- Take into consideration different modes of responses provided by learners.*
- Discuss how you will observe and integrate character qualities, national values and 21<sup>st</sup> 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.**

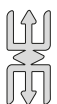
*Provide time allocation for the completion of the questions and assign marks to each of the questions (Give additional time for learners with SEN), etc.*

*Refer to pages 83–86 and 94–97 of Teacher Assessment Manual and Toolkit for more information on assessment of multiple choice and essay type questions, respectively.*

- 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 performance of learners with them (individually and as a class) and encourage learners to reflect on their performance, review their work and identify areas for 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 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 G: Table of Specification for Mid-Semester Examination

Consider the following for the mid-semester examination:

- a) Cover content from weeks 1-5. Taking into consideration DoK 1-4 levels.
- b) Resources:
  - i. Answer Booklets
  - ii. Learning Material
  - iii. Teacher Manual
  - iv. Teacher Assessment Manual Toolkit
- c) The test should include
  - i. Section A- Multiple Choice Questions (20 questions for 20 marks, 1 mark for each question)
  - ii. Section B- (5 Essay Type Questions, 3 to be answered by learners for 30 marks, 10 marks per question)
- d) Time: 1 hours 30 minutes
- e) Total Score: 50 marks to be scaled down to 20 marks for submission.
- f) Prepare table of specification

Table of specification for item construction for section A and B

Weeks	Focal Area(s)	Types of Questions	DoK Levels				Total
			1	2	3	4	
13	Management Systems Involved in Animal Production	Multiple Choice	2	3	1	-	6
		Essay	1	1	1	-	3
14	Skills in Farm Animal Management Practices for Rearing Animals	Multiple Choice	2	3	1	-	6
		Essay	1	-	1	-	2
15	Agroforestry Practices and Systems in Forest Management	Multiple Choice	1	3	2	1	6
		Essay	1	1	1	-	3
16	Meaning and Nature of Soil	Multiple Choice	2	3	2	-	7
		Essay	1	1	1	1	4
17	Composition of Soil and their Importance	Multiple Choice	2	3	1	-	6
		Essay	1	1	-	1	3
18	Meaning and Effects of Climate Change on Food Production and their Mitigating Strategies	Multiple Choice	1	1	2	-	4
		Essay	-	-	-	-	0
		Total	15	20	13	2	50

# PLC SESSION 19: Farm Hygiene and Sanitation Activities in Crop Production

## 1. Introduction (20 minutes)

- 1.1** Share one thing on the lesson for week 18 and mid-semester examination that:
- went well (NTS 1a – 1b, 2a – 2e).
  - you found challenging (NTS 1a – 1b, 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

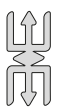
The purpose of the session is to review the learning plan for week 19 by aligning the learning plan with Learner Material and appropriate assessment strategies.

### 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

- 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.
  - Discuss and develop assessment tasks and rubrics/markingscheme 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 activities in your learning plan (NTS 2a – 2f, 3a – 3j).



### Note

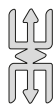
*The selected activities should be included in the teacher/learner activity section of the learning plan.*

**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.**

*Draw and explain the uses of five (5) farm hygiene and sanitation tools in maintaining farm hygiene in crop production.*

*Refer to Teacher Manual Section 6, Week 19, pages 56 to 59 and Learner Material Section 6 for more task examples.*



#### 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 3n – 3p).

**E.g.**

*Assigning a total of 15 marks for the class exercise (Drawing the tool = 1 mark, naming the tool = 1 mark and providing the use of the tool = 1 mark, thus 3 marks per tool)*

- a) *Rake: Use for levelling the soil, removing debris, and creating a smooth seedbed.*



- b) *Hand Fork: Use for loosening soil, aerating the root zone, and removing weeds around established plants.*



- c) *Pruning Shears: Use for cutting and removing dead or diseased plant parts such as branches, leaves, or stems.*



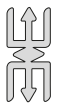
- d) *Hand Sprayers: Use for applying various treatments such as fungicides, insecticides, or foliar fertilisers.*



- e) *Cutlass: Used for cutting through vegetation, such as tall grass, weeds, brush etc.*



3 x 5 = 15 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<sup>st</sup> 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.**

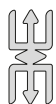
*Clearly communicate instructions to learners walk around the classroom to observe learners as they work on the exercise, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 80–83 for more information on the assessment of class exercise.*

- 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 exercise based on the assessment criteria with learners and encourage them to use the feedback to improve their next class exercise, 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: Farm Hygiene and Sanitation Activities in Animal Production

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

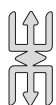
### Learning Outcome

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/markingscheme 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 activities 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.**

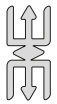
*Explain five (5) benefits of maintaining proper farm hygiene and sanitation in animal production.*

*Refer to Teacher Manual Section 6, Week 20, pages 66 to 69 and Learner Material Section 6 for more task examples.*

#### Hint



- i. *The homework should be submitted in week 21. Learners scores for the project should be recorded.*
- ii. *The individual project work in week 14 is due for submission in this week (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 3n – 3p).

**E.g.**

*Assigning a total of 15 marks for the homework. Give 3 marks for each explained benefit of maintaining proper farm hygiene and sanitation in animal production, that is, 1 mark for stating the point, and 1 mark each for two correct sentences explaining the point.*

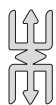
*Expected answers:*

- a) *Disease Prevention: (1 mark)*
  - i. *Clean and well-maintained facilities reduce the presence of pathogens, parasites, and vectors that can cause infections. (1 mark)*
  - ii. *Regular cleaning, disinfection, and waste management help control disease transmission and minimise the risk of outbreaks. (1 mark)*
- b) *Animal Health and Welfare: (1 mark)*
  - i. *Animals raised in clean surroundings are less prone to stress, injuries, and disease (1 mark)*
  - ii. *They have improved immunity, reduced exposure to harmful pathogens, and a lower likelihood of developing infections (1 mark)*



- c) **Production Efficiency:**
- i. *By maintaining clean and well-ventilated housing, animals are more comfortable, leading to better feed conversion rates, growth, and reproduction (1 mark)*
  - ii. *Reduced disease incidence means fewer veterinary interventions, lower mortality rates, and improved overall productivity (1 mark)*
- d) **Food Safety: (1 mark)**
- i. *Proper cleaning and disinfection practices minimise the risk of foodborne pathogens contaminating meat, milk, eggs, or other animal-derived products (1 mark)*
  - ii. *This helps protect consumer health and maintain public confidence in the safety of agricultural products (1 mark)*
- e) **Environmental Impact (1 mark)**
- i. *Proper waste management such as manure handling and disposal, prevents water and soil contamination, reducing the risk of nutrient runoff and environmental pollution (1 mark)*
  - ii. *By implementing sustainable waste management practices, ecological footprint will be minimised and the health of surrounding ecosystems maintained (1 mark)*

3 x 5 =15 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<sup>st</sup> 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.

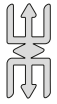
*Ask learners to start their homework at close of class and encourage them to consult their parent, use textbooks or the internet where necessary to obtain the needed information, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 57–60 for more information on the assessment of homework.*

- 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 bring up questions on the benefits of maintaining proper farm hygiene and sanitation in animal production that were unclear for class discussion and use feedback to improve upon their understanding, 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 21: Farm as an Economic Unit

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

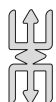
### Learning Outcome

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 activities 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 (group)** (NTS 3k, 3p).

**E.g.**

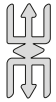
*Conduct research on why an agricultural enterprise on your school campus or your community is considered as an economic unit.*

*Refer to Teacher Manual Section 7, Week 22, pages 79 to 82 and Learner Material Section 7 for more task examples.*

#### Hint



- i. *The research report should be submitted in week 23.*
- ii. *The homework given in week 20 is due for submission in this week (week 21).*



#### 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 3n – 3p).

**E.g.**

#### **Rubrics for Scoring:**

*Assign a total of 27 marks to be scaled down to 20 marks*

- a) *Expected content answers for why an agricultural enterprise is considered as an economic unit.*
  - i. *Production: The enterprise produces agricultural goods. It combines various inputs such as land, labour, capital and technology, to produce the oil for sale in the market. The enterprise activities generate revenue and contribute to the overall economic activity.*
  - ii. *Profitability: The enterprise generates positive net income by selling their output at prices that cover production costs and provide a return on investment. Profitability is crucial for the financial viability, sustainability, and long-term growth of the farm.*
  - iii. *Resource Allocation: The farm owner considers factors such as cost, productivity, market demand and profitability to optimise the use of resources and maximise the farm's output and profitability.*
  - iv. *Cost and Revenue Analysis: The enterprise owner has employed an accountant who monitors and controls expenses such as input costs, labour costs, machinery*

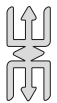
*maintenance and overhead expenses. Also understands the market prices, market demand, marketing strategies and sales volume to optimise the farm's income generation.*

- v. *Financial Management: The enterprise owner has employed an accountant who assist with the maintenance of sound financial records, prepare budgets and analyse financial statements to assess the farm's financial position, profitability, liquidity and solvency.*

b) *Rubrics for Grading Research Report (maximum of 27 marks)*

	<b>Excellent (3 marks)</b>	<b>Good (2 marks)</b>	<b>Acceptable (1 mark)</b>
<i>Cover page</i>	<i>States the topic, name, ID and date of submission correctly.</i>	<i>States the topic, name, ID and date of submission with some mistakes.</i>	<i>At least one of these, the topic, name, ID or date of submission is missing and some mistakes are observed.</i>
<i>Background</i>	<i>Provides appropriate introduction, problem statement and justification.</i>	<i>Provides appropriate introduction and problem statement but not justification.</i>	<i>Provides appropriate introduction but not problem statement and justification.</i>
<i>Objectives</i>	<i>Objectives are specific, measurable, achievable, relevant, and time-bound.</i>	<i>Objectives are specific, measurable, achievable, but lacks relevance and time-bound.</i>	<i>Objectives are specific and measurable, but not achievable, relevant, and time-bound.</i>
<i>Methods</i>	<i>Clearly states the study area, the experimental design, data collection procedure and data analysis.</i>	<i>States the study area, the experimental design and data collection procedure, but lacks appropriate data analysis.</i>	<i>States the study area and data collection procedure, but lacks experimental design and data analysis.</i>
<i>Results and discussion</i>	<i>Provide and discuss at least four interdependencies between Agriculture and industry.</i>	<i>Provide and discuss three interdependencies between Agriculture and industry.</i>	<i>Provide and discuss two or less interdependencies between Agriculture and industry.</i>
<i>Conclusion and recommendations</i>	<i>Delivers clear, comprehensive conclusion and recommendations that are well supported by project findings.</i>	<i>Delivers useful conclusion and recommendations that are supported by project findings.</i>	<i>Conclusion and recommendations may not be useful or are weakly supported by project findings.</i>

	<b>Excellent (3 marks)</b>	<b>Good (2 marks)</b>	<b>Acceptable (1 mark)</b>
<i>References</i>	<i>Sources are directly related to the topic, up-to-date and adapted APA (American Psychological Association) style.</i>	<i>Sources are related to the topic and up-to-date, but adapted different formats.</i>	<i>Sources are related to the topic, but out-dated and adapted different formats.</i>
<i>Other criteria to be used by the teacher</i>			
<i>Creativity</i>	<i>Groups exhibit high-level imaginative skills such as inclusion of pictures, graphs and other multimedia contents in their report.</i>	<i>Groups exhibit imaginative and critical thinking skills with the inclusion of few pictures, graphs and other multimedia contents in their report.</i>	<i>Groups exhibit less imaginative and critical thinking skills in their report.</i>
<i>Teamwork</i>	<i>Strong teamwork and active participation by all members of the group.</i>	<i>Teamwork and active participation by some group members.</i>	<i>Poor teamwork and participation.</i>



### 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<sup>st</sup> 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.**

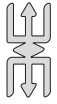
*Put learners into mixed ability groups of 3–7 where applicable, clarify the task to learners and provide feedback to learners' questions on the task, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 77–80 for more information on the assessment of research.*

**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.**

*Reflect on learners' performance with them to identify common strengths and areas for improvement and use feedback to modify your teaching strategies, 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:
  - d) provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l - 3n).
  - e) read PLC Session 22 and related Learner Material (NTS 3a).
  - f) bring along your Teacher Manual, PLC Handbook and learning plan on week 22 in preparation for the next session (NTS 3a).

# PLC SESSION 22: Strategies for Effective Communication in Agriculture

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

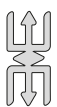
### Learning Outcome

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/markingscheme 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 activities 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.**

*Mr. Asamoah is an agricultural extension officer who has been tasked to convince cocoa farmers at Konongo not to give up their farmlands for mining activities. List any five (5) effective communication strategies that he can use to perform his duty.*

*Refer to Teacher Manual Section 7, Week 22, pages 89 to 91 and Learner Material Section 7 for more task examples.*

#### Hint

*The portfolio given in week 1 is due for submission in this week (week 22)*

#### 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 3n – 3p).

**E.g.**

*Assigning a total of five (5) marks for listing all the communication channels correctly.*

*Expected answers*

*He should*

- a) *Identify and understand his target audience*
- b) *Use clear and simple language that is easy for farmers to understand*
- c) *Choose appropriate communication channels to reach the farmers effectively*
- d) *Provide practical and actionable information and*
- e) *Build relationships and trust with the farmers 1x5=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 21<sup>st</sup> 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.**

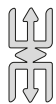
*Discuss the assessment criteria with learners, encourage all learners to participate and to respect each other's views and opinion, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 80–83 for more information on the assessment of questioning.*

- 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.**

*Reflect on learners' performance with them to identify common strengths and areas for improvement and use feedback to modify your teaching strategies, 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:
- provide constructive feedback to learners and record their assessment scores in the required format and document where appropriate (NTS 3l – 3n).
  - read PLC Session 23 and related Learner Material (NTS 3a).
  - bring along your Teacher Manual, PLC Handbook and learning plan on week 23 in preparation for the next session (NTS 3a).

# PLC SESSION 23: Activities of Agribusiness Management

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

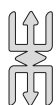
### Learning Outcome

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/markingscheme 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 activities 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 **discussion** (NTS 3k, 3p).

**E.g.**

*Discuss five (5) activities carried out in agribusiness management.*

*Refer to Teacher Manual Section 7, Week 23, pages 94 to 97 and Learner Material Section 7 for more task examples.*

#### Hint

*The report of the research assigned in week 21 is due for submission this week (week 23)*

#### 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 3n – 3p).

**E.g.**

*Assigning a total of 18 marks for well discussed activities of an agribusiness management, 15 marks for the discussion and a maximum of 3 marks for teamwork.*

*Expected answers*

- a) *Activities carried out in agribusiness management include;*
  - i. *Strategic Planning: (1 mark)*
    - *Agribusiness managers develop long-term strategies to achieve organisational goals. (1 mark)*
    - *This involves analysing market trends, identifying opportunities and threats, setting objectives, and formulating plans to allocate resources effectively. (1 mark)*
  - ii. *Financial Management: (1 mark)*
    - *Agribusiness managers handle financial aspects such as budgeting, cash flow management, financial analysis and investment decisions. (1 mark)*
    - *They assess the profitability of different activities, manage expenses, secure financing, and ensure compliance with financial regulations. (1 mark)*
  - iii. *Production Management:*

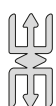
- *This involves planning and overseeing agricultural production activities, including crop cultivation, livestock rearing and aquaculture. (1 mark)*
  - *Agribusiness managers optimise production processes, monitor yields, manage input resources (such as seeds, fertilisers, and feed), and implement quality control measures. (1 mark)*
- iv. *Supply Chain Management:*
- *Agribusinesses operate within complex supply chains that involve multiple stakeholders, including suppliers, distributors, retailers and consumers. (1 mark)*
  - *Managers coordinate the flow of goods and services, manage inventory levels, negotiate contracts and ensure timely delivery while minimising costs and risks. (1 mark)*
- v. *Marketing and Sales: (1 mark)*
- *Agribusiness managers develop marketing strategies to promote agricultural products and maximise sales. (1 mark)*
  - *This involves market research, branding, advertising, pricing, distribution channel management and customer relationship management. (1 mark)*

3 x 5 = 15 marks

b) *Teamwork and collaboration*

- i. *Strong teamwork and active participation by all members of the group = 3 marks*
- ii. *Teamwork and active participation by some group members = 2 marks*
- iii. *Poor teamwork and active participation = 1 mark*

Maximum of 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 21<sup>st</sup> 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.**

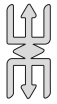
*Provide necessary resources, materials to help groups in their work (links to websites and references to books and journal) and discuss the assessment criteria with learners, etc.*

*Refer to the Teacher Assessment Manual and Toolkit pages 66–69 for more information on the assessment of discussion.*

- 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.**

*Reflect on learners' performance with them to identify common strengths and areas for improvement and use feedback to modify your teaching strategies, 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, 2a – 2e)
- b. you found challenging (NTS 1a – 1b, 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 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.

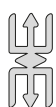
### Learning Outcome

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/marketing 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 activities 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.**

*Section A: Multiple Choice Question*

1. Which of the following correctly lists the main components of soil?
  - A. Water, minerals, air and organic matter
  - B. Sand, clay, gravel and silt
  - C. Rocks, minerals, air and plastic
  - D. Water, sand, glass and organic matter (1 mark for each correct answer)

*Section B: Essay Type Questions*

*Discuss the importance of farm hygiene and sanitation activities in animal production (5 marks).*

*Section C: Practical*

- a. Write the names of specimen A to D in the picture below. (4 marks)
- b. Give one (1) importance each of the specimen in farm hygiene activities in crop production. (4 marks)
- c. State three (3) effects of unhygienic conditions in crop production. (3 marks)
- d. Name 4 tools used in carrying out farm hygiene activities in animal production. (4 marks)



**A**



**B**



**C**



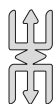
**D**

**Hint**



Refer to the **Appendix H** for the table of specifications for sampling and writing of the test items.





### 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 3n – 3p).

### E.g.

#### Section A: Multiple Choice Question

1. *Which of the following correctly lists the main components of soil?*
  - A. *Sand, clay, gravel and silt*
  - B. *Water, minerals, air and organic matter*
  - C. *Rocks, minerals, air and plastic*
  - D. *Water, sand, glass and organic matter*

*Correct answer is B (1 mark for each correct answer)*

#### Section B: Essay Type Question

##### *Expected answers*

*Discussing the importance of farm hygiene and sanitation activities in animal production (5 marks).*

##### *Expected solution:*

- i. *Regular cleaning and disinfection of animal housing prevents the buildup of pathogens.*
- ii. *Effective use of the gathered can be used for composting or biogas which are valuable resources, reducing environmental contamination.*
- iii. *Regular cleaning of water troughs and monitoring water quality help prevent waterborne diseases.*
- iv. *Implementing pest control measures helps prevent the spread of diseases carried by rodents and insects.*
- v. *Regular vaccination programs protect animals from common diseases.*
- vi. *Routine health checks and monitoring help detect early signs of illness, allowing for timely intervention.*

*1 x 5 = 5 marks*

## Section C: Practical



## a. Identification of specimen A to D

A = hand sprayer

B = hand fork

C = rake

D = pruning shears (1 x 4 = 4 marks, wrong spelling of name attracts no mark)

## b. State the importance of the specimen in farm hygiene activities in crop production

Expected answer:

- i. Hand sprayer: used for the application of treatments such as fungicides, insecticides or weedicides.
- ii. Hand fork: for removing weeds around established plants.
- iii. Rake: for removing debris and gathering leaves and other waste materials on the farm.
- iv. Pruning shears: for cutting and removing dead or diseased plant parts such as branches, leaves, or stems (1x4 = 4 marks).

## c. State three (3) effect of unhygienic conditions in crop production

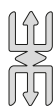
Expected answer

- i. Unhygienic conditions can create an environment conducive for the spread of plant diseases and pests which can lead to reduced yields.
- ii. Accumulation of harmful microorganisms, chemicals and toxins in the soil due to poor sanitation practices can degrade soil quality.
- iii. Contaminated crops can harbour pathogens like *E. coli*, *Salmonella* and *Listeria* can pose serious health risks to consumers and potentially lead to foodborne illness outbreaks.
- iv. Disease and pest damage can significantly lower crop yields, leading to financial losses for farmers.
- v. Contaminated or low-quality produce may be rejected by buyers, resulting in lost income and damaged market reputation.

- vi. *Runoff from fields with poor sanitation can contaminate nearby water sources with chemicals, pathogens, and sediments, harming aquatic ecosystems and posing risks to human health. (Any 3 for 3 marks, 1 mark each)*
- d. *Name 4 tools and implements used in carrying out farm hygiene activities in animal production.*

*Expected results*

- i. *Brooms and Brushes*
- ii. *Shovels and Spades*
- iii. *Pressure Washers*
- iv. *Scrapers*
- v. *Disinfectant Sprayers*
- vi. *Footbaths (any 4 for 4 marks, 1 mark each)*



#### 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<sup>st</sup> 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.**

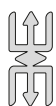
*Prepare a table of test specifications, provide clear instructions and resources needed for the tasks and discuss the structure of the test with learners, etc.*

*Refer to Teacher Assessment Manual and Toolkit pages 41–43, 83–86 and 94–97 for more information on test of practical knowledge, multiple choice and essay type questions, respectively.*

- 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.**

*Returned marked answer booklets to learners promptly, discuss learners' performance with them (individually and as class) and encourage learners to use the feedback to improve their learning, 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

Consider the following for the end of semester examinations:

- a) Cover content from weeks 13–24, taking into consideration DoK levels 1–4.
- b) Resources:
  - i. Answer Booklets
  - ii. Learning Material
  - iii. Teacher Manual
  - iv. Teacher Assessment Manual and Toolkit
  - v. Specimen and Materials for Practical Examination
- c) The test should include
  - i. Section A– Multiple Choice Questions (40 questions for 40 marks, 1 mark for each question)
  - ii. Section B– (5 Essay Type Questions, 3 to be selected for 60 marks, 20 marks per question)
  - iii. Practical Section – (5 questions, Answer all questions for 100 marks, 20 marks per question)
- d) Time: 1 hour 30 minutes for Section A and B and 1 hour for practical examination.
- e) Total Score: 200 marks to be scaled down to 60 marks.
- f) Prepare table of specification

Table of specification for item construction for section A, B and C

Weeks	Focal Areas	Types of Questions	DoK Levels				Total
			1	2	3	4	
13	Management Systems Involved in Animal Production	Multiple Choice	2	2	2	-	6
		Essay	1	1	1	-	3
		Test of Practical	-	-	-	-	-
14	Skills in Farm Animal Management Practices for Rearing Animals	Multiple Choice	2	3	1	-	6
		Essay	-	1	-	-	1
		Test of Practical	-	-	-	-	-
15	Agroforestry Practices and Systems in Forest Management	Multiple Choice	2	3	2	-	7
		Essay	-	-	1	-	1
		Test of Practical	-	-	-	1	1

Weeks	Focal Areas	Types of Questions	DoK Levels				Total
			1	2	3	4	
16	Meaning and Nature of Soil	<i>Multiple Choice</i>	2	3	2	-	7
		<i>Essay</i>	-	1	1	-	2
		<i>Test of Practical</i>	-	-	-	-	-
17	Composition of Soil and their Importance	<i>Multiple Choice</i>	2	3	1	-	6
		<i>Essay</i>	-	1	1	-	2
		<i>Test of Practical</i>	-	-	-	-	-
18	Preparing for Mid-Semester Examination	<i>Multiple Choice</i>	2	2	1	-	5
		<i>Essay</i>	1	1	1	-	3
		<i>Test of Practical</i>	-	-	-	-	-
19	Farm Hygiene and Sanitation Activities in Crop Production	<i>Multiple Choice</i>	2	3	2	-	7
		<i>Essay</i>	-	-	1	-	1
		<i>Test of Practical</i>	-	-	-	1	1
20	Farm Hygiene and Sanitation Activities in Animal Production	<i>Multiple Choice</i>	2	3	1	-	6
		<i>Essay</i>	-	1	1	-	2
		<i>Test of Practical</i>	-	-	-	-	-
21	Farm as an Economic Unit	<i>Multiple Choice</i>	2	2	2	-	6
		<i>Essay</i>	-	-	1	-	1
		<i>Test of Practical</i>	-	-	-	1	1
22	Strategies for Effective Communication in Agriculture	<i>Multiple Choice</i>	3	3	1	-	7
		<i>Essay</i>	-	1	-	-	1
		<i>Test of Practical</i>	-	-	-	-	-
23	Activities of Agribusiness Management	<i>Multiple Choice</i>	3	2	1	-	6
		<i>Essay</i>	1	1	1	-	3
		<i>Test of Practical</i>	-	-	-	-	-
24	Procedure for Writing an Agribusiness Plan	<i>Multiple Choice</i>	3	2	1	-	6
		<i>Essay</i>	-	1	-	-	1
		<i>Test of Practical</i>	-	-	-	1	1
		<b>Total</b>	<b>30</b>	<b>40</b>	<b>26</b>	<b>4</b>	<b>100</b>

## 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)

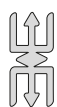
### Summative Assessment

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, 21<sup>st</sup> 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 21<sup>st</sup> 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 21<sup>st</sup> 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**

21 <sup>st</sup> Century Skills & Competencies	GESI & SEL	National Values
<ul style="list-style-type: none"> <li>• Critical Thinking and Problem Solving</li> <li>• Creativity</li> <li>• Innovation</li> <li>• Collaboration</li> <li>• Communication</li> <li>• Global and Local Citizenship</li> <li>• Learning for life</li> <li>• Leadership</li> <li>• Analytic skills</li> <li>• Digital Literacy</li> </ul>	<ul style="list-style-type: none"> <li>• Gender Equality and Social Inclusion</li> <li>• Self-Awareness</li> <li>• Self-Management</li> <li>• Social Awareness</li> <li>• Relationship Skills</li> <li>• Responsible Decision Making</li> <li>• Tolerance</li> </ul>	<ul style="list-style-type: none"> <li>• Respect</li> <li>• Truth and Integrity</li> <li>• Tolerance</li> <li>• Respect</li> <li>• Equity</li> <li>• Communalism</li> <li>• Appreciation</li> <li>• Stewardship</li> <li>• Time Management</li> </ul>

Table 4 shows the recommended assessment strategies for the scope in Table 3.

**Table 4:** Recommended assessment strategies for 21st century skills and competencies

21 <sup>st</sup> Century Skills & Competencies	Assessment Strategies
Critical Thinking, Problem Solving, Analytical skills	<ul style="list-style-type: none"> <li>• Debates</li> <li>• Analysis of Case Studies based on learners' environment.</li> <li>• Research &amp; Project work.</li> <li>• Objective and Essay type questions/items</li> </ul>
Creativity and Innovation	<ul style="list-style-type: none"> <li>• Individual and group projects</li> <li>• Analysis of Case Studies based on learners' environment.</li> <li>• Design &amp; product creation to solve societal problems</li> </ul>
Communication and Collaboration	<ul style="list-style-type: none"> <li>• Debates</li> <li>• Group projects.</li> <li>• Presentations</li> <li>• Drama &amp; Role play</li> </ul>
Global and Local Citizenship	<ul style="list-style-type: none"> <li>• Research &amp; Project work.</li> <li>• Analysis of Case Studies based on cultural and global issues</li> </ul>
Leadership and learning for life	<ul style="list-style-type: none"> <li>• Individual and Group projects</li> <li>• Presentations</li> </ul>
Digital Literacy	<ul style="list-style-type: none"> <li>• Research &amp; Project work.</li> <li>• Presentations using ICT tools.</li> <li>• individual and group projects</li> </ul>

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.

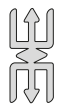
In providing feedback, use the sandwich method (CCC), which starts with a positive aspect of the work (*compliment*), followed by constructive criticism (*correction*), and concludes with another positive note (*compliment*). To set the stage for effective feedback, clearly communicate the learning objectives, 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) allocated to the items and use it consistently.
- v. 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 learners 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 biased 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.

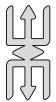
## **Case Study As An Assessment Strategy**

**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 too 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 learners 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 learners 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 before class based on the outcomes.
- ii. 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.
- iii. 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 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

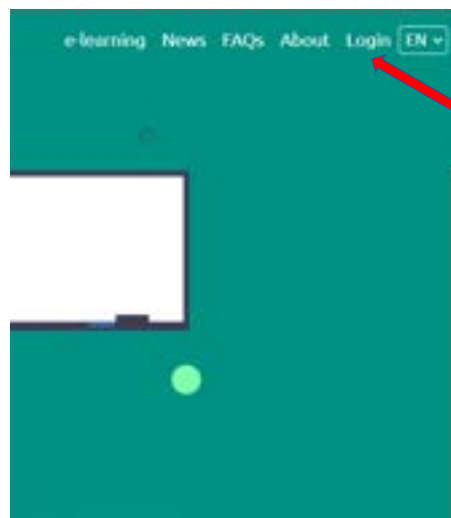
.....

24. Additional Notes (on teacher's actions, the flow of activities, etc.)

.....

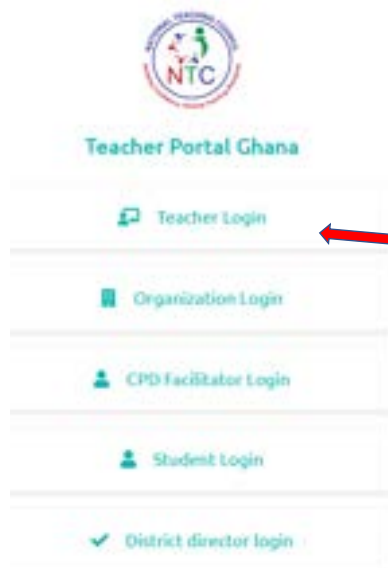
## Appendix 4: How to Check CPD Points and Training Records on Teacher Portal Ghana

### 1. Visit [tpg.ntc.gov.gh](http://tpg.ntc.gov.gh) and click Login



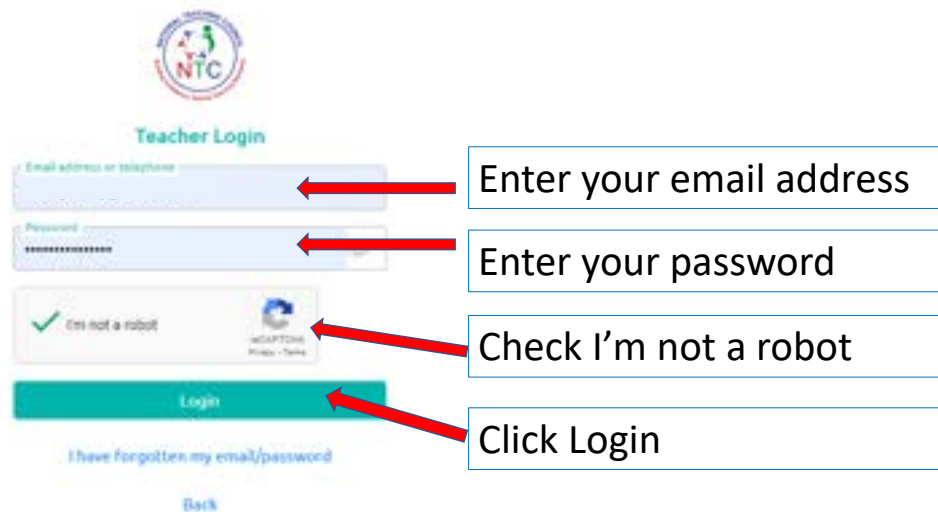
Click Login on the TPG homepage

### 2. On the Login page, click Teacher Login

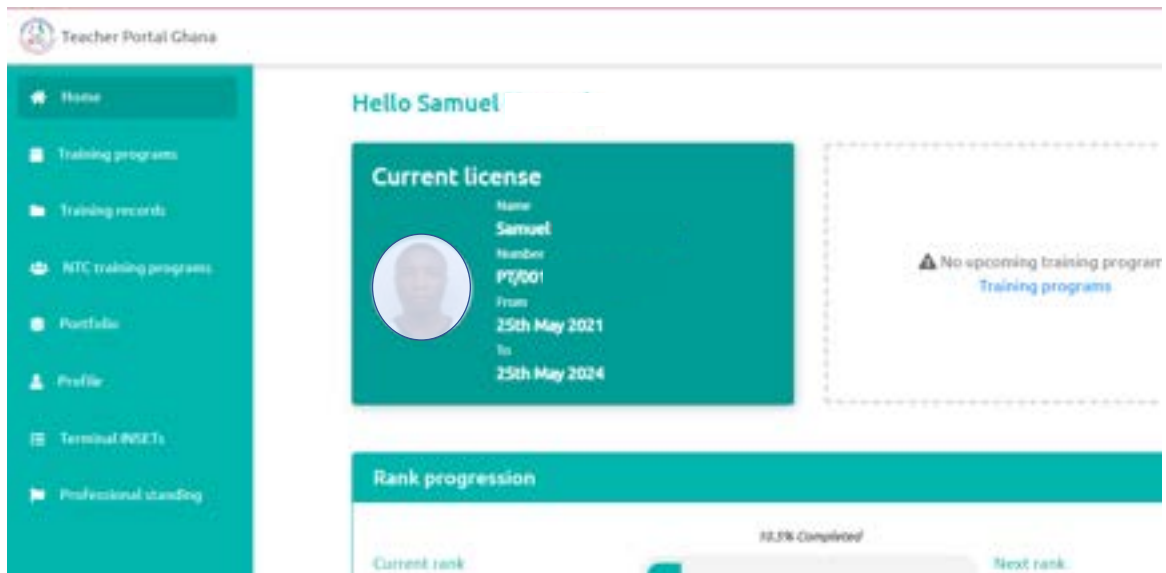


Click Teacher Login

### 3. On the **Teacher Login** page enter your email address and password and then click **Login**



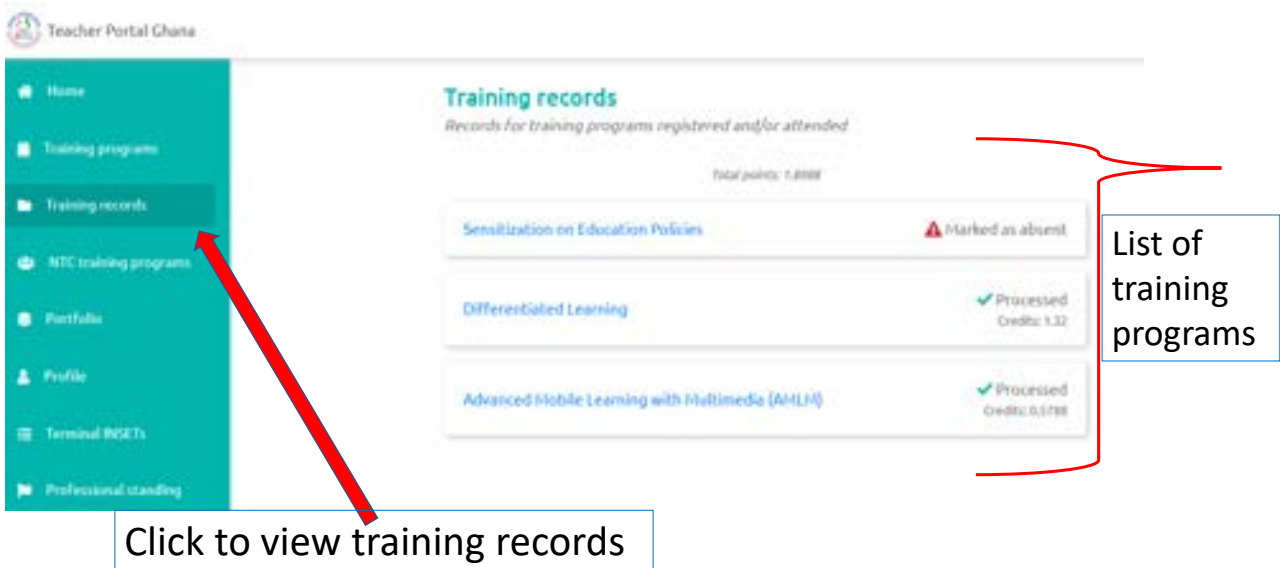
### 4. After a successful login you will get access to your **TPG account** (Check image below)



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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