Secondary Education Professional Development Programme

Departmental Professional Learning Community Handbook

APPLIED TECHNOLOGY

HANDBOOK FOR **TEACHERS**

Wisdom, Knowledge and Prudence

Ghana Education Service (GES)

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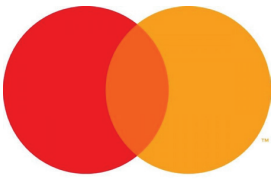

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DEPARTMENTAL PROFESSIONAL LEARNING COMMUNITY HANDBOOK

APPLIED TECHNOLOGY

Teacher Version

DEPARTMENTAL PROFESSIONAL LEARNING COMMUNITY HANDBOOK

This Departmental Professional Learning Community Handbook will help teachers to familiarise themselves with the details of the new Senior High School (SHS), Senior High Technical (SHTS) and Science, Technology, Engineering and Mathematics (STEM) curriculum ahead of national roll-out in 2024/25.

Professional Learning Community (PLC) sessions were introduced across all SHS and SHTS in Ghana in June 2023 and the first two PLC Handbooks were designed to be used by teachers in mixed departmental groups.

This Departmental Professional Learning Community Handbook signals a shift in approach as we focus on providing more detailed information and guidance to teachers ahead of the roll-out of the new SHS, SHTS and STEM curriculum. This Handbook is therefore intended to be used by teachers working in departmental groupings and should be used in conjunction with subject-specific Year One Teacher Manuals.

The Handbook will guide teachers and help to familiarise them with the Weekly Learning Planner and Teacher Manuals as they develop their own Learning Plans for each subject.

The Handbook contains a total of 13 Sessions covering all 24 weeks in Year One of the new SHS, SHTS and STEM curriculum. In each Session of the Handbook teachers will be expected to collectively prepare 2 weeks of Learning Plans using the information provided in their subject-specific Teacher Manuals. The structure of this Handbook is:

> Session 1: Reviewing Knowledge on previous PLC sessions
> Session 2: Learning Plans for weeks 1 & 2
> Session 3: Learning Plans for weeks 3 & 4
> Session 4: Learning Plans for weeks 5 & 6
> Session 5: Learning Plans for weeks 7 & 8
> Session 6: Learning Plans for weeks 9 & 10
> Session 7: Learning Plans for weeks 11 & 12
> Session 8: Learning Plans for weeks 13 & 14
> Session 9: Learning Plans for weeks 15 & 16
> Session 10: Learning Plans for weeks 17 & 18
> Session 11: Learning Plans for weeks 19 & 20
> Session 12: Learning Plans for weeks 21 & 22
> Session 13: Learning Plans for weeks 23 & 24

Schools must ensure that they complete all 13 Sessions within a maximum of 16 weeks so that the Handbook has been completed by the end of the 2023/24 academic year.

The Handbook will ensure that teachers continue to enhance their professional practice skills and competencies, familiarising themselves with the details of the new curriculum, enabling them to help learners develop the 21st Century skills and competencies that will prepare them for further studies, the world of work and adult life.

This Handbook also provides opportunities for peer-to-peer transfer of knowledge and encourages teachers to use their subject specialisms and unique experiences to make connections between the subjects within their departments, enhancing learning experiences.

Prof Edward Appiah

Director-General
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CONTENTS

DPLC Session 1: Review knowledge on previous PLC sessions.		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.**	**Time in session**
1. Introduction: Review of previous learning using ideas from the last PLC session, and introducing the Departmental PLC Handbook	1.1. Introduce the session with an icebreaker. 1.2 Share your expectations regarding what you hope to gain from the Departmental Professional Learning Community (DPLC) activities (NTS 1a, 1b). *E.g.* *Equip teachers with some strategies to teach Applied Technology and Design and Communication Technology* 1.3 Read the purpose of the DPLC Handbook. **Purpose:** The Departmental Professional Learning Community (DPLC) Handbook is intended to serve as the 'bridge' between the handbook introducing the Senior High School (SHS), Senior High Technical (SHTS) and Science, Technology, Engineering and Mathematics (STEM) curriculum and the one supporting all teachers to plan and teach the year one subjects in the SHS, SHTS and STEM curriculum. The main purpose of DPLC is to: a) Build on Session 12 on *the learning planner* of the PLC Handbook on the *Introduction of the SHS, SHTS and STEM Curriculum* to enable teachers to consolidate their understanding and application of the learning planner. b) Support teachers to use the year one teacher manuals to develop learning plans for all year one lessons in the SHS, SHTS and STEM curriculum using the learning planner. c) Provide opportunities for teachers to discuss the year one learning plans and align them with the year one teacher manuals.	10 mins

	d) To give teachers enough time to study the year one subjects in the SHS, SHTS and STEM curriculum and how these will be taught effectively and efficiently. The Handbook is thus principally aimed at helping Applied Technology and Design and Communication Technology teachers to continue to enhance their professional practice, skills and competencies whilst guiding them to help learners to develop 21st century skills and competencies that will prepare them for further studies, the world of work and adult life. The Handbook will provide opportunities for peer-to-peer transfer of knowledge, and Applied Technology and Design and Communication Technology teachers will be encouraged to use their subject specialist and context specific teaching experience to make connections between the teaching and learning of the related subjects in their Department. The Handbook contains 13 topics which cover all the 24 weekly learning plans in year one as follows: 1. Reviewing knowledge and skills acquired from previous PLC Sessions 2. Leaning planners for Weeks 1 & 2 3. Learning planners for Weeks 3 & 4 4. Learning planners for Weeks 5 & 6 5. Learning planners for Weeks 7 & 8 6. Learning planners for Weeks 9 & 10 7. Learning planners for Weeks 11 & 12 8. Learning planners for Weeks 13 & 14 9. Learning planners for Weeks 15 & 16 10. Learning planners for Weeks 17& 18 11. Learning planners for Weeks 19 & 20 12. Learning planners for Weeks 21 & 22 Learning planners for Weeks 23 & 24	
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** The purpose of this session is to help the teachers in *Applied Technology* Department to review their knowledge and understanding on the previous PLC sessions to ensure consolidation of the acquired skills needed to prepare learning planners for various strands in Applied Technology and Design and Communication Technology taking into consideration National issues, GESI, SEL, ICT, differentiation and 21st century skills (cross-cutting issues).	60 mins

	LO 1: Apply skills acquired from the previous PLC sessions on appropriate resources, concepts, pedagogical and assessment strategies needed for effective teaching in applied technology, incorporating cross-cutting issues (NTS 1a, 2c, 2e, 2f, 3a, 3e, 3g and 3j). LI 1.1 Analyse the various features of the learning planner with reference to last PLC sessions. LI 1.2 Examine the differentiated pedagogical strategies learnt in the last PLC session needed to prepare learning planners in Applied Technology. LI 1.3 Examine the differentiated assessment strategies learnt in the last PLC session needed to prepare learning planners in Applied Technology and Design and Communication Technology. LI 1.4 Examine National values, GESI, SEL, ICT and 21st Century skills required for teaching Applied Technology and Design and Communication Technology in an all-inclusive environment. 2.2 In groups, discuss features of the learning planners. E.g. *Content standard* 2.3 Use think-pair-share to discuss the differentiated pedagogical strategies learnt in the last PLC session indicating how the strategies were applied in the lessons (NTS 2a, 2c, 3e, 3g, 3h and 3j). E.g. *Use videos, online resources and tools to provide different levels of support and challenge to learners in Applied Technology lesson. Allow learners to use simulation to learn complex concepts Applied technology lesson.* 2.4 Think-pair-share to discuss differentiated assessment strategies learnt at the last PLC session and how you applied strategies in the lesson taught (NTS 1a, 3f and 3g). *E.g.* *Use varied questioning techniques to engage all learners, providing opportunities for both verbal and written responses*	

	2.5 Share how national values, GESI, SEL, ICT and 21st century skills were incorporated into Applied Technology and Design and Communication Technology lessons since the last PLC (NTS 1a, 2c, 2e, 2f, 3a, 3g and 3i). *E.g.* *a) National values:* *Discuss the importance of honesty in handling materials, tools and equipment in the Applied Technology workshop.* *b) GESI:* *Create a safe and inclusive learning environment for all learners, regardless of their gender, ethnicity, or sexual orientation.* *c) SEL:* *Create awareness of importance of socio-emotional learning such as self-awareness, self-management, and empathy.* *d) ICT:* *Help learners to use ICT tools to surf internet about real-world problems in Applied Technology and Design and Communication Technology fields.* *e) 21st century skills:* *Help learners to develop critical thinking skills, such as problem-solving and decision-making through assigned project works in Applied Technology.*	
3. Modelling a teaching activity, promoting character values, GESI, SEL, ICT and 21st century skills	3.1 Model a teaching activity in the lesson on application of the knowledge on any topic of their choice in Applied Technology taking into account character values, GESI, SEL, ICT and 21st century skills (NTS 3a, 3c-3j). 3.2 Reflect and give feedback on the modelled lesson (NTS 1a, 2c, 3h).	10 mins

4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 In your group reflect, write and share one thing you have learnt at this session with the larger group (NTS 1a, 1b). 4.2 Identify a critical friend to observe your next lesson and provide feedback. (NTS 3n, 3o). 4.3 Remember to read DPLC Session 2 on developing lesson plans for Weeks 1 and 2 and bring along teacher manual, NTS handbook, curriculum, and a laptop in preparation for the next session (NTS 1a, 1b).	10 mins

DPLC Session 2: Developing learning plans for Weeks 1 and 2		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 1, *Reviewing knowledge on previous PLC sessions,* which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 1, *reviewing knowledge on previous PLC sessions,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (Los) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 1 and 2 learning plans for the following lessons: *a) Applied technology: Workshop safety* *b) Design and Communication Technology: Concept sketches* LO 1: Develop learning plans for Weeks 1 and 2 on general safety and concept sketches in Applied Technology and *Design and Communication Technology* incorporating cross-cutting issues (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 1 and 2 lessons in Applied Technology Department, considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 1 and 2 lessons in Applied Technology Department, considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans for Weeks 1 and 2 in Applied Technology and Design and Communication Technology (NTS 3c, 3e – 3g and 3j). LI 2.1 Discuss the learning plans for Weeks 1 and 2 lessons in Applied Technology and Design and Communication Technology. LI 2.2 Team-review learning plans for Weeks 1 and 2 in Applied Technology and Design and Communication Technology Teacher Manual. 2.2 In your groups, identify and share aspects of Weeks 1 and 2 lessons in Applied Technology Department in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 1 and 2 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 1):* *How can learners be assisted to identify safety precautions in the workshop? etc.* *b) Design and Communication Technology:* *In what ways can learners be assisted to explain concept sketches? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 1 and 2 Applied Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology (Week 1):* *i.* Learning *Task:* *Recall any two. safety precaution in the workshop? etc.* *ii. Pedagogical Exemplars:* *Talk for learning approaches: Guide learners through watching a video of an operational workshop, to co-operatively brainstorm the*	

	meaning of health and safety in the workshop with open-mindedness. The teacher should pull all students back in for whole-class feedback and to collect definitions, etc *iii. Key Assessment:* *Level 1: List two items of safety equipment used on machine in the workshop? etc.* *b) Design and Communication Technology (Week 2):* *i. Learning Task:* *Explain concept sketches? etc.* *ii. Pedagogical Exemplars* *Managing Talk for Learning: In mixed-ability groups present to learner's different types of sketches, allow learners to observe the sketches and present their findings in a whole class discussion. Ensure the groups consist of both the AP, P and HP learners, etc.* *iii. Key Assessment:* *Level 1: List three types of sketches, etc.* 2.5 Complete the learning planner templates for teaching Weeks 1 and 2 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. • **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 1 and 2 (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Alignment of essential questions with the teacher manual.* *b) Key differentiation* *c) Differentiated pedagogical and assessment strategies.* *d) Alignment of essential questions with the teacher manual.* *e) Use of GESI, SEL and national values, 21st century skills in the lessons.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins

4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing you have learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 3 on developing lesson plans for Weeks 3 and 4 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 3: Developing learning plans for Weeks 3 and 4.

The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 2, *developing learning plans for Weeks 1 and 2*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 2, *developing learning plans for Weeks 1 and 2,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manual and learning planners to effectively develop Weeks 3 and 4 learning plans for the following lessons: a) *Applied Technology: Introduction to engines and construction stakeholders* b) *Design and Communication Technology: Basic shapes, forms as well as rendering techniques in designing.* LO 1: Develop learning plans for Weeks 3 and 4 on the introduction to engines, Construction stakeholders and basic shapes, forms as well as rendering techniques in designing (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 3 and 4 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 3 and 4 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 3 and 4 in Applied Technology (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Discuss the learning plans for Weeks 3 and 4 lessons in applied technology. LI 2.2 Team review learning plans for Weeks 3 and 4 in Applied Technology. 2.2 In your groups, identify and share aspects of Weeks 3 and 4 lessons in Applied Technology Department in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 3 and 4 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 3):* *How can learners be assisted to differentiate between internal and external combustion engines? etc* *(Week 4):* *How can learners be assisted to differentiate areas of discipline of Stakeholders in the building construction industry? etc.* *b) Design and Communication Technology (Week 3):* *How can learners be assisted to state rendering techniques that are used in artwork? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 3 and 4 Applied Technology and Design and Communication Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology (Week 3):* *i. Learning Task:*	

	Identify two (2) types of engines use in motor vehicle? etc. *ii. Pedagogical Exemplars:* *Problem-based learning: Guide learners in working groups with the aid of real objects, videos, models of engines (Petrol and diesel engines) to co-operatively brainstorm to identify types of engines use in motor vehicle with open-mindedness. The teacher should pull all students back in for whole-class feedback and to collect definitions, etc.* *iii. Key Assessment:* *Level 1: Identify two (2) types of engines use in motor vehicle, etc.* *(Week 4):* *i. Learning tasks:* *Outline the different stakeholder groups one is likely to encounter on a building project? etc.* *ii. Pedagogical Exemplars:* *Experiential learning: conduct experiential learning by organising field trips to construction sites or offices of Stakeholders where learners will observe constructional activities and interact with relevant personnel in order to gain understanding of the concept of a Stakeholder of any building construction projects, etc.* *iii. Key Assessment:* *Level 1: Identify five different groups of stakeholders one can find on a building construction project, etc.* *b) Design and Communication Technology (Week 3):* *i. Learning Task:* *State rendering techniques that are used in artwork? etc.* *ii. Pedagogical Exemplars:* *In convenient groups, task learners to use relevant resources such as photographs, videos, drawings and board illustrations to identify and record the various rendering techniques used in designing, assist the AP and P learners by attending to them regularly, etc.* *iii. Key Assessment* *Level 1: State three rendering techniques that are used in artwork? etc.*	

	2.5 Complete the learning planner templates for teaching Weeks 3 and 4 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. • **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review learning plans for Weeks 3 and 4 (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 4 on developing lesson plans for Weeks 5 and 6 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 4: Developing learning plans for Weeks 5 and 6		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 3, *developing learning plans for Weeks 3 and 4*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 3, *developing learning plans for Weeks 3 and 4,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 5 and 6 learning plans for the following lessons: a) *Applied Technology: Safety in the use of electricity and safe use of hand tools in the metalwork shop* b) *Design and Communication Technology: Principles of perspective drawing and proportion in designing.* LO 1: Develop learning plans for lessons in Weeks 5 and 6 on the safety in the use of electricity, safe use of hand tools in the metalwork shop and principles of perspective drawing as well as proportion in designing (NTS 1a, 1b, 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for Weeks 5 and 6 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 5 and 6 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 5 and 6 in Applied Technology and Design and Communication Technology (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Discuss the learning plans for Weeks 5 and 6 lessons in Applied Technology and Design and Communication Technology. LI 2.2 Team-review learning plans for Weeks 5 and 6 in Applied Technology and Design and Communication Technology. 2.2 In your groups, identify and share aspects of Weeks 5 and 6 lessons in Applied Technology Department in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 5 and 6 (NTS 1a, 2c, 2e, 2f, 3d-3g). *E.g.* a) *Applied technology (Week 5):* *How can learners be assisted to observe safety at the electrical workshop? etc.* *(Week 6):* *In what ways can learners be assisted to ensure the safe and responsible use of metalwork tools? etc.* b) *Design and Communication technology (Week 5):* *How can learners be assisted to explain perspective and proportion and their relationship to designing? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 5 and 6 Applied Technology and Design and Communication lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. a) *Applied technology (Week 5):*	

	i. *Learning Tasks* *What are the common sources of electric shock in household settings? etc.* ii. *Pedagogical Exemplars:* *Talk for learning Approaches: Engage the entire class in a discussion aimed at encouraging learners to actively participate and collectively brainstorm to define electric shock, delve into its root causes, and analyse its effects, etc.* iii. *Key Assessment:* *Level 1: Identify four dangerous situations and behaviours likely to cause electric shocks? etc.* *Week 6):* i. *Learning Tasks:* *Define measuring tools, marking out tools, holding tools, striking tools and cutting tools used in metalwork? etc.* ii. *Pedagogical Exemplars:* *Pre-Assessment: Begin by conducting a pre-assessment with oral questions to understand the prior knowledge, skills and experiences of each learner regarding hand tools in metalwork. This will help the teacher tailor instructions to meet the specific needs of individual learners or groups of learners, etc.* iii. *Key Assessment* *Level 1: Identify at least three tools for each of the following: measuring, marking-out, holding, striking and cutting tools and present their answers with the aid of sketches, orally or in writing? etc.* *b) Design and Communication technology.* i. *Learning Task:* *Explain perspective and proportion and their relationship to designing? etc.* ii. *Pedagogical Exemplars:* *Project-Based Learning: In mixed ability groupings, task learners to discuss the concept of perspective and proportion related to drawing, using board illustrations, pictures, relevant videos and charts. Ensure the groups consist of both AP, P and HP learners, etc.* iii. *Key Assessment:* • *Level 2: Explain perspective and proportion and their relationship to drawing? etc,*	

	2.5 Complete the learning planner templates for teaching Weeks 5 and 6 lessons (NTS 3a, 3e-3g and 3k). *Note*: *Emphasis should be on essential questions and key notes on differentiation.*	
3. Peer-review of learning planners. **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 5 and 6 lessons (NTS 1a, 2c and 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application of 21st century skills.* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 5 on developing lesson plans for Weeks 7 and 8 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 5: Developing learning plans for Weeks 7 and 8		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 4, *developing learning plans for Weeks 5 and 6*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 4, *developing learning plans for Weeks 5 and 6,* supported learning (NTS 1a-1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use the teacher manual and learning planners to effectively develop Weeks 7 and 8 learning plans for the following lessons: a) *Applied technology: Timber and constructional as well as operational differences between petrol and diesel engines.* b) *Design and Communication technology: Object manipulation* LO 1: Develop learning plans for Weeks 7 and 8 on the timber, differences between petrol and diesel engines and *object manipulation* (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 7 and 8 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 7 and 8 lessons in Applied Technology Department considering cross-cutting	60 mins

	issues, essential questions and key notes on differentiation. LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 7 and 8 in Applied Technology (NTS 3c, 3e-3g and 3j). LI 2.1 Discuss the learning plans for Weeks 7 and 8 lessons in Applied Technology and Design and Communication Technology. LI 2.2 Team review learning plans for Weeks 7 and 8 in Applied Technology and Design and Communication Technology. 2.2 In your groups, identify and share aspects of Weeks 7 and 8 lessons in Applied Technology Department in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 7 and 8 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 7):* *How can learners be assisted to identify different items made of wood in our environment? etc.* *(Week 8):* *In what ways can learners be assisted to explain how a petrol engine generates power in its cylinder?* *b) Design and Communication technology* *(Week 7):* *Identify and record the concept of object manipulation and manipulation techniques in free-hand drawing. by using photographs, videos and real objects? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 7 and 8 Applied	

	Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology (Week 7):* *i. Learning Tasks:* *Identify the three main parts of the living tree? etc.* *ii. Pedagogical Exemplars:* *Critical thinking and talk for learning approaches: Guide learners through a video demonstration of a timber conversion process in action, to co-operatively brainstorm the meaning and methods of conversion of timber with open-mindedness and faithfulness. The teacher should pull all students back in for whole-class feedback and collect meaning explanations from learners, etc.* *iii. Key Assessment:* *Level 1: Identify different items made of wood in our environment? etc.* *(Week 8):* *i. Learning Tasks* *Explain briefly how a petrol engine generates power in its cylinder? etc.* *ii. Pedagogical Exemplars:* • *Problem-based learning: Guide learners in working groups with the aid of real objects, videos, models of engines (Petrol and diesel engines) to co-operatively brainstorm to differentiate between the construction of petrol and diesel engines. The teacher should target questions to learners as they discuss with one another, to encourage them to contribute to the discussion. The teacher should pull all students back in for whole-class feedback, etc.* *iii. Key Assessment:*	

	Level 1: Explain briefly how a petrol engine generates power in its cylinder? etc. *b) Design and Communication technology (Week 7):* *i. Learning Tasks:* *Identify and record the concept of object manipulation and manipulation techniques in free-hand drawing. by using photographs, videos and real objects? etc.* *ii. Pedagogical Exemplars:* • *Managing Talk for Learning: consider placing learners in mixed groups, and task them to use the appropriate resources to identify and record the concept of object manipulation and manipulation techniques in free-hand drawing, etc.* *iii. Key Assessment:* • *Level 1: Explain the concept of object manipulation and manipulation techniques in free-hand drawing? etc.* 2.5 Complete the learning planner templates for teaching Weeks 7 and 8 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 7 and 8 lessons (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."*	10 mins

	g) *Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in your learning plans based on the feedback from your colleagues (NTS 1b).	
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 6 on developing lesson plans for Weeks 9 and 10 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session (NTS 1a, 1b).	10 mins

DPLC Session 6: Developing learning plans for Weeks 9 and 10

The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 5, *developing learning plans for Weeks 7 and 8*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 5, *developing learning plans for Weeks 7 and 8,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 9 and 10 learning plans for the following lessons: a) *Applied technology: Roles of stakeholders in building construction projects and Concept of power generation, transmission as well as distribution in electricity supply.* b) *Design and Communication technology: tools as well as techniques used to manipulate specific objects.* LO 1: Develop learning plans for Weeks 9 and 10 on the roles of stakeholders in building construction projects, power generation, transmission as well as distribution in electricity supply and tools as well as techniques used to manipulate specific objects (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 9 and 10 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 9 and 10 lessons in Applied Technology	60 mins

	Department considering cross-cutting issues, essential questions and key notes on differentiation. LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 9 and 10 in Applied Technology (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Discuss the learning plans for Weeks 9 and 10 lessons in applied technology. LI 2.2 Team review learning plans for Weeks 9 and 10 in applied technology. 2.2 In your groups, identify and share aspects of Weeks 9 and 10 lessons in Applied Technology Department in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 9 and 10 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 9):* *How can learners be assisted to explain the relevance of the Stakeholders' forum?* *(Week 10):* *How can learners be assisted to identify methods of electrical power generation used in Ghana? etc.* *b) Design and Communication technology (Week 9):* *How can learners be assisted to identify and record the concept of object manipulation and manipulation techniques in free-hand drawing. by using photographs, videos and real objects?* 2.4 Think-pair-share key notes on differentiation in Weeks 9 and 10 Applied Technology and Design and Communication Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g.	

	a) Applied technology (Week 9): *i. Learning Tasks:* *Explain the relevance of the Stakeholders' Forum? etc.* *ii. Pedagogical Exemplars:* *Conduct experiential learning by organising field Trips to Construction Sites or offices of stakeholders where learners will observe constructional activities and interact with relevant personnel in order to gain understanding of the roles played by different Stakeholders on building, etc.* *iii. Key Assessment:* *Level 1: List the various stakeholders and the roles they play in the building construction industry? etc.* *(Week 10):* *i. Learning Tasks:* *Identify at least two methods of electrical power generation used in the Ghana today?* *ii. Key Assessment:* *Level 1: Identify two companies responsible for electrical power transmission and distribution in the Northern and Southern Ghana?* *b) Design and Communication technology (Week 9):* *i. Leaning Tasks:* *Identify and record the concept of object manipulation and manipulation techniques in free-hand drawing. by using photographs, videos and real objects? etc.* *ii. Key Assessment:* *Level 2: Use photographs, videos, drawings sketches and real objects, to explain how tools and techniques have been used to manipulate specific objects through free-hand drawing* 2.5 Complete the learning planner templates for teaching Weeks 9 and 10 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	

3. Peer-review of learning planners. • **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 9 and 10 lessons (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 7 on developing lesson plans for Weeks 11 and 12 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 7: Developing learning plans for Weeks 11 and 12		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 6, *developing learning plans for Weeks 9 and 10*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 6, *developing learning plans for Weeks 9 and 10,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 11 and 12 learning plans for the following lessons: a) *Applied technology: Ferrous as well as non-ferrous metals and Processing phases of timber.* b) *Design and Communication technology: Concept associated with objects as well as shapes.* LO 1: Develop learning plans for Weeks 11 and 12 on the ferrous as well as non-ferrous metals**,** processing phases of timber and *concept associated with objects as well as shapes* (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 11 and 12 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 11 and 12 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 11 and 12 in	60 mins

	applied technology. (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 1.1 Discuss the learning plans for Weeks 11 and 12 lessons in Applied Technology and Design and Communication Technology. LI 2.2 Team review learning plans for Weeks 11 and 12 in Applied Technology and Design and Communication Technology 2.2 In your groups, identify and share aspects of Weeks 11 and 12 lessons in Applied Technology Department in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 11 and 12 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 11):* *How can I help learners to differentiate between ferrous and non-ferrous metals? etc.* *(Week 12):* *How can the appearance of timber be described to the understanding of the learner?* *b) Design and Communication technology (Week 11):* *How can learners be assisted to examine the various Concepts, symbolism, metaphors, and narratives associated with objects and shapes? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 11 and 12 Applied Technology and Design and Communication Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology (Week 11):*	

	i. *Learning Tasks:* *Describe the properties of ferrous metals, non-ferrous metals and non-metallic materials (plastics)? etc.* ii. *Pedagogical Exemplars:* *Talk for learning: the teacher provides information about ferrous and non-ferrous metals using a variety of instructional modalities. This can include visual aids such as charts, diagrams, and videos, hands-on demonstrations with actual metal samples and verbal explanations, etc.* iii. *Key Assessment:* *Level 2: State the difference between ferrous and non-ferrous metals? etc.* *(Week 12):* i. *Learning Tasks:* *Identify the three phases of timber processing in the woodwork industry? etc.* ii. *Pedagogical Exemplars:* *Critical Thinking and talk for learning approaches: Guide learners through a video demonstration of the three phases of timber processing in the woodwork industry, to co-operatively brainstorm the meaning of the phases of timber processing in the woodwork industry with open-mindedness and faithfulness. The teacher should pull all students back in for whole-class feedback and collect meaning explanations from learners, etc.* iii. *Key Assessment:* *Level 1: Name the three-processing phases of timber in the woodwork industry? etc.* *b) Design and Communication technology (Week 11):* i. *Learning Tasks* *Examine the various Concepts, symbolism, metaphors, and narratives associated with objects and shapes? etc.* ii. *Pedagogical Exemplars* • *Managing Talk for Learning: consider placing learners in mixed groups, and task them to examine the concept, symbolism, metaphors, and narratives associated with objects and shapes. This can be done with the aid of*	

	photographs/drawings and sketches, videos, real objects, etc. *iii. Key Assessment* *Level 2: Explain how tools and techniques have been used to manipulate specific objects through free-hand drawing? etc.* 2.6 Complete the learning planner templates for teaching Weeks 11 and 12 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. • **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 11 and 12 lessons (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation activities* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 8 on developing lesson plans for Weeks 13 and 14 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 8: Developing learning plans for Weeks 13 and 14		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 7, *developing learning plans for Weeks 11 and 12*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 7, *developing learning plans for Weeks 11 and 12,* supported learning (NTS 1a- 1c).	10 mins
3. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use the teacher manual and learning planners to effectively develop Weeks 13 and 14 learning plans for the following lessons: a) *Applied technology: Personal protective equipment and Professionals in the building construction industry.* b) *Design and Communication technology: Plane geometrical figures* LO 1: Develop learning plans for Weeks 13 and 14 on personal protective equipment, professionals in the building construction industry and plane geometrical figures integrating cross-cutting issues (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 13 and 14 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 13 and 14 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 13 and 14 in Applied Technology and Design and Communication Technology (NTS 3c, 3e-3g and 3j). LI 2.1 Discuss the learning plans for Weeks 13 and 14 lessons in Applied Technology and Design and Communication Technology. LI 2.2 Team review learning plans for week 13 and 14 in Applied Technology and Design and Communication Technology. 2.2 In your groups, identify and share aspects of Weeks 13 and 14 lessons in Applied Technology and Design and Communication Technology in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 13 and 14 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 13):* *How can learners be assisted to outline personal protective equipment (PPE) used in a vehicle servicing and repair workshop? etc.* *(Week 14):* *How can learners be assisted to differentiate between the pre-contract and the post-contract stages of a building construction project? etc.* *b) Design and Communication technology (Week 13):* *In What ways can learners be assisted to explain the fundamental principles of plane geometry? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 13 and 14 Applied Technology and Design and Communication Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j).	

	Note: Refer to the teacher manual for more examples on differentiation questions. E.g. *a) Applied technology (Week 13):* *i. Learning Tasks:* *Outline personal protective equipment (PPE) used in a vehicle servicing and repair workshop? etc.* *ii. Pedagogical Exemplars:* *Problem-Based learning: Place learners in groups to voluntarily develop a list of personal protective equipment (PPEs) utilized in a vehicle repair and maintenance business by using real objects and videos. To induce students to participate in the discussion, the teacher should direct questions at them while they are having the discussion amongst themselves. When the class is back together, the teacher should gather all of the learners for feedback, etc.* *iii. Key Assessment:* *Level 1: Outline five items of personal protective equipment (PPE) used in a vehicle servicing and repair workshop? etc.* *(Week 14):* *i. Learning Tasks:* *Explain the steps to take to become a professional in the building construction industry? etc* *ii. Pedagogical Exemplars:* *Conduct experiential Learning by organizing field trips to construction Sites or Offices of consultants where learners will interact with the professionals and understand professional practice, etc.* *iii. Key Assessment:* *Level 1: List the major steps to be taken for an individual to become a professional in the building construction industry? etc.* *b) Design and Communication technology (Week 13):* *i. Learning Tasks:* *Explain the concept of plane geometry and give at least two examples* *ii. Pedagogical Exemplars:* *Environmental observation, collaboration and discussion: With the aid of relevant pictures,*	

	cardboard charts and objects in the school environment, draw on learners' previous knowledge on plane geometry from basic 9 in an inclusive whole class discussion to explain plane geometry in their own words, etc. *iii. Key Assessment:* *Level 1: Explain the concept of plane geometry? etc.* 2.5 Complete the learning planner templates for teaching Weeks 13 and 14 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 3 and 4 lessons (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 9 on developing lesson plans for Weeks 15 and 16 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 9: Developing learning plans for Weeks 15 and 16		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 8, *developing learning plans for Weeks 13 and 14*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 8, *developing learning plans for Weeks 13 and 14,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 15 and 16 learning plans for the following lessons: a) *Applied technology: Power transmission as well as distribution in electricity supply and Gas welding (tools and equipment).* b) *Design and Communication technology: Constructing an ellipse as a plane geometrical figure* LO 1: Develop learning plans for Weeks 15 and 16 on the power transmission as well as distribution in electricity supply, gas welding (tools and equipment) and construction of an ellipse as a plane geometrical figure (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 15 and 16 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 15 and 16 lessons in Applied Technology	60 mins

	Department considering cross-cutting issues, essential questions and key notes on differentiation. LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 15 and 16 in Applied Technology (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 1.1 Discuss the learning plans for Weeks 15 and 16 lessons in applied technology. LI 2.2 Team review learning plans for Weeks 15 and 16 in applied technology. 2.2 In your groups, identify and share aspects of Weeks 15 and 16 lessons in Applied Technology and Design and Communications Technology in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 15 and 16 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. a) *Applied technology (Week 15):* *In what ways can learners be assisted to explain how overloading a circuit affect the current flowing through it? etc.* *(Week 16):* *How can learners be assisted to explain the uses of acetylene cylinders in gas welding? etc.* b) *Design and Communication technology (Week 15):* *How can learners be assisted to identify objects that are made of elliptical shapes that can be found in their environment? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 15 and 16 Applied Technology and Design and Communications Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j).	

	Note: ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology (Week 15):* *b) Learning Tasks:* *What happens to the voltage across a circuit when it is overloaded? etc.* *i. Pedagogical Exemplars:* *Talk for learning approaches: Guide learners through watching a video to demonstrate the consequences of overloading the distribution network. Teachers should pull all learners back in for whole-class feedback and to collect ideas, etc.* *ii. Key Assessment:* *Level 1: What are the potential safety hazards and risks associated with illegal gas connections? etc.* *(Week 16):* *i. Learning Tasks:* *Explain the uses of acetylene cylinders in gas welding? etc* *ii. Pedagogical Exemplars:* • *Pre-Assessment: The teacher begins by assessing learners' prior knowledge and experience with gas welding tools and equipment. Use pre-assessment tools such as quizzes, surveys, or informal discussions to gauge learners' familiarity with welding processes, safety protocols and equipment usage, etc.* *iii. Key Assessment:* *Level 3: Distinguish between the acetylene regulator and the oxygen regulator? etc.* *b) Design and Communication technology (Week 15):* *i. Learning Task:* *Based on your knowledge acquired from construction of Archimedean spiral and orthographic projection from basic 9. Design a functional spiral stair plan for a two-storey domestic building? etc.* *ii. Pedagogical Exemplars*	

	With the aid of cut shapes, You Tube videos or pictures, show learners different forms of Archimedean spiral that exist naturally and those that are designed *iii. Key Assessment:* *Level 1: Name three objects that are made of elliptical shapes that you can find in your environment.* 2.5 Complete the learning planner templates for teaching Weeks 15 and 16 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. • **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 15 and 16 lessons (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 10 on developing lesson plans for Weeks 17 and 18 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 10: Developing learning plans for Weeks 17 and 18		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 9, *developing learning plans for Weeks 15 and 16*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 9, *developing learning plans for Weeks 15 and 16,* supported learning (NTS 1a- 1c).	10 mins
4. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use the teacher manual and learning planners to effectively develop Weeks 17 and 18 learning plans for the following lessons: a) *Applied technology: types of manufactured boards and components of vehicle transmission system.* b) *Design and Communication technology: Perspective drawing.* LO 1: Develop learning plans for Weeks 17 and 18 on types of manufactured boards, components of vehicle transmission system and perspective drawing integrating cross-cutting issues (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 17 and 18 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 17 and 18 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 17 and 18 in Applied Technology (NTS 3c, 3e-3g and 3j). LI 2.1 Discuss the learning plans for Weeks 17 and 18 lessons in applied technology. LI 1.2 Team review learning plans for week 17 and 18 in applied technology. 2.2 In your groups, identify and share aspects of Weeks 13 and 14 lessons in Applied Technology and Design and Communications Technology in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 17 and 18 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 17):* *How can learners be assisted to identify significant features of veneers in plywood? etc.* *(Week 18):* *How can learners be assisted to define vehicle transmission system? etc.* *b) Design and Communication technology (Week 17):* *How can learners be assisted to explain the concept of drawing objects in perspective? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 17 and 18 Applied Technology and Design and Communications Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology (Week 17):* *i. Learning Task:*	

	Identify any two significant features of veneers in plywood? etc. *ii. Pedagogical Exemplars:* *Critical Thinking and Talk for Learning Approaches: Guide learners through a video demonstration of the types of manufactured boards made from wood and non-wood residues, to co-operatively brainstorm the meaning of the manufactured boards with open-mindedness. The teacher should pull all students back in for whole-class feedback and collect meaning explanations from learners, etc.* *iii. Key Assessment:* *Level 1: Give four types of manufactured boards made from Wood and non-wood residues? etc.* *Week 18):* *i. Learning Task:* *Define vehicle transmission system? etc.* *ii. Pedagogical Exemplars:* *Problem-Based Learning: Place learners in groups to define and list types of vehicle transmission system. To induce students to participate in the discussion, the teacher should direct questions at them while they are having the discussion amongst themselves. When the class is back together, the teacher should gather all of the learners for feedback., etc.* *iii. Key Assessment:* *Level 2: Define vehicle transmission system? etc.* *b) Design and Communication technology (Week 17):* *i. Learning Task:* *Explain the concept of drawing objects in perspective.? etc.* *ii. Pedagogical Exemplars:* *With relevant pictures and videos show learners how objects appear in perspective. Using think pair share let learners observe and present their findings in a whole class discursion. Encourage the AP and P learners to participate in the discursion, etc.* *iii. Key Assessments:* *Level 1: Explain the principles used in drawing objects in one-point and two- point perspective? etc.* 2.5 Complete the learning planner templates for teaching Weeks 17 and 18 lessons (NTS 3a, 3e-3g and 3k).	

	Note: *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 17 and 18 lessons (NTS 1a, 2c, 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application f 21st "century skills."* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in their learning plans based on the feedback from their colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 11 on developing lesson plans for Weeks 19 and 20 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 11: Developing learning plans for Weeks 19 and 20		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 10, *developing learning plans for Weeks 17 and 18*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 10, *developing learning plans for Weeks 17 and 18,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 19 and 20 learning plans for the following lessons: a) *Applied technology: concept of electrical as well as electronics circuits and tools as well as equipment for electric arc welding.* b) *Design and Communication technology: Surface development of prisms* LO 1: Develop learning plans for Weeks 19 and 20 on the concept of electrical as well as electronics circuits, tools as well as equipment for electric arc welding and surface development of prisms (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 19 and 20 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 19 and 20 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 19 and 20 in Applied Technology (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Discuss the learning plans for Weeks 19 and 20 lessons in applied technology. LI 2.2 Team review learning plans for Weeks 9 and 10 in applied technology. 2.2 In your groups, identify and share aspects of Weeks 19 and 20 lessons in Applied Technology and Design and Communications Technology in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 19 and 20 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology: (Week 19):* *How can learners be assisted to define what an electronic circuit is and how it differs from an electrical circuit? etc.* *(Week 20):* *In what ways can learners be assisted to define electric arc welding? etc.* *b) Design and Communication technology (Week 19):* *In what ways can learners be assisted to explain the principles used to develop the surfaces of prisms? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 19 and 20 Applied Technology and Design and Communications Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note:* ***Refer to the teacher manual for more examples on differentiation questions*.** E.g. *a) Applied technology: (Week 19):*	

	i. *Learning tasks:* *Define what an electronic circuit is and how it differs from an electrical circuit? etc.* ii. *Pedagogical Exemplars:* *Talk for learning approaches: Guide learners through watching a video of an electronic circuit and electrical circuit, to co-operatively brainstorm the meaning of electronic circuit and how it differs from an electrical circuit with open-mindedness. The teacher should pull all students back in for whole-class feedback and to collect definitions, etc.* iii. *Key Assessment:* *Level 1: Explain the key differences between electrical circuits and electronic circuits in terms of components used and their applications? etc.* *(Week 20):* i. *Learning tasks* *What is electric arc welding? etc.* ii. *Pedagogical Exemplars:* *Experiential learning: Learners undertake educational visit to a local welding workshop or go to the school's workshop where the set up and the use of tools and equipment are explained to them fairly. Learners are further guided to make appropriate reference to the equipment used in electric arc welding using relevant resources, etc.* iii. *Key Assessment:* *Level 4: Explain the differences between generator welding machine and the transformer welding machine? etc.* b) *Design and Communication technology (Week 19):* i. *Learning Task:* *Explain the principles used to develop the surfaces of prisms? etc.* ii. *Pedagogical Exemplars* *Communication, critical thinking, discussion and individual learning: In mix-ability groupings, learners cut open a water bottle, milk tin, toothpaste box and matches box and spread it out to observe the surfaces formed. Make sure the AP and P also participate in the activity, etc.*	

	iii. Key Assessments *Level 1: Explain the principles of developing surfaces of prisms? etc.* 2.5 Complete the learning planner templates for teaching Weeks 19 and 20 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. • **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 5 and 6 lessons (NTS 1a, 2c and 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application of 21st century skills.* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in your learning plans based on the feedback from your colleagues (NTS 1b).	10 mins
5. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read DPLC Session 12 on developing lesson plans for Weeks 21 and 22 and bring along teacher manual, NTS handbook, and a laptop in preparation for the next session. (NTS 1a, 1b).	10 mins

DPLC Session 12: Developing learning plans for Weeks 21 and 22

The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 11, *developing learning plans for Weeks 19 and 20*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 11, *developing learning plans for Weeks 19 and 20,* supported learning (NTS 1a- 1c).	10 mins
5. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use the teacher manual and learning planners to effectively develop Weeks 21 and 22 learning plans for the following lessons: a) *Applied technology: Uses of manufactured boards and components of braking system.* b) *Design and Communication technology: Introduction to fractal geometry.* LO 1: Develop learning plans for Weeks 21 and 22 on the uses of manufactured boards, components of braking system and introduction to fractal geometry (NTS 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 21 and 22 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 21 and 22 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation.	60 mins

	LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 21 and 22 in Applied Technology and Design and Communications Technology (NTS 3c, 3e-3g and 3j). LI 2.1 Discuss the learning plans for Weeks 21 and 22 lessons in Applied Technology and Design and Communications Technology LI 2.2 Team review learning plans for Weeks 21 and 22 in Applied Technology and Design and Communications Technology. 2.2 In your groups, identify and share aspects of Weeks 21 and 22 lessons in Applied Technology and Design and Communications Technology in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 21 and 22 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 21):* *How can learners be assisted to identify two uses of manufactured boards made from wood and non-wood residues? etc.* *(Week 21):* *How can learners be assisted to explain the primary functions of a vehicle's braking system? etc.* *b) Design and Communication technology (Week 21):* *How can learners be assisted to identify three types of fractal geometry and how they can be applied in real life situation? etc.* 2.4 Think-pair-share key notes on differentiation in Weeks 21 and 22 Applied Technology and Design and Communications Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note: Refer to the teacher manual for more examples on differentiation questions*.	

	E.g. *a) Applied technology (Week 21):* *i. Learning Task:* *Identify two uses of manufactured boards made from wood and non-wood residues? etc.* *ii. Pedagogical Exemplars:* *Critical Thinking and Talk for Learning Approaches: Guide learners through a video demonstration of manufactured boards (Engineered wood), to co-operatively brainstorm the uses of manufactured boards (Engineered wood) with open-mindedness and faithfulness. The teacher should pull all students back in for whole-class feedback and collect meaning explanations from learners, etc.* *iii. Key Assessment* *Level 1: State three uses of manufactured boards made from wood and non-wood residues? etc.* *(Week 22):* *i. Learning Task:* *Explain the primary functions of the vehicle braking system? etc.* *ii. Pedagogical Exemplars:* *With the use of videos, and models for demonstration, help learners to brainstorm and discuss three points where the vehicle brakes come into operation* *iii. Key Assessments:* *Level 1: How does the principle of friction play a crucial role in the operation of a braking system, and why is it essential in slowing down or stopping a vehicle? etc.* *b) Design and Communication technology (Week 21):* *i. Learning Task:* *Explain the concept of fractal geometry? etc.* *ii. Pedagogical Exemplars* *With the use of charts, videos, fabrics, flowers, leaves, and in mix-ability groups guide learners to observe the pattern of given materials and identify the common geometrical shape running through the design of the materials given. Guide learners to present their findings in a whole class discussion. Make sure the AP and P learners participate in the discursion, etc.* *iii. Key Assessments*	

	Level 2: Explain fractal geometry? etc. 2.5 Complete the learning planner templates for teaching Weeks 21 and 22 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	
3. Peer-review of learning planners. **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 21 and 22 lessons (NTS 1a, 2c and 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application of 21st century skills.* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in your learning plans based on the feedback from your colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l). 4.3 Remember to read the contents of Weeks 23 and 24 of the teacher manual and DPLC Handbook Session 13 in preparation for the next session (NTS 1a, 1b).	10 mins

DPLC Session 13: Developing learning plans for Weeks 23 and 24		
The sections below provide the frame for what is to be done in the session	**Guidance Notes on Teacher Activity during the DPLC Session.** *What teachers will do during each stage of the session*	**Time in session**
1. Introduction: Review of previous learning using ideas from the last DPLC session, and introducing the Departmental PLC Handbook	1.1 Share two things you implemented based on DPLC Session 12, *developing learning plans for Weeks 21 and 22*, which you think impacted learning positively (NTS 1a, 1b). 1.2 As a critical friend, discuss why you think what a colleague did through the application of lessons learnt in DPLC Session 3, *developing learning plans for Weeks 3 and 4,* supported learning (NTS 1a- 1c).	10 mins
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT and 21st century skills	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). **Purpose:** This session is to assist teachers in the Applied Technology Department to use teacher manuals and learning planners to effectively develop Weeks 23 and 24 learning plans for the following lessons: a) *Applied technology: Reasons for mobilisation and site preparations and hoarding of site to facilitate constructional works.* b) *Design and Communication technology: Application of fractal geometry in designing.* LO 1: Develop learning plans for lessons in Weeks 23 and 24 on the design brief, generate solution of identified problems and the uses of manufactured boards over solid wood (NTS 1a, 1b, 3c, 3e-3g and 3j). LI 1.1 Develop learning plans for teaching Weeks 23 and 24 lessons in Applied Technology Department considering cross-cutting issues, essential questions and key notes on differentiation. LI 1.2 Complete the learning planner templates for teaching Weeks 23 and 24 lessons in Applied Technology Department	60 mins

	considering cross-cutting issues, essential questions and key notes on differentiation. LO 2: Review the learning plans prepared by various groups for teaching lessons in Weeks 23 and 24 in applied technology. (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Discuss the learning plans for Weeks 23 and 24 lessons in applied technology. LI 2.2 Team-review learning plans for Weeks 23 and 24 in applied technology. 2.2 In your groups, identify and share aspects of Weeks 23 and 24 lessons in Applied Technology and Design and Communications Technology in your teacher manual that have been captured in the learning planner (NTS 1a, 2c, 2f and 3d-3g). *E.g.* *Learning indicator(s), etc.* 2.3 Review the essential questions that support the achievement of the LOs and LIs in the lessons in Weeks 23 and 24 (NTS 1a, 2c, 2e, 2f, 3d-3g). E.g. *a) Applied technology (Week 23):* *In what ways can learners be assisted to discover the primary purpose of mobilisation in the building construction industry? etc.* *(Week 24):* *i. How can learners be assisted to describe hoarding panels used for advertisement? etc.* *b) Design and Communication technology (Week 23):* *How can learners be assisted to generate fractal patterns geometrically?* 2.4 Think-pair-share key notes on differentiation in Weeks 23 and 24 Applied Technology and Design and Communications Technology lessons that cater for the diverse needs of lessons (NTS 3e, 3g, 3i and 3j). *Note: Refer to the teacher manual for more examples on differentiation questions*. E.g.	

	a) Applied technology (Week 23): *i. Learning Task:* *Explain the different types of construction projects that require mobilisation. etc.* *ii. Pedagogical Exemplars:* *Surfing the internet, reading through rreference books, going on field trips to explain different types of construction projects that require mobilisation, etc.* *iii. Learning Task:* *Level 1: What is mobilisation in the context of building construction, and why is it a critical phase in a construction project? etc.* *(Week 24):* i. *Learning Task:* *Describe on site preparation and hoarding strategies that differ in urban construction projects compared to rural or remote construction sites? etc.* *ii. Pedagogical Exemplars:* *In groups, surf the Internet, reading through reference books or going on field trips? etc.* *iii. Key Assessment:* • *Level 2: Why is the location of welfare facilities a crucial aspect of site planning, and how does it impact the progress of work? etc.* *b) Design and Communication technology (Week 23):* *i. Learning Task:* • *Generate fractal patterns geometrically? etc.* *ii. Pedagogical Exemplars* *Using videos, charts, research and internet surf, guide learners to explore varieties of fractal patterns in mixed ability groups and present their findings in a whole class discursion. Make sure the AP and P learners take part in the discursion, etc.* *iii. Key Assessments:* *Level 2: Generate at least two fractal patterns from simple geometrical figures? etc.* 2.5 Complete the learning planner templates for teaching Weeks 23 and 24 lessons (NTS 3a, 3e-3g and 3k). *Note:* *Emphasis should be on essential questions and differentiation activities.*	

3. Peer-review of learning planners. **Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.**	3.1 Peer-review the learning plans for Weeks 5 and 6 lessons (NTS 1a, 2c and 3h). *Hint* *Areas to consider for review:* *a) Conformance to the learning plan structure.* *b) Alignment of essential questions with the teacher manual.* *c) Key differentiation* *d) Suitability of selected resources and feasibility of executing the learning plan.* *e) Integration of GESI, SEL and national values.* *f) Application of 21st century skills.* *g) Differentiated instruction and assessment, etc.* 3.2 Make necessary corrections in your learning plans based on the feedback from your colleagues (NTS 1b).	10 mins
4. Evaluation and review of session: • **Noting that teachers need to identify critical friends to observe lessons and report at the next session.**	4.1 Write one thing learnt at this session (NTS 1a). 4.2 Complete the learning plans which were not completed during the session (NTS 3l).	10 mins

Appendix 1

Applied Technology

<table>
<tr><th colspan="8">Learning Plan</th></tr>
<tr><td>Subject</td><td>Applied Technology</td><td>Week</td><td>1</td><td>Duration</td><td>120min</td><td>Form</td><td>1</td></tr>
<tr><td>Strand</td><td>Wood Technology</td><td>Sub-Strand</td><td colspan="5">Tools and Machines in Woodwork Industry</td></tr>
<tr><td>Content Standard</td><td colspan="7">Demonstrate knowledge and understanding of Health and Safety in woodwork industry</td></tr>
<tr><td>Learning Outcome(s)</td><td colspan="7">Demonstrate knowledge and understanding in health and safety and apply the appropriate safety measures in wood working environment.</td></tr>
<tr><td>Learning Indicator(s)</td><td colspan="7">Explain the meaning of personal safety, workshop safety and materials safety.</td></tr>
<tr><td>Essential Question(s)</td><td colspan="7">How can learners be assisted to identify safety precautions in the workshop?
How can learners be assisted to demonstrate the safe use of machine tools in the workshop?
How can learners use the content of Safety at the applied technology workshop in real life situations? etc.</td></tr>
<tr><td>Pedagogical Strategies</td><td colspan="7">Critical Thinking and Talk for Learning Approaches, Group work/Collaborative Learning under mixed-grouping (gender, background, etc.), Digital Literacy learning, Experiential learning, Observation, brainstorming, demonstration</td></tr>
<tr><td>Teaching & Learning Resources</td><td colspan="7">Charts, pictures, videos and real object (nose mask, goggles, safety boots, overcoat, gloves helmet)</td></tr>
<tr><th colspan="8">Key Notes on Differentiation</th></tr>
<tr><td colspan="8">i. Learning Task:
Recall any two. safety precaution in the workshop?
Demonstrate the safe use of machine tools in the workshop?
Demonstrate how to use the content of Safety at the applied technology workshop in real life situations?
ii. Pedagogical Exemplars:
Talk for learning approaches: Guide learners through watching a video of an operational workshop, to co-operatively brainstorm the meaning of health and safety in the workshop with open-mindedness. The teacher should pull all students back in for whole-class feedback and to collect definitions
Group work/collaborative learning: Place learners into mixed ability groups and task them to co-operatively discuss the causes of accidents in the workshop with open-mindedness and patience. HP learners can be tasked with also supporting groups in discussion like the teacher</td></tr>
</table>

- *Role play: The teacher should model to learners' safe use of tools in the classroom workshop and ask students questions to ensure understanding of safe use of machine tools. From here students can use role play to practice safe use of machine tools prior to using the actual equipment. As teachers assess learners' confidence, they can move to demonstrating safe use of machine tools on the equipment, etc.*

iii. Key Assessment:

- *Level 1: List two items of safety equipment used on machine in the workshop.*
- *Level 2: How can accidents be prevented by the safe use of machine tools in the workshop?*
- *Level 3: Why is it necessary to ensure protection of the eyes when using machinery? etc.*

Keywords	*Injury, damage, safety, tools, machines, accident, and workshop.*

Lesson 1

Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual

Teacher Activity	***Learner Activity***
Starter *<u>Activity (10 minutes)</u>* *Review learners' previous knowledge on safety in the workshop using real-life examples from (A leaner dressed in his/her safety wear).* *Ask learners in mixed-gender groups to discuss the ways of observing health and safety in the workshop and prepare a sample for whole-class discussion.*	
<u>Introductory Activity (15minutes)</u> *Help learners to organize themselves in mixed-ability groups, then present them with charts, pictures, videos and real object (A leaner dressed in his/her safety wear) and task learners to discuss and come up with two different ways they can demonstrating safety in the workshop that will make it appealing to users. Encourage learners to show respect for individual diverse views as they interact and collaborate in their groups.* ***<u>Activity 1 (40 minutes)</u>*** *In mixed-gender groups (gender, ability, background, religion, language etc) to brainstorm on effective ways of promoting safety in the workshop and ask learners to Surf through the Internet for information on safety in the workshop.*	***<u>Introductory Activity (15minutes)</u>*** *In your groups, discuss and come out with two different ways that you can demonstrate safety in the workshop to make it appealing to other users. Please as you carry out your discussions, show respect to others' views as you interact and collaborate with group members.* ***<u>Activity 1 (40 minutes)</u>*** *In your groups, brainstorm on effective ways of promoting health and safety in the workshop using the Internet where available. Please be wary of the use of the IT tool for this task. Use it appropriately as expected of you.*

Activity 2 (40 minutes) *Using a computer application tool for presentations such as Power Point template (PPT) (where available), call out groups to present effective ways of promoting health and safety in the workshop to the class. Be fair in the allocation of resources to groups for their presentations.*	***Activity 2 (40 minutes)*** *I. Design a presentation using a computer application tool such as PPTs and present your effective ways of promoting safety in the workshop to the class.* *II. Please ask questions and contributions to the presentations. Tell how confident and effective your friends presented their work including the use of the right vocabulary for the concept being treated.*
Assessment DoK aligned to the Curriculum and Subject Teacher Manual	
Level 1: Recall. *1. Mention the types of safety in the workshop.* ***Level 1: Recall.*** *2. State examples of workshop safety, personal safety tool safety.* ***Level 2: Skills of conceptual Understanding.*** *3. Explain How would you protect yourself and others from accidents in the workshop?*	
Lesson Closure ***In completing this part, refer to the Essential Questions to check that learning has taken place.***	
Activity (15 minutes) *I. Teacher will close the lesson by a seamless transition to plenary by making reference to the "Essential Questions on Knowledge Hierarchy", recap of the main points of the lesson and ask oral questions to assess the understanding of the learners. The learners answer the questions orally and also ask questions that baffles their minds for clarification and better understanding.*	
Reflection & Remarks	
❖ *What was my best moment in today's lesson and how can I create more of such situations?* ❖ *What did the learners find difficult to understand, and what activities did learners complete with ease and accuracy?* ❖ *Which materials best supported the delivery of the lesson and how did learners find its use in aiding their understanding of the concept taught?* ❖ *Were the different subgroups in the class catered?* *Were the learners enthusiastic about the activities and resources employed in the delivery of the lesson*	
Lesson 2	
Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual	
Teacher Activity	***Learner Activity***
Starter ***Activity (10 minutes)*** *Review learners' previous knowledge on safety in the workshop using real-life examples*	

from (A leaner dressed in his/her safety wear).
Ask learners in mixed-gender groups to discuss the ways of observing health and safety in the workshop and prepare a sample for whole-class discussion.

Introductory activity (25 minutes) *Help learners to organize themselves in mixed-ability groups, then present them with charts, pictures, videos and real object (A leaner dressed in his/her safety wear) and task learners to discuss and come up with two different ways they can demonstrating safety in the workshop that will make it appealing to users. Encourage learners to show respect for individual diverse views as they interact and collaborate in their groups.*	***Introductory activity (25 minutes)*** *In your groups, discuss and come up with two different ways that you can demonstrate safety in the workshop to make it appealing to other users. Please, as you carry out your discussions, show respect for others' views as you interact and collaborate with group members.*
Activity 1 (25 minutes) *Lead a class discussion in which you illustrate the best practices for fostering safety in the workshop. Give students the chance to clarify their understanding by asking questions to get more information. As students look for additional information and clarity from the class, encourage them to be cautious of preconceived notions about the talents and presentations of other groups.*	***Activity 1 (30 minutes)*** *Participate in a class discussion about how worker safety and occupational health impact the productivity and competitiveness of national and international economies. To help you organize your thoughts, clarify things further by asking questions. Be cautious not to assume anything negative about people who ask the class for more clarification or explanation.*

Assessment DoK aligned to the Curriculum and Subject Teacher Manual

Level 2: Skills of conceptual Understanding.

1. Why should spillage of oil and water be prevented in the workshop?

Level 3; Strategic Reasoning

2. Discuss how occupational health and safety of woodworkers affect national and global economies productivity and competitiveness.

Level 3; Strategic Reasoning

3. Workers in applied technology do not put on personal protective equipment during processing, explain why and describe what you can do to persuade them to do otherwise.

Lesson Closure

In completing this part, refer to the Essential Questions to check that learning has taken place.

Activity (15 minutes)

Teacher will close the lesson by a seamless transition to plenary by making reference to the "Essential Questions on Knowledge Hierarchy", recap of the main points of the lesson and ask oral questions to assess the understanding of the learners. The learners answer the questions orally and also ask questions that baffles their minds for clarification and better understanding.

Reflection & Remarks

- *What was my best moment in today's lesson and how can I create more of such situations?*
- *What did the learners find difficult to understand, and what activities did learners complete with ease and accuracy?*
- *Which materials best supported the delivery of the lesson and how did learners find its use in aiding their understanding of the concept taught?*
- *Were the different subgroups in the class catered?*

Were the learners enthusiastic about the activities and resources employed in the delivery of the lesson

Design and Communication Technology

<table>
<tr><th colspan="8">Learning Planner</th></tr>
<tr><td>Subject</td><td>Design and Communication Technology</td><td>Week</td><td>1</td><td>Duration</td><td>120 mins</td><td>Form</td><td>1</td></tr>
<tr><td>Strand</td><td>Conceptual drawings</td><td>Sub-Strand</td><td colspan="5">Concept sketches</td></tr>
<tr><td>Content Standard</td><td colspan="7">Demonstrate knowledge and understanding of the concept of sketches, in terms of rendering techniques and the use of perspective drawing and proportion in generating and creating designs using free-hand drawing.</td></tr>
<tr><td>Learning Outcome(s)</td><td colspan="7">Apply knowledge and skills of the concept sketches to generate and create designs using freehand drawing by applying rendering techniques in designing as well as the principles of perspective drawing and proportion</td></tr>
<tr><td>Learning Indicator</td><td colspan="7">Explain concept sketches and their applications in designing</td></tr>
<tr><td>Essential Question(s)</td><td colspan="7">• In what ways can learners be assisted to explain concept sketches?
• How can learners be assisted to list types of sketches?
• In what ways can learners be assisted to Explain line consistency and line weight?</td></tr>
<tr><td>Pedagogical Strategies</td><td colspan="7">Talk for learning, illustrations, Collaboration/ Group work/Problem-based learning, Project-based learning
Problem-Based Learning</td></tr>
<tr><td>Teaching & Learning Resources</td><td colspan="7">Models, Charts, marker/chalk/charcoal/pencil/pen, reference books, drawing studio/classroom access to internet, masking tape, sketchpad, LCD Projector.</td></tr>
<tr><th colspan="8">Key Notes on Differentiation</th></tr>
<tr><td colspan="8">i. Learning Task:
• Explain concept sketches?
• List types of sketches?
• Explain line consistency and line weight? etc.

ii. Pedagogical Exemplars
• Managing Talk for Learning: In mixed-ability groups present to learner's different types of sketches, allow learners to observe the sketches and present their findings in a whole class discursion. Ensure the groups consist of both the AP, P and HP learners
• In their groups assist learners to use internet surf, relevant videos and charts, to research and discuss concept sketches, types of sketches, their application in the design process, as well as tools and materials used for sketching
• Ensure the AP and P learners participate in the research and discursions</td></tr>
</table>

Assist learners to present their findings in a group presentation, allow the P learners to lead the presentation, etc.

iii. Key Assessment:

- *Level 1: List three types of sketches?*
- *Level 2: Explain concept sketches through any medium?*
- *Level 2: Explain the following? etc.*

Keywords	Concept sketches, Line quality/weight, **Line consistency, stroke weight and** Blending stumps.

Lesson 1

Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual

Teacher Activity	***Learner Activity***
Starter *<u>Activity (10 minutes)</u>* ***Show learners a short video of an artist working in his studio, let learners observe the video and discuss what they observed in the whole class***	
<u>Introductory Activity (15minutes)</u> *Based on the video watched ask learners to try their hands on any artistic works on a sketch pad and encourage learners to appreciate each other's art*	***<u>Introductory Activity (15minutes)</u>*** *Learners create artistic drawings on their sketch pad and exchange with their friends for appreciation*
<u>Activity 1 (40 minutes)</u> *In mix ability groups assist learners to use internet surf, relevant videos and charts, to research and discuss concept sketches, types of sketches, their application in the design process, as well as tools and materials used for sketching. Ensure the AP and P learners participate in the research and discussions.*	***<u>Activity 1 (40 minutes)</u>*** *In their groups learners use internet surf, relevant videos and charts, to research and discuss concept sketches, types of sketches, their application in the design process, as well as tools and materials used for sketching.*
<u>Activity 2 (40 minutes)</u> *Assist learners to present their findings in a group presentation, allow the P learners to lead the presentation.*	***<u>Activity 2 (40 minutes)</u>*** *In their groups learners present their findings in turns and produce a concise note on concept sketches, types of sketches, their application in the design process.*

Assessment DoK aligned to the Curriculum and Subject Teacher Manual

Level 1 assessment

1. List three types of sketches

2. State two importance of sketches in the design process

Level 2 assessment

3. Explain concept sketches through any medium

Lesson Closure

In completing this part, refer to the Essential Questions to check that learning has taken place.

Activity (15 minutes)

a)

Reflection & Remarks

Lesson 2

Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual

Teacher Activity	*Learner Activity*
Starter *Activity (10 minutes)* *Paste learners artworks they did previously in the classroom/ studio to create an art gallery and allow learners to observe and appreciate each other's art works whilst walking around the gallery*	
Introductory activity (25 minutes) *In mix ability groups, ask learners to discuss how they can use different lines to enhance their art works* ***Activity 1 (25 minutes)*** *In mix ability groups assist learners to use internet surf, relevant videos and charts, to research and discuss different types of lines used in drawing/ artworks, their characteristics and line concepts.* ***Activity 2 (25 minutes)*** *Assist learners to present their findings in a group presentation, allow the AP learners to take part in the presentation.* ***Activity 3 (25 minutes)*** *Assist learners to draw different types of lines used in drawing/ artworks using freehand in their sketch pads*	***Introductory activity (25 minutes)*** *Learners in their groups discuss how they can use different types of lines to enhance their artworks* ***Activity 1(30 minutes)*** *In their groups learners use internet surf, relevant videos and charts, to research and discuss different types of lines used in drawing artworks their characteristics and line concepts* ***Activity 2 (25 minutes)*** *Learners present their findings in a group presentation.* ***Activity 3 (25 minutes)*** *Learners draw different types of lines used in drawing/ artworks in their sketch pads*

Assessment DoK aligned to the Curriculum and Subject Teacher Manual

Level 2 assessment

4. Explain the following lines used in drawing/ art works with the aid of sketches.
   i. Horizontal lines
   ii. Zigzag lines
   iii. Diagonal lines

5. Explain the following concepts as they apply in drawing/ arts
   i. Line quality/weight
   ii. Line consistency

Lesson Closure

In completing this part, refer to the Essential Questions to check that learning has taken place.

Activity (15 minutes)

b)

Reflection & Remarks

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

b1. 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 behavior 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 leaners 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

---

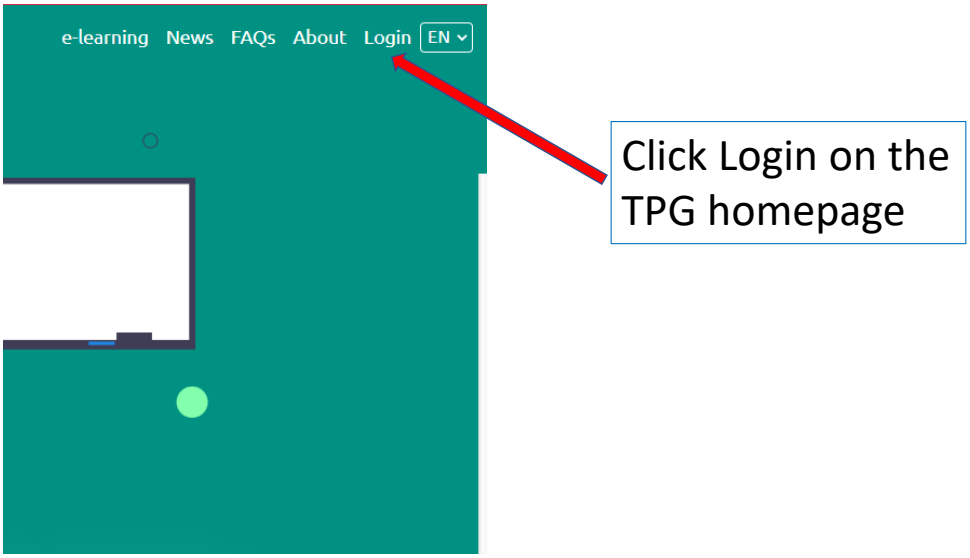
23. Next steps for teacher

---

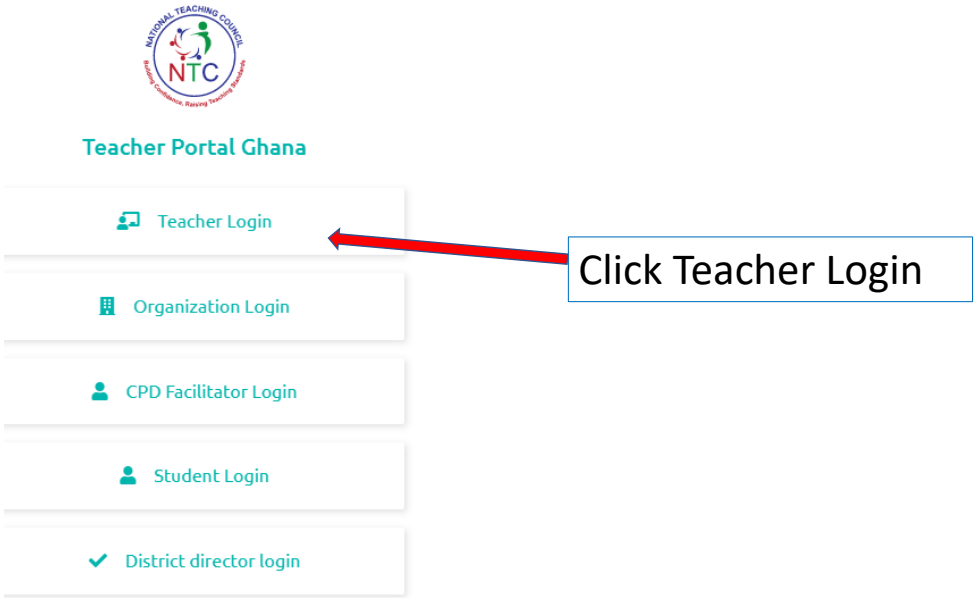
24. Additional Notes (on teacher's actions, the flow of activities, etc.)

HOW TO AWARD CPD POINTS TO DESERVING TEACHERS

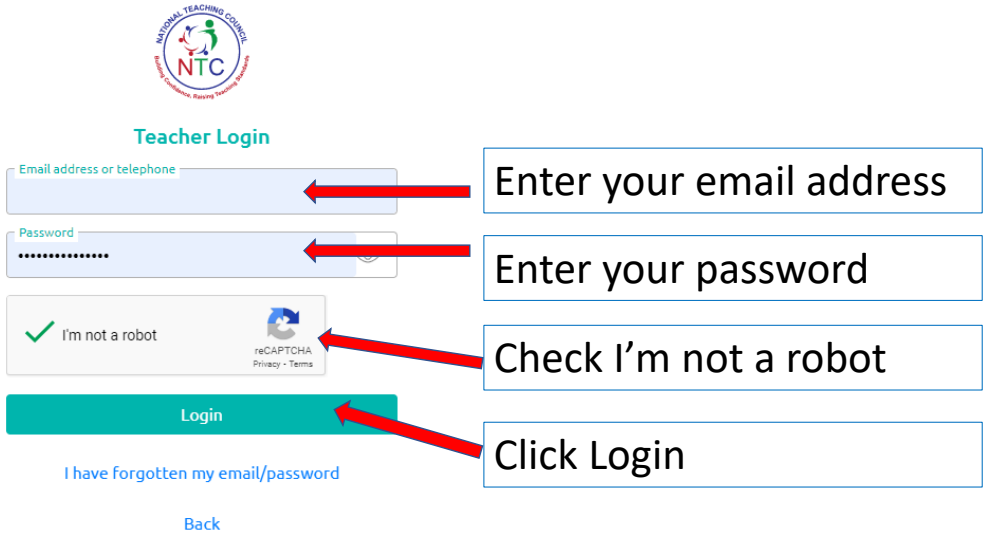
1. Visit *tpg.ntc.gov.gh* and click Login



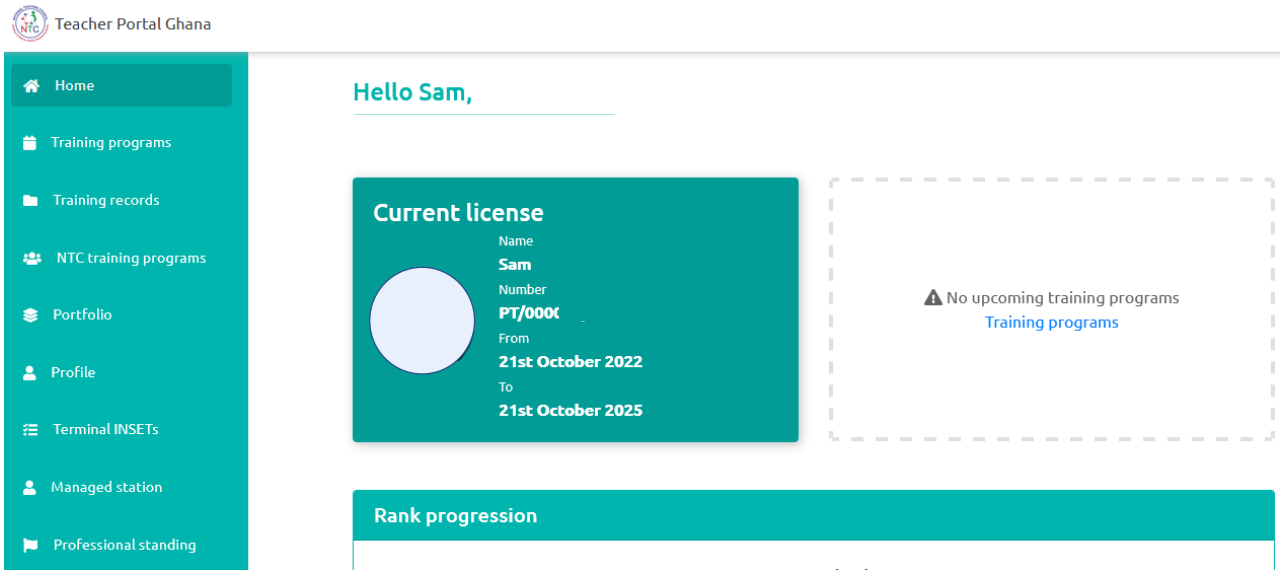
2. On the Login page, click Teacher Login



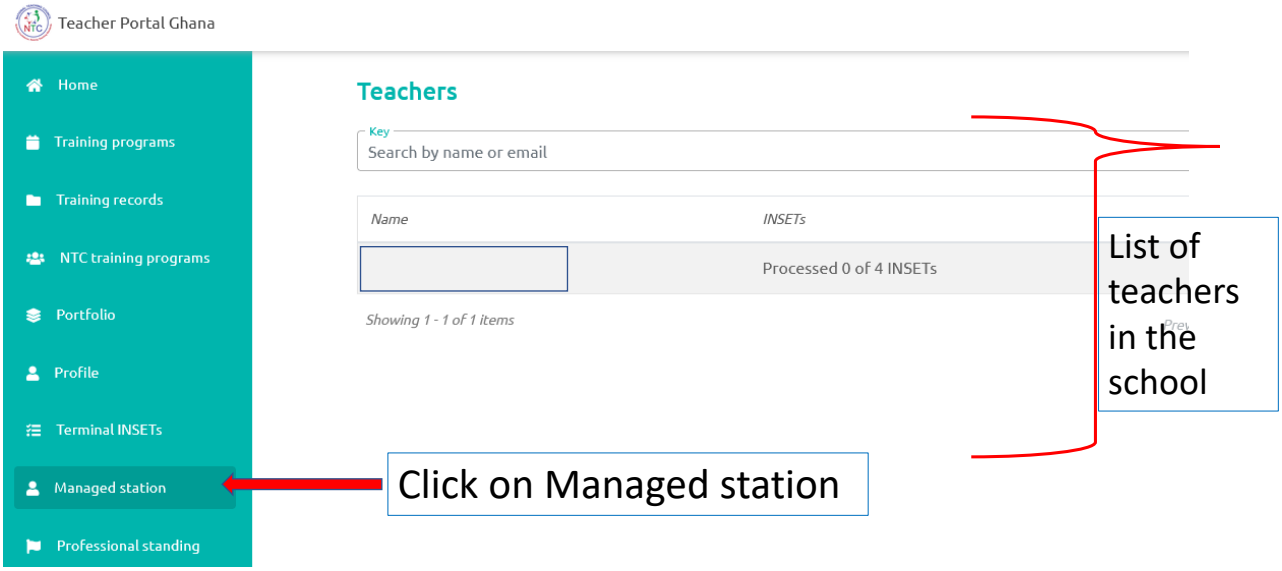
3. On the Teacher Login page enter your email address and password and then click Login



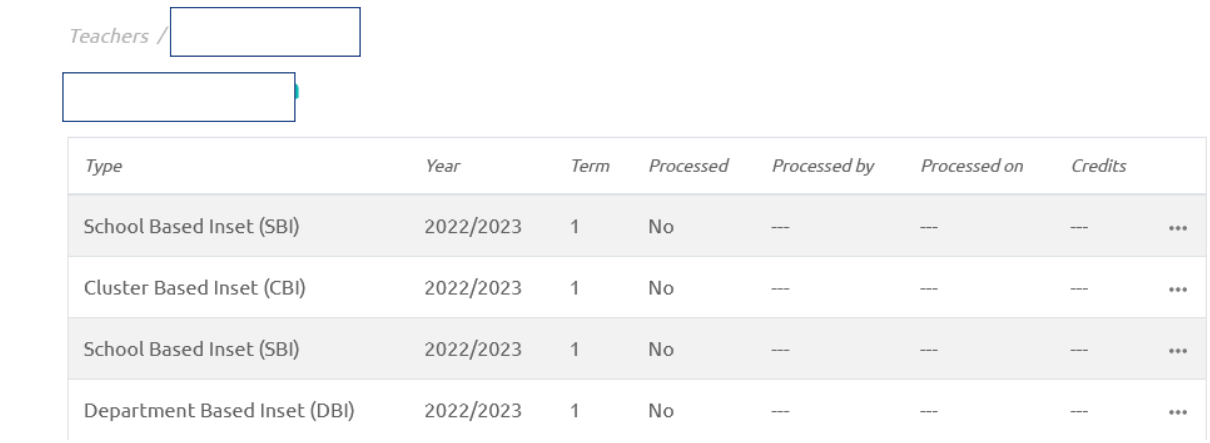
4. After a successful login you will get access to your TPG account (Check image below)



5. To award CPD points, from the side menu tap on Managed station to display list of teachers

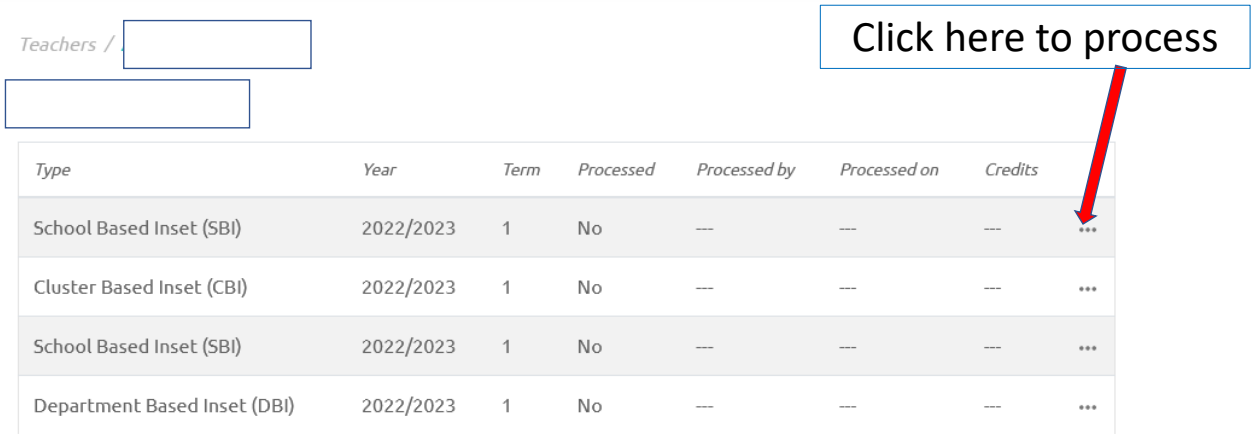


6. Click on the name of the teacher to display the page for awarding CPD points (Check image below)



Type	Year	Term	Processed	Processed by	Processed on	Credits	
School Based Inset (SBI)	2022/2023	1	No	---	---	---	•••
Cluster Based Inset (CBI)	2022/2023	1	No	---	---	---	•••
School Based Inset (SBI)	2022/2023	1	No	---	---	---	•••
Department Based Inset (DBI)	2022/2023	1	No	---	---	---	•••

7. Click on the 3 dots after the Credits column at the extreme right side to process (Check image below)

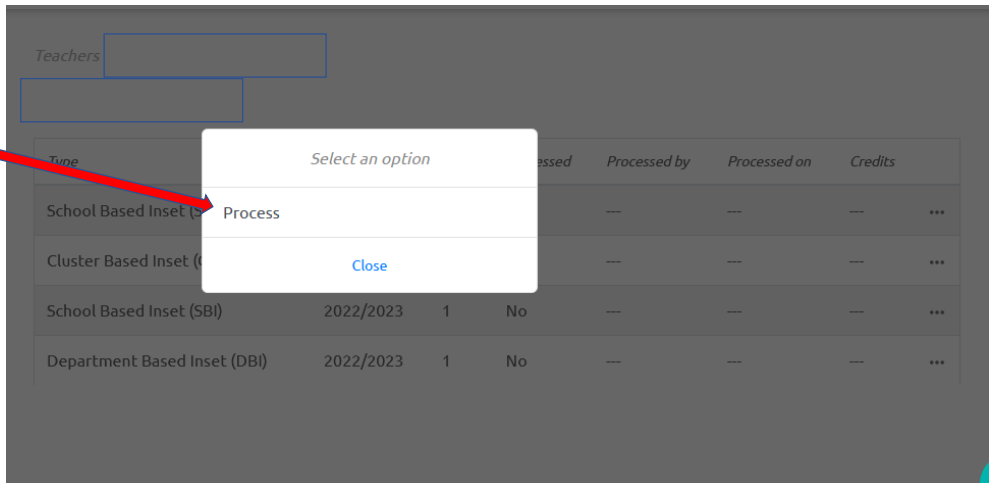


Type	Year	Term	Processed	Processed by	Processed on	Credits	
School Based Inset (SBI)	2022/2023	1	No	---	---	---	•••
Cluster Based Inset (CBI)	2022/2023	1	No	---	---	---	•••
School Based Inset (SBI)	2022/2023	1	No	---	---	---	•••
Department Based Inset (DBI)	2022/2023	1	No	---	---	---	•••

Note: You will repeat same actions for all the INSET/PLC types

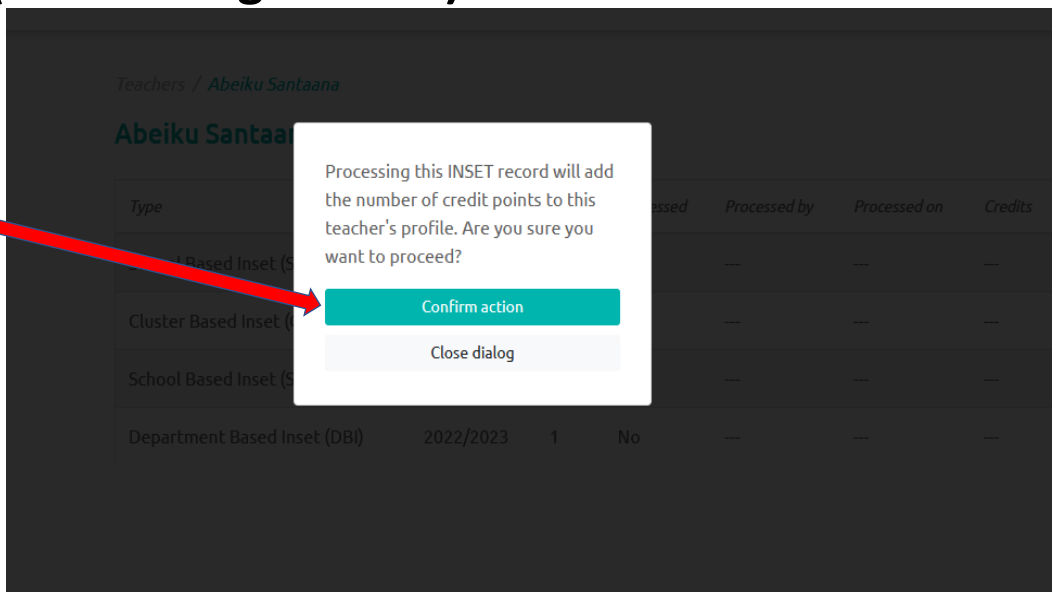
8. On the new page that appears click on Process (Check image below)

Click process

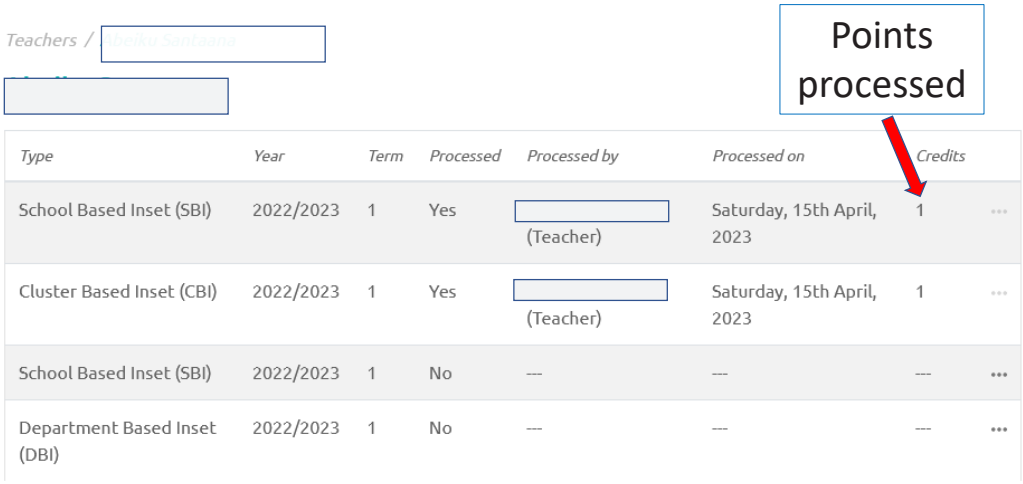


8. On the new page that appears click on Confirm action (Check image below)

Click on Confirm action



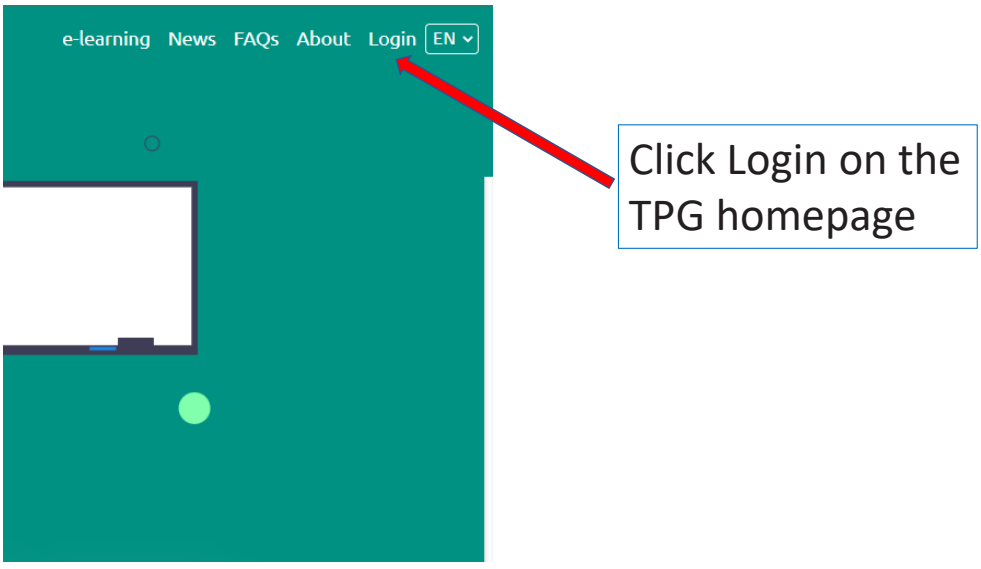
9. The points for the teacher will then be processed (Check image below)



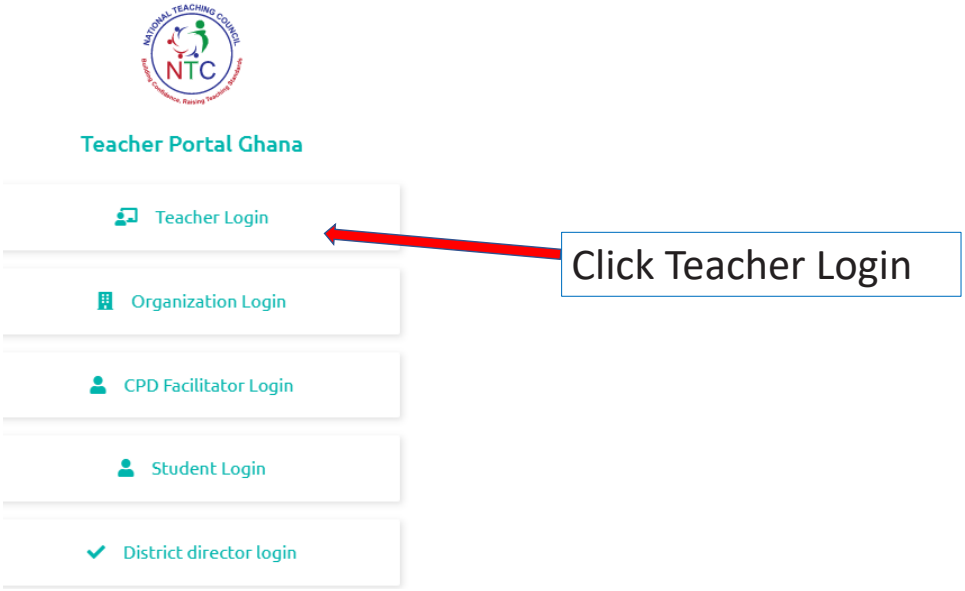
THANK YOU

HOW TO CHECK CPD POINTS AND TRAINING RECORDS ON TEACHER PORTAL GHANA

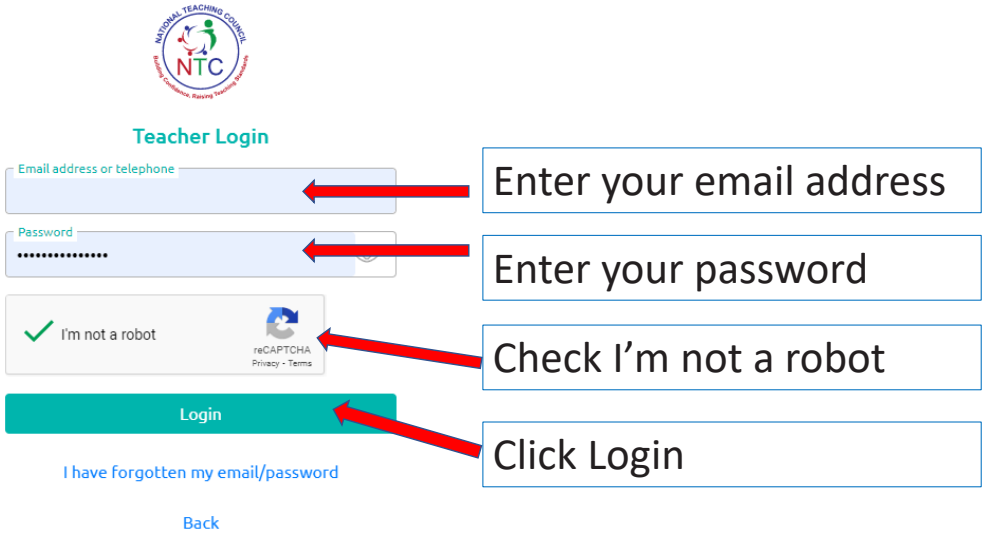
1. Visit *tpg.ntc.gov.gh* and click Login



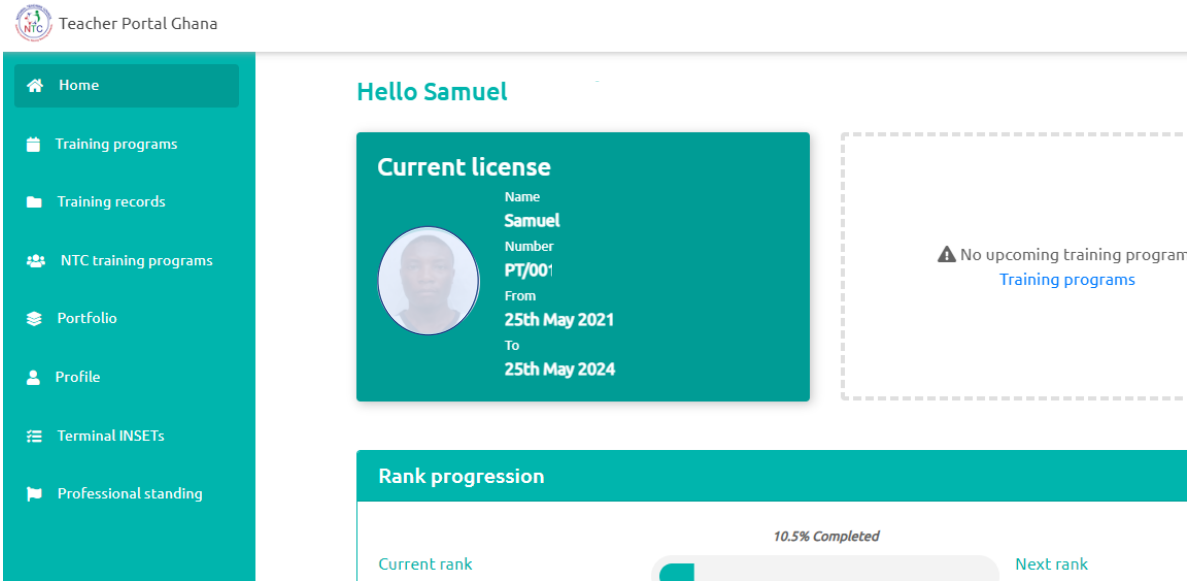
2. On the Login page, click Teacher Login



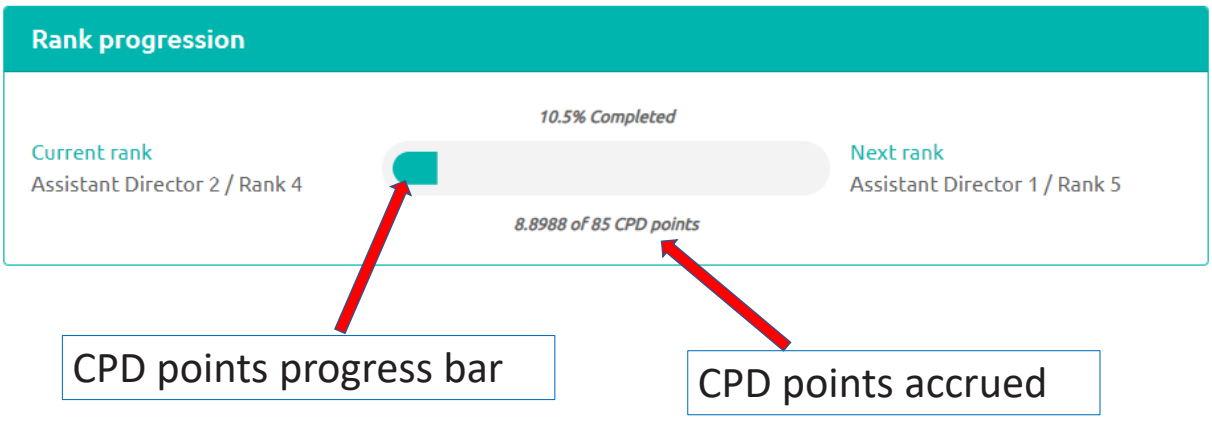
3. On the Teacher Login page enter your email address and password and then click Login



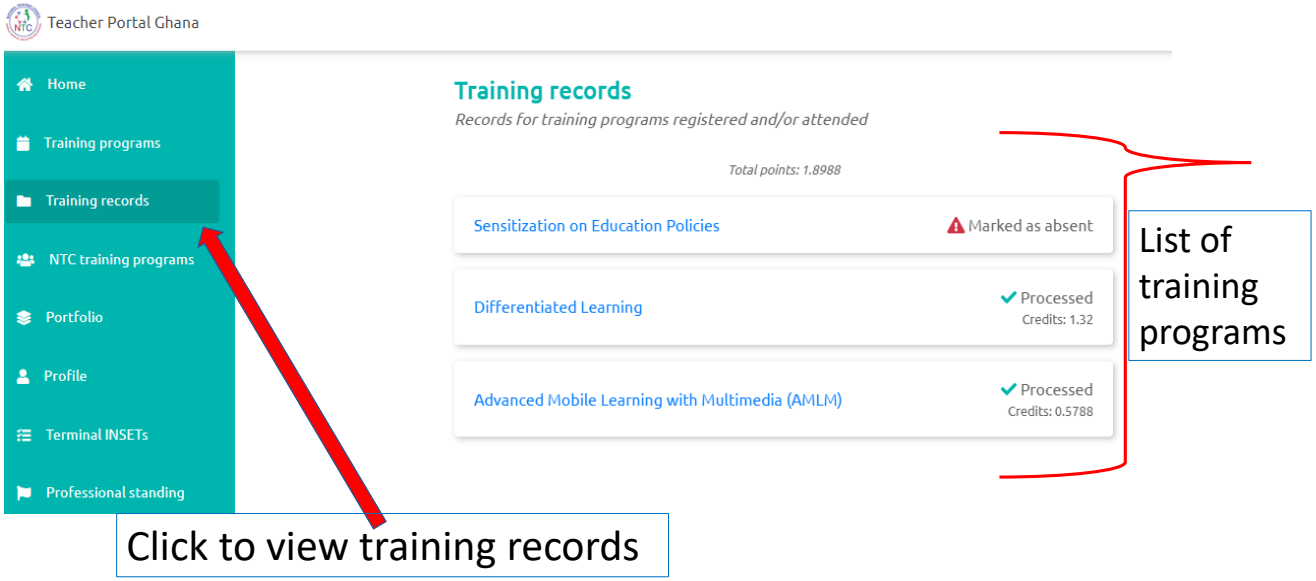
4. After a successful login you will get access to your TPG account (Check image below)



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)



THANK YOU