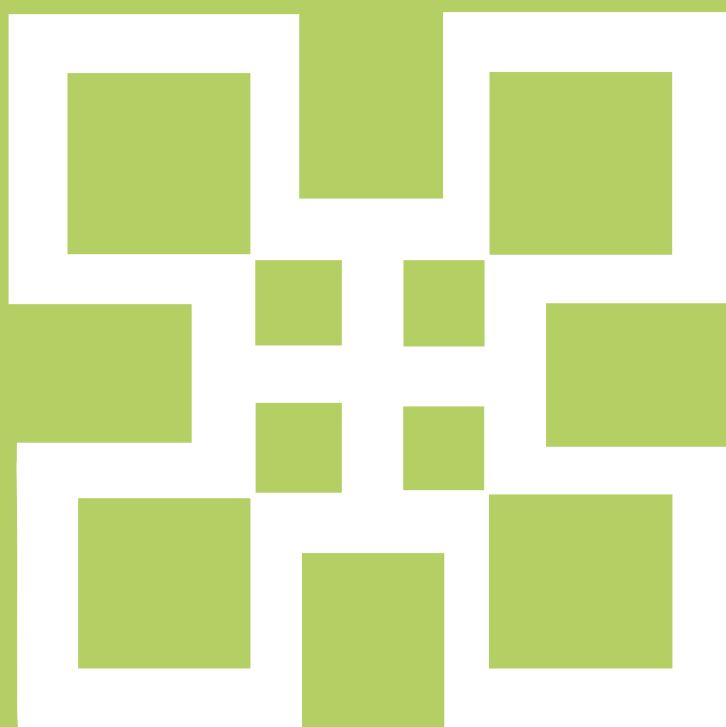


Departmental Professional Learning Community Handbook

AGRICULTURAL SCIENCE

HANDBOOK FOR COORDINATORS



Wisdom, Knowledge
and Prudence



Ghana Education
Service (GES)



NATIONAL COUNCIL FOR
CURRICULUM & ASSESSMENT





GOVERNMENT OF GHANA



mastercard
foundation



Published by the Ministry of Education; Ghana, under Creative Commons Attribution-ShareAlike 4.0 International License.

**DEPARTMENTAL PROFESSIONAL LEARNING
COMMUNITY HANDBOOK**

AGRICULTURAL SCIENCE

Coordinator 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

National Council for Curriculum and Assessment (NaCCA)

ACKNOWLEDGEMENTS

Special thanks to Professor Edward Appiah, Director-General of the National Council for Curriculum and Assessment (NaCCA) and all who contributed to the successful writing of the Departmental Professional Learning Community Handbooks for the new Senior High School (SHS), Senior High Technical School (SHTS) and Science Technology, Engineering and Mathematics (STEM) curriculum.

The writing team was made up of the following members:

NaCCA Team	
Matthew Owusu	Nii Boye Tagoe
Reginald Quartey	Sharon Antwi-Baah
Thomas Kumah Osei	Ayuuba Sullivan Akudago
Godwin Mawunyo Kofi Senanu	Samuel Amankwa Ogyampo
Rebecca Abu Gariba	Samuel Owusu Ansah
Seth Nii Nartey	Julliet Owusu-Ansah
Francis Teye	Alice Kuromah
Kenneth Wontumi	Francis Agbalengyo
Uriah Kofi Otoo	Joachim Seyram
Dennis Adjasi	Abigail Birago Owusu

Subject	Writer	Institution
Mathematics	Dr. Nana Akosua Owusu-Ansah	University of Education Winneba
	Innocent Nunana Duncan	KNUST SHS
	Jemima Saah	Winneba SHS
	Benedicta Ama Yekua Etuafu	Ogyeedom SHS
	Edward Mills Dadson	University of Education Winneba
	Eric Abban	Mt Mary College of Education
Agriculture	Benedicta Foli	
	Williams Kofi Henner	Ogyeedom SHS
	Prof Fredrick Adzitey	University for Development Studies
	Alex Adu Frimpong	Benso SHTS
Applied Technology	Joseph Asomani	AAMUSTED
	Dr. Prosper Mensah	CSIR FORIG, Kumasi
	Philip Turkson	
	Esther Pokuah	Mampong Technical CoE
	Wisdom Dzidzienyo Adzraku	AAMUSTED, Kumasi
	Kunkyuuri Philip	KSHTS, Kumasi
	Isaac Buckman	Arm Forces SHS, Kumasi
	Henry Agmor Mensah	KASS
	Gabriel Boafo	Kwabeng Anglican Senior High Technical School
	Maxwell Eco Adixey	Akatsi College of Education

Languages	Dr. Mohammed Almu Mahaman	University for Development Studies, Tamale
	Ibrahim Osmanu	Mt. Mary College of Education
	Christiana Ampretwum	Ghana Institute of Languages
	Issahaku Al-Hassan	University of Education Winneba, Ajumako
	Blessington Dzah	Ziavi SHTS
	Catherine Ekua Mensah	University of Cape Coast
	Franklina Kabio -Danlebo	University of Ghana
	Mawufemor Kwame Agorgli	Akim Asafo SHS
Art	Dr. Jectey Nyarko Mantey	KNUST
	Seyram Kojo Adipah	GES
	Dr. Emmanuel Obed Acquah	University of Education Winneba
	Stephen Armoo	West Africa SHS
	Dr. Seibu Munkaila	University of Education Winneba
	Dr. Mary Ogum	University of Cape Coast
	Anthonia Afosah Kwaaso	Jukwa Senior High Technical School
	Desmond Ali Gasanga	Regional Education Directorate, GES, Greater Accra
	Kwame Opoku Bonsu	KNUST
	Maud Banini	Tema SHS
Science	Damoah Paul	Prempeh College
	Jo Ann Naa Dei Neequaye	Nyakrom SHTS, Swedru
	Bismark Tunu	Opoku Ware School
	Awumbire Patrick Nsobila	Bolga SHS
	Linus Libak	KNUST
	Sylvester Affram	Kwabeng Anglican SHS
	Frank Appoh	Regional Education Directorate, GES, Greater Accra
	Osei Amankwa Gyampo	Kumasi Wesley SHS
	Comfort Korkor Sam	UDS, Tamale
	Robert Arhin	SDA SHS, Akyem Sekyere
	Paul Michael Cudjoe	Prempeh College
	Victor King Ayanful	Ola College of Education
	Maxwell Bunu	Ada College of Education
English	Angela Aninakwa	West Africa SHS
	Esther Okaitsoe Armah	Mangoase SHS
	Benjamin Orrison Akrono	Islamic Girls' SHS, Suhum
	Kukuua Andoh Robertson	Achimota School
	Prof Charles Owu-Ewie	University of Education Winneba
	Sampson Dedey Baidoo	Benso SHTS

Business Studies	Dr. Emmanuel Caesar Ayamba	Bolgatanga Technical University
	Victoria Nimako	SDA SHS, Akyem Sekyere
	Ansbert Baba Avole	Bolga SHS
General Arts	Anslem Komla Abotsi	University of Education Winneba
	Peter Anti Partey	University of Cape Coast
	Charlotte Kpogli	Ho Technical University
	Benjamin Agyekum	Mangoase SHS
	Raymond Nsiah Asare	Methodist Girls' SHS
	Prince Essiaw	Enchi College of Education
	Dr. John Kusimi	University of Ghana
	Suzy Adwoa Appiah	Tamale SHS
	Dorcas Wab-Lumor	Labone SHS
	Nicholas Quarcoo	Kaneshie SHTS
	Abdul Razak Bawa Aransa	Uthmaniya SHS, Kumasi
	Dr. Richardson Addai-Mununkum	University for Education Winneba
	Clement Nsorwineh Atigah	Tamale SHS
	Prof Awaisu Braimah	University for Education Winneba
	Samuel Kofi Adu	Abeadze State College
	Getrude A. T. Omane	Krobo Girls' SHS
	Dr. Kwaku Addo-Kissiedu	University for Development Studies
Home Economics	Grace Annagmeng Mwini	Tumu College of Education
	Love Boateng	Juaso SHS
	Jusinta Kwakyewaa (Rev. Sr.)	St Francis SHTS
STEM	Dr. Griffth Selorm Klogo	KNUST
	Daniel Agbogbo	Kwabeng Anglican SHS
	Dr. Dorothy Yakoba Agyapong	KNUST
	Dr. Eric Worlawoe Gaba	Br. Tarcisius Prothetics & Orthotics Training College
	Sam Ferdinand	Afia Kobi SHS
	Dr. David Oppong	KNUST
	Benjamin A. Asaaga	KNUST
	Kofi Owura Amoabeng	KNUST
	Dr. Eliel Keelson	KNUST
	Isaac Nzoley	Wesley Girls' SHS
	Valentina Osei Himah	Atebubu College of Education
	Opoku Joel Mintah	Altair Unmanned Technologies
	Jennifer Fafa Adzraku	Université Libre des Bruxelles (ULB)

Assessment	Dr. Ruth Annan-Brew	University of Cape Coast
	Sundeme Benjamin	St. Ambrose College of Education
GES HQ	Faustina Graham	
	Naomi Agbeko	

T-TEL TEAM	
Professor Jonathan Fletcher	Key Advisor, Teaching & Learning Partnerships
Akwasi Addae-Boahene	Chief Technical Advisor
Professor Eric Anane	Key Advisor, Assessment
Patty E. Assan	GES Liaison Advisor
Alberta Djaaba Tackie	Curriculum Implementation, Teaching and Learning Coordinator
Beryl Opong-Agyei	National Secondary Education Coordinator
Wilhemina Appiah Gyamfi	Secondary Education Quality Assurance & Assessment Coordinator
Mabel Vivey	Communications & ICT Coordinator
Tinyep Mobya	Communications, Youth Engagement & Inclusivity Coordinator
Peter Jayom Chammik	Regional Education Team Lead
Issahaku Abudulai	Regional Education Team Lead
James Adefrah	Regional Education Team Lead
Juliana Dinko	Regional Education Advisor
Nhyiraba Quartson	Curriculum Support Assistant
Joshua Amanor	Regional Support Assistant
Roger Kwamina Aikins	General Manager- Commercial & Human Resource

CONTENTS

[illegible]

DPLC Session 1: Reviewing knowledge and skills acquired in previous PLC Sessions

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on leading the session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1. Introduce the session with an icebreaker. 1.2 Ask teachers to share their expectations regarding what they hope to gain from the Departmental Professional Learning Community (DPLC) activities (NTS 1a, 1b). <i>E.g.</i> <i>a) To be able to inculcate the national teachers' standards in the planning and teaching of lessons</i> <i>b) To use the SHS/SHTS/STEM curriculum, teacher manuals and learning planner to effectively plan and teach lessons</i> <i>c) To plan lessons that utilise appropriate teaching and learning resources, pedagogical and assessment strategies, and other cross-cutting issues for effective teaching and learning, etc.</i> 1.3 Ask a teacher to read the purpose of the DPLC 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). <i>E.g.</i> <i>To be able to inculcate the national teachers' standards in the planning and teaching of lessons, etc.</i> 1.3 Read the purpose of the DPLC Handbook.	20mins

	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 School (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: • Build on Session 12 of 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. • 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. • Provide opportunities for teachers to discuss the year one learning plans and align them with the year one teacher manuals.	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 School (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: • Build on Session 12 of 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. • 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. • Provide opportunities for teachers to discuss the year one learning plans and align them with the year one teacher manuals.	
--	---	---	--

	• 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 Agricultural Science 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 Agricultural Science 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. Developing learning plans for weeks 1&2 3. Developing learning plans for weeks 3&4 4. Developing learning plans for weeks 5&6	• 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 Agricultural Science 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 Agricultural Science 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. Developing learning plans for weeks 1&2 3. Developing learning plans for weeks 3&4 4. Developing learning plans for weeks 5&6	
--	---	---	--

	5. Developing learning plans for weeks 7&8 6. Developing learning plans for weeks 9&10 7. Developing learning plans for weeks 11&12 8. Developing learning plans for weeks 13&14 9. Developing learning plans for weeks 15&16 10. Developing learning plans for weeks 17&18 11. Developing learning plans for weeks 19&20 12. Developing learning plans for weeks 21&22 13. Developing learning plans for weeks 23&24	5. Developing learning plans for weeks 7&8 6. Developing learning plans for weeks 9&10 7. Developing learning plans for weeks 11&12 8. Developing learning plans for weeks 13&14 9. Developing learning plans for weeks 15&16 10. Developing learning plans for weeks 17&18 11. Developing learning plans for weeks 19&20 12. Developing learning plans for weeks 21&22 13. Developing learning plans for weeks 23&24	
2. Planning for teaching, learning and assessment activities, promoting character values, GESI, SEL, ICT, 21st century skills and differentiation	2.1 Ask another teacher to read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of the session is to assist Agricultural Science teachers to review the knowledge, skills and competencies they have acquired through participation in previous PLC sessions to enable them to consolidate their knowledge and understanding of the resources, pedagogical and assessment strategies they have applied in their lessons taking into consideration GESI, ICT, 21st Century skills, Differentiation, National values and other cross-cutting issues for quality teaching and learning. LO 1: Apply the knowledge, skills and experience gained	2.1 Read the Purpose, Learning Outcomes (LOs) and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of the session is to assist Agricultural Science teachers to review the knowledge, skills and competencies they have acquired through participation in previous PLC sessions to enable them to consolidate their knowledge and understanding of the resources, pedagogical and assessment strategies they have applied in their lessons taking into consideration GESI, ICT, 21st Century skills, Differentiation, National values and other cross-cutting issues for quality teaching and learning. LO 1: Apply the knowledge, skills and experience gained	30mins

	from previous PLC sessions to effectively develop lessons that integrate GESI, SEL, 21st century skills and competencies, differentiation, national values and other cross-cutting issues for quality teaching and learning (NTS 2b, 2c and 3a-3o). LI 1: Explain at least three concepts used in the previous PLC sessions that are employed in teaching and learning. LI 2: Scrutinise a minimum of two pedagogical and two assessment strategies acquired from the previous PLC sessions that are applied in teaching and learning. LI 3: Deliberate on at least three teaching and learning resources used in the previous PLC sessions and employed in teaching and learning. LI 4: Explain at least two ways in which the knowledge and skills gained in GESI, SEL, ICT, 21st century skills and competencies, differentiation and other cross-cutting issues from the previous PLC sessions can be applied in lesson planning and delivery. 2.2 Ask teachers in their groups to discuss at least three concepts they learned in previous PLC sessions that impacts teaching and learning positively (NTS 2a, 2b).	from previous PLC sessions to effectively develop lessons that integrate GESI, SEL, 21st century skills and competencies, differentiation, national values and other cross-cutting issues for quality teaching and learning (NTS 2b, 2c and 3a-3o). LI 1: Explain at least three concepts used in the previous PLC sessions that are employed in teaching and learning. LI 2: Scrutinise a minimum of two pedagogical and two assessment strategies acquired from the previous PLC sessions that are applied in teaching and learning. LI 3: Deliberate on at least three teaching and learning resources used in the previous PLC sessions and employed in teaching and learning. LI 4: Explain at least two ways in which the knowledge and skills gained in GESI, SEL, ICT, 21st century skills and competencies, differentiation and other cross-cutting issues from the previous PLC sessions can be applied in lesson planning and delivery. 2.2 Discuss in groups at least three concepts learned in previous PLC sessions that impacts teaching and learning positively (NTS 2a, 2b).	
--	---	---	--

	<i>E.g.</i> a) <i>Pedagogical strategies</i> b) <i>Differentiation</i> c) <i>Assessment strategies</i> d) <i>SEL, GESI, etc.</i> 2.3 Ask teachers in mixed-gender groups to brainstorm write and share how they applied the concepts in 2.2 to achieve positive learning outcomes (NTS 1a). <i>E.g.</i> a) <i>By engaging students</i> b) <i>By giving individuals the opportunity to express themselves</i> c) <i>By encouraging students to respect one another's view</i> d) <i>By using gender responsive languages and ICT tools, etc.</i> 2.4 Ask teachers in groups to discuss at least two pedagogical and two assessment strategies acquired from previous PLC sessions that they applied in the planning and teaching of lessons which impacted positively on learning (NTS 2a-2c). <i>E.g.</i> a) <i>Pedagogical strategies</i> i. <i>Problem-based learning: To use real-world issues in resolving problems by encouraging learners to develop their problem-solving skills and learn concepts instead of just absorbing facts. Example is</i>	<i>E.g.</i> <i>Pedagogical strategies, etc.</i> 2.3 Brainstorm, write and share how you applied the concepts in 2.2 to achieve positive learning outcomes (NTS 1a). <i>E.g.</i> <i>By engaging students, etc.</i> 2.4 Discuss at least two pedagogical and two assessment strategies acquired from previous PLC sessions that you applied in the planning and teaching of lessons which impacted positively on learning (NTS 2a-2c). <i>E.g.</i> a) <i>Pedagogical strategies</i> <i>Problem-based learning: To use real-world issues in resolving problems by encouraging learners to develop their problem-solving skills and learn concepts instead of just absorbing facts. Example is</i>	
--	---	---	--

	<i>asking learners to pitch ideas and create their own business plans to solve a societal need</i> <i>ii. Experiential learning: To learn by doing; by engaging learners in hands-on experiences and reflection such as laboratory experiments, internships and field exercises</i> <i>iii. Inquiry-based learning: Teaches learners to prioritise problems that require critical and creative thinking to enable them to develop their abilities to ask questions, design investigations, interpret evidence, form explanations and arguments, and communicate findings, etc.</i> <i>b) Assessment strategies</i> <i>i. Giving project works (group/individual)</i> <i>ii. Asking students to prepare portfolios</i> <i>iii. Guided and open essays, interviews and questionnaire, etc.</i> 2.5 Ask teachers to discuss with their paired peers and share with the larger group at least two pedagogical and two assessment strategies they acquired from previous PLC sessions and how they employed these in their planning and teaching to	<i>asking learners to pitch ideas and create their own business plans to solve a societal need, etc.</i> <i>b) Assessment strategies</i> <i>Giving project works (group/individual), etc.</i> 2.5. Discuss with your paired peers and share with the larger group at least two pedagogical and two assessment strategies acquired from previous PLC sessions and how you employed these in their planning and teaching to	
--	--	--	--

	achieve desired learning outcomes (NTS 1a, 2c, 2e, 3a - 3g and 3j). <i>E.g.</i> <i>a) Pedagogical strategies</i> <i>i. Through evenly distribution of questions to all learners and respecting their responses</i> <i>ii. By giving learners assignments to search for information to solve specific societal problem related to Agriculture</i> <i>iii. By showing videos/pictures on some activities and field trips, etc.</i> <i>b) Assessment strategies</i> <i>i. Oral responses to questions</i> <i>ii. Written responses to questions</i> <i>iii. Group, individual, field and laboratory practical work, etc.</i> 2.6 Ask teachers in pairs to talk about at least three teaching and learning resources used in the previous PLC sessions that impacted positively on teaching and learning (NTS 1a, 1b, 2a-2f and 3a-3m). <i>E.g.</i> <i>a) Videos/Picture on Agricultural farms and Industries</i> <i>b) Functional internet connectivity</i>	achieve desired learning outcomes (NTS 1a, 2c, 2e, 3a - 3g and 3j). <i>E.g.</i> <i>a) Pedagogical strategies</i> <i>Through evenly distribution of questions to all learners and respecting their responses, etc.</i> <i>b) Assessment strategies</i> <i>Oral responses to questions, etc.</i> 2.6 In pairs, talk about at least three teaching and learning resources used in the previous PLC sessions that impacted positively on teaching and learning (NTS 1a, 1b, 2a-2f and 3a-3m). <i>E.g.</i> <i>Videos/Picture on Agricultural farms and Industries, etc.</i>	
--	--	---	--

	<i>c) Computer and projector</i> <i>d) Realia and resource personnel, etc.</i> 2.7 Ask teachers to share with the larger group how they applied the teaching and learning resources from previous PLC sessions and how that impacted positively on teaching and learning (NTS 1a). <i>E.g.</i> <i>a) Showing videos and pictures on the subject matter in class</i> <i>b) Inviting resource persons to give talks on relevant topics</i> <i>c) Using master craftsmen and laboratory technicians for practicals</i> <i>d) Embarking on field trips to relevant farms and industries, etc.</i> 2.8 Ask teachers to explain at least two ways in which they applied the knowledge and skills acquired in GESI, SEL, ICT, 21st century skills and competencies, differentiation and other cross-cutting issues in their lesson delivery (NTS 2c, 2e, 2f, 3a, 3c and 3f-3j). <i>E.g.</i> <i>a) GESI</i> <i>i. Working in pairs, mixed-gender and mixed-ability groups</i> <i>ii. Assigning specific roles and tasks to learners with SEN</i>	2.7 Share with the larger group how you applied the teaching and learning resources from previous PLC sessions and how that impacted positively on teaching and learning (NTS 1a). <i>E.g.</i> <i>Showing videos and pictures on the subject matter in class, etc.</i> 2.8 Explain at least two ways in which you applied the knowledge and skills acquired in GESI, SEL, ICT, 21st century skills and competencies, differentiation and other cross-cutting issues in your lesson delivery (NTS 2c, 2e, 2f, 3a, 3c and 3f-3j). <i>E.g.</i> <i>a) GESI</i> <i>i. Working in pairs, mixed-gender and mixed-ability groups, etc.</i>	
--	--	--	--

	iii. <i>Encouraging learners who are introverts to lead presentations, demonstration/practical activities, etc.</i> b) <i>SEL</i> i. <i>Attending to the needs and supporting individual learners without better understanding of the concepts taught</i> ii. <i>Employing self-appraisal activities to promote self-awareness and build learners' confidence</i> iii. <i>Using positive feedback to encourage learners to willingly participate, express their views and respect others' views within their groups, etc.</i> c) <i>ICT</i> i. <i>Using computer, smart phones and projector for presentations</i> ii. <i>Giving learners project to research online for information and present in PowerPoint</i> iii. <i>Watching YouTube/pre-recorded videos, and podcast with questions, etc.</i> d) <i>21st century skills and competencies</i> i. <i>Using group work to help learners develop</i>	b) <i>SEL</i> <i>Attending to the needs and supporting individual learners without better understanding of the concepts taught, etc.</i> c) <i>ICT</i> <i>Using computer, smart phones and projector for presentations, etc.</i> d) <i>21st century skills and competencies</i> <i>Using group work to help learners develop</i>	
--	--	---	--

	<i>communication and collaboration skills</i> <i>ii. Assigning specific roles to individuals to promote personal development and leadership skills</i> <i>iii. Engaging learners to analyse real life situations to critically think and solve problems affecting individuals, families and society, etc.</i> <i>e) Differentiation</i> <i>i. Creating opportunity for learners to use different presentations mode such as; oral presentations, role-play, audio and video productions in lesson delivery and assessment</i> <i>ii. Using varied teaching and learning resources to meet the learning needs of all learners</i> <i>iii. Providing varied pedagogical and assessment tasks of different levels of difficulty to meet the learning needs of all learners at all levels, etc.</i> 2.9 Ask teachers in pairs to discuss and share with the larger group a minimum of three differences they observed between the old lesson plan and the new learning planner that was introduced in Session 12 of the	<i>communication and collaboration skills, etc.</i> <i>e) Differentiation:</i> <i>Creating opportunity for learners to use different presentations mode such as; oral presentations, role-play, audio and video productions in lesson delivery and assessment, etc.</i> 2.9 In pairs, discuss and share with the larger group a minimum of three differences you observed between the old lesson plan and the new learning planner that was introduced in Session 12 of the PLC	
--	---	--	--

	PLC Handbook on <i>“Introduction to the SHS, SHTS and STEM Curriculum”</i> (NTS 2b). <i>E.g.</i> a) <i>Essential questions</i> b) <i>Differentiation</i> c) <i>Cross-cutting issues (GESI, SEL, 21st century skills and competencies, ICT, national values), etc</i>	Handbook on <i>“Introduction to the SHS, SHTS, and STEM Curriculum”</i> (NTS 2b). <i>E.g.</i> <i>Essential questions, etc.</i>	
3. Modelling a teaching activity, promoting character values, GESI, SEL, ICT, 21st century skills and differentiation	3.1 Ask a teacher to model a teaching activity in the sample learning plan integrating national values, GESI, SEL, ICT, 21st century skills and competencies, and differentiation for feedback from their colleagues (NTS 1a, 2b, 2c, 2e, 2f and 3a-3o). 3.2 Ask teachers to reflect and provide feedback on the modelled activity (NTS 1a, 1b and 3b).	3.1 Model a teaching activity in the sample learning plan integrating national values, GESI, SEL, ICT, 21st century skills and competencies, and differentiation for feedback from their colleagues (NTS 1a, 2b, 2c, 2e, 2f and 3a-3o). 3.2 Reflect and provide feedback on the modelled activity (NTS 1a, 1b and 3b).	30mins

4. Evaluation and review of the session: Noting that teachers need to identify critical friends to observe lessons and report at the next session	4.1 Ask teachers in groups to ponder over, pen down and share what they have learned from the session, their impression and how they feel, with the larger group (NTS 1a, 1b). 4.2 Remind teachers to, where possible, identify a critical friend to observe their lesson in relation to DPLC Session 1 and provide feedback to them (NTS 1a, 1e and 3l). 4.3 Remind teachers to read DPLC Session 2 and bring along their teacher's manual and the PLC Handbook on <i>introduction to SHS/ SHTS/ STEM Curriculum</i> in preparation for the next session (NTS 1a).	4.1 In groups, ponder over, pen down and share what you have learned from the session, your impression and how you feel, with the larger group (NTS 1a, 1b). 4.2 Where possible, identify a critical friend to observe your lesson in relation to DPLC Session 1 and provide feedback to you (NTS 1a, 1e and 3l). 4.3 Read DPLC Session 2 and bring along the teacher's manual and the PLC Handbook on <i>introduction to SHS/ SHTS/ STEM Curriculum</i> in preparation for the next session (NTS 1a).	10mins
---	--	---	---------------

DPLC Session 2: Developing learning plans for Weeks 1 and 2			
<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 1, <i>reviewing concepts and skills acquired in previous PLC sessions</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 1, <i>reviewing concepts and skills acquired in previous PLC sessions</i>, supported learning (NTS 1b).	1.1 Share two things you implemented based on DPLC Session 1, <i>reviewing concepts and skills acquired in previous PLC sessions</i>, 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 learned in DPLC Session 1, <i>reviewing concepts and skills acquired in previous PLC sessions</i>, supported learning (NTS 1b).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 1 and 2. Agricultural Science teachers will focus on learning plans for the following lessons:	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 assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 1 and 2. Agricultural Science teachers will focus on learning plans for the following lessons:	60mins

completed per session)	<i>a) Agriculture (Week 1)</i> <i>i. Meaning and importance of agriculture to society</i> <i>ii. Major branches of agriculture and their descriptions</i> <i>iii. Misconceptions in agriculture and how to dispel them</i> <i>b) Agriculture (Week 2)</i> <i>i. Meaning and importance of agricultural education</i> <i>ii. Types of agricultural education</i> <i>c) Agricultural Science (Week 1)</i> <i>i. Meaning and importance of agriculture</i> <i>ii. Misconceptions about agriculture and farming in Ghana and how to address them</i> <i>d) Agricultural Science (Week 2)</i> <i>i. Identification and the uses or functions of some common farm tools and equipment for crop production</i> <i>ii. Classification of farm equipment, implements and machines</i> LO 1: Develop/review subject-specific learning plans for teaching Weeks 1 and 2 lessons using the teacher manual, taking into account GESI, ICT, SEL,	<i>a) Agriculture (Week 1)</i> <i>i. Meaning and importance of agriculture to society</i> <i>ii. Major branches of agriculture and their descriptions</i> <i>iii. Misconceptions in agriculture and how to dispel them</i> <i>b) Agriculture (Week 2)</i> <i>i. Meaning and importance of agricultural education</i> <i>ii. Types of agricultural education</i> <i>c) Agricultural Science (Week 1)</i> <i>i. Meaning and importance of agriculture</i> <i>ii. Misconceptions about agriculture and farming in Ghana and how to address them</i> <i>d) Agricultural Science (Week 2)</i> <i>i. Identification and the uses or functions of some common farm tools and equipment for crop production</i> <i>ii. Classification of farm equipment, implements and machines</i> LO 1: Develop/review subject-specific learning plans for teaching Weeks 1 and 2 lessons using the teacher manual, taking into account GESI, ICT, SEL,	
--------------------------------------	--	--	--

	National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 1 and 2 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner template for Week 2 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 1 and 2 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 1 and 2 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a	National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 1 and 2 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner template for Week 2 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 1 and 2 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 1 and 2 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a	
--	--	--	--

	peer reviewer to the learning plans for Weeks 1 and 2 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 1 and 2. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 1 and 2 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 1)</i> <i>i. How will the knowledge gained on the importance of agriculture entice individuals to choose agriculture as their future career?</i> <i>ii. What connections can be made between the branches and sectors of agriculture to improve the worth of agriculture?</i> <i>iii. How will the understanding of the misconceptions in agriculture help to boost agriculture production? etc.</i>	peer reviewer to the learning plans for Weeks 1 and 2 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Refer to your teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 1 and 2. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities for Weeks 1 and 2 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 1)</i> <i>How will the knowledge gained on the importance of agriculture entice individuals to choose agriculture as their future career? etc.</i>	
--	--	---	--

	<i>b) Agriculture (Week 2)</i> <i>i. What appropriate resources can be used for effective teaching and learning of agriculture education?</i> <i>ii. How will the understanding of agricultural education help learners in the furtherance of their education and their career choices?</i> <i>iii. What connections can be made among the types of agriculture education to improve the value of agriculture? etc.</i> <i>c) Agricultural Science (Week 1)</i> <i>i. How will the knowledge gained on the meaning and importance of agriculture attract individuals to go into agriculture production?</i> <i>ii. What appropriate resources can be used for effective teaching and learning of the misconceptions in agriculture?</i> <i>iii. What connections can be made between the misconceptions in agriculture and wealth creation to dispel the misconceptions</i>	<i>b) Agriculture (Week 2)</i> <i>What appropriate resources can be used for effective teaching and learning of agriculture education? etc.</i> <i>c) Agricultural Science (Week 1)</i> <i>How will the knowledge gained on the meaning and importance of agriculture attract individuals to go into agriculture production? etc.</i>	
--	---	---	--

	<i>associated with agriculture? etc.</i> <i>d) Agricultural Science (Week 2)</i> <i>i. What appropriate resources can be used in the teaching and learning of the functions of the parts and uses of agricultural tools and implements used in crop production?</i> <i>ii. How will the knowledge gained by an individual on the uses of agricultural tools and implements help them to make right decisions on planting, weed control and harvesting method to boost crop production?</i> <i>iii. What connections can be made between the classification and operation of different types of machinery used in land preparation and crop production to help in choosing equipment for specific tasks? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical</i>	<i>d) Agricultural Science (Week 2)</i> <i>What appropriate resources can be used in the teaching and learning of the functions of the parts and uses of agricultural tools and implements used in crop production? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical</i>	
--	---	--	--

	<i>exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 1)</i> <i>Theme/Focal Area 1</i> <i>i. Learning Tasks</i> • <i>Brainstorm the meaning of agriculture and agricultural science</i> • <i>Make a list of the importance of agriculture</i> • <i>Make a presentation on how agriculture will impact your life and society? etc.</i> <i>ii. Pedagogical Exemplars</i> • <i>Initiating talk for learning: Teacher puts learners in mixed-ability groups to brainstorm and come up with the meaning of agriculture and agricultural science as well as the importance of agriculture. Learners share their ideas with the whole class. Teacher should assist learners with difficulties with leading questions that will help them to come up with the difference between agriculture and agricultural science, and the importance of agriculture. Learners who can give further details should be encouraged to do so</i> • <i>Structuring talk for learning: In their mixed ability groups, learners</i>	<i>exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 1)</i> <i>Theme/Focal Area 1</i> <i>i. Learning Tasks</i> <i>Brainstorm the meaning of agriculture and agricultural science, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: Teacher puts learners in mixed-ability groups to brainstorm and come up with the meaning of agriculture and agricultural science as well as the importance of agriculture. Learners share their ideas with the whole class. Teacher should assist learners with difficulties with leading questions that will help them to come up with the difference between agriculture and agricultural science, and the importance of agriculture. Learners who can give further details should be encouraged to do so, etc.</i>	
--	--	---	--

	<i>make a presentation on how agriculture will impact their life and society in a plenary session. The teacher should ensure that all learners take part in gathering information for the presentation and assign roles equitably to learners in the groups, etc.</i> <i>iii. Key Assessments</i> • <i>Level 1: List three (3) reasons why agriculture is important to society</i> • <i>Level 2: Explain the meaning of the agriculture and agricultural science</i> • <i>Level 3: Analyse at least two (2) reasons why agriculture should be studied in Ghana as a developing country</i> • <i>Level 4: How can agriculture be used to solve the youth unemployment situation in Ghana to boost the Ghanaian economy? etc.</i> <i>Note: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 1)</i> <i>b) Agriculture (Week 2)</i> <i>Focal area/Theme 1</i> <i>i. Learning Tasks</i> • <i>Identify institutions in Ghana that offer agricultural education</i> • <i>Surf the internet for the meaning and importance of agricultural education</i> • <i>Examine how agricultural education can help shape</i>	<i>iii. Key Assessments</i> <i>Level 1: List three (3) reasons why agriculture is important to society, etc.</i> <i>b) Agriculture (Week 2)</i> <i>Focal area/Theme 1</i> <i>i. Learning Tasks</i> <i>Identify institutions in Ghana that offer agricultural education, etc.</i>	
--	--	---	--

	<i>agricultural development in Ghana, etc.</i> <i>ii. Pedagogical Exemplars</i> • <i>Think-pair-share: Learners individually think about the meaning of agricultural education and share it with his/her peers. Teacher should ensure that learners with difficulty are assisted with leading questions to come up with the definition of agricultural education</i> • <i>Problem-based learning: In mixed-gender/gender groups (where applicable), learners surf the internet to come up with the importance of agricultural education and make a presentation in class. The teacher should help learners with suitable website links, that they can access the information needed for the presentation. The teacher should monitor learners not to veer into unapproved sites</i> • <i>A resource person makes a presentation on the entry requirements for pursuing agriculture and related courses, as well as specialisations at higher educational institutions to all learners. Learners listen to the resource person and ask questions for clarification, etc.</i>	<i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners individually think about the meaning of agricultural education and share it with his/her peers. Teacher should ensure that learners with difficulty are assisted with leading questions to come up with the definition of agricultural education, etc.</i>	
--	---	---	--

	<i>iii. Key Assessments</i> • <i>Level 1: Identify two (2) institutions that offer agricultural education in Ghana and indicate their location</i> • <i>Level 2: What is agricultural education?</i> • <i>Level 3: To what extent is agricultural education beneficial to society?</i> • <i>Level 4: Debate on the topic, Ghana's economy cannot survive without agricultural education, etc.</i> <i>Note: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 2)</i> <i>c) Agricultural Science (Week 1)</i> <i>Focal area/Theme 1</i> <i>i. Learning Tasks</i> • <i>Learners explain the meaning of agriculture</i> • <i>Learners discuss the importance of agriculture</i> • <i>Learners analyse the impact of agriculture on society, etc.</i> <i>ii. Pedagogical Exemplars</i> • <i>Initiating talk for learning: The teacher guides learners with probing and leading questions to come up with the meaning and importance of agriculture to society and the nation. Learners should be encouraged to provide oral or written responses</i>	<i>iii. Key Assessments</i> <i>Level 1: Identify two (2) institutions that offer agricultural education in Ghana and indicate their location, etc.</i> <i>c) Agricultural Science (Week 1)</i> <i>Focal area/Theme 1</i> <i>i. Learning Tasks</i> <i>Learners explain the meaning of agriculture, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: The teacher guides learners with probing and leading questions to come up with the meaning and importance of agriculture to society and the nation. Learners should be encouraged to provide oral or written responses, etc.</i>	
--	--	--	--

	• <i>Collaborative learning: Teacher puts learners in mixed-ability groups to discuss the impact of agriculture on society. More confident learners should be encouraged to lead the discussion and to provide assistance for other learners, etc.</i> <i>iii. Key Assessment</i> • <i>Level 2: Explain the meaning of agriculture.</i> • <i>Level 3: Explain three reasons agriculture should be studied by all secondary school learners in Ghana.</i> • <i>Level 4: Discuss how agriculture positively impacts various aspects of Ghanaian society, etc.</i> <i>Note: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 1)</i> <i>d) Agricultural Science (Week 2)</i> <i>Focal area/Theme 1</i> <i>i. Learning Tasks</i> • <i>Assemble pictures of common agricultural tools and implements</i> • <i>Search for information on the purpose of each of the various agricultural tools and implements</i> • <i>Demonstrate the proper techniques for using each tool safely and effectively, etc.</i>	<i>iii. Key Assessment</i> <i>Level 2: Explain the meaning of agriculture, etc.</i> <i>d) Agricultural Science (Week 2)</i> <i>Focal area/Theme 1</i> <i>i. Learning Tasks</i> <i>Assemble pictures of common agricultural tools and implements, etc.</i>	
--	---	--	--

	<i>ii. Pedagogical Exemplars</i> • <i>Activity-based learning: Teacher puts learners in mixed-ability groups and guides them to observe pictures or short videos, identify and discuss functions of simple farm tools, implements and machines. The teacher should support the learners whenever necessary</i> • <i>Experiential learning: Take learners to the school garden or farm (if available) and guide them on how best to use farm tools. The teacher should encourage all learners to practise how to use the tools and ensure that learners follow all the safety procedures when using these tools, etc.</i> <i>iii. Key Assessment</i> • <i>Level 1: List five simple farm tools</i> • <i>Level 2: Describe the parts and uses of five simple farm tools and implements</i> • <i>Level 3: Explain how selected farm tools can be used to boost agriculture production</i> • <i>Level 4: Sketch five farm tools, and discuss how they contribute to specific farming tasks, etc.</i> <i>Note: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 2)</i>	<i>ii. Pedagogical Exemplars</i> <i>Activity-based learning: Teacher puts learners in mixed-ability groups and guides them to observe pictures or short videos, identify and discuss functions of simple farm tools, implements and machines. The teacher should support the learners whenever necessary, etc.</i> <i>iii. Key Assessment</i> <i>Level 1: List five simple farm tools, etc.</i> <i>Note: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 2)</i>	
--	---	--	--

	2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Week 2. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	2.5 In your subject groups or individually, complete learning planner for Week 2. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning plans. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a	10mins

	recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 3 and 4 of the teacher manuals ahead of time and the DPLC Handbook Session 3 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 3 and 4 of the teacher manuals ahead of time and the DPLC Handbook Session 3 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins

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

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 2, <i>developing learning plans for Weeks 1 and 2</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 2, <i>developing learning plans for Weeks 1 and 2</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 2, <i>developing learning plans for Weeks 1 and 2</i>, 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 learned in DPLC Session 2, <i>developing learning plans for Weeks 1 and 2</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be completed per session)	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 3 and 4. Agricultural Science teachers will focus on developing learning plans for the following lessons:	2.1 Read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 3 and 4. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

	<i>a) Agriculture (Week 3)</i> <i>i. Meaning, types and importance of industries in agriculture</i> <i>ii. Interdependence between agriculture and industry</i> <i>iii. Challenges of agriculture in an industrialising society</i> <i>b) Agriculture (Week 4)</i> <i>i. Measuring tools in agriculture, their uses and maintenance</i> <i>ii. Indigenous measuring tools and standard units of measurement in agriculture production</i> <i>iii. Basic parameters and their calculations in agriculture production</i> <i>c) Agricultural Science (Week 3)</i> <i>i. Start-up package for vegetable crop farming in Ghana</i> <i>ii. Patterns of growth of successful vegetable crop and ornamental plant enterprises</i> <i>d) Agricultural Science (Week 4)</i> <i>i. Selected emerging technologies in vegetable crop and ornamental plant enterprises</i> <i>ii. Appraisal of emerging technologies in vegetable crop and</i>	<i>a) Agriculture (Week 3)</i> <i>i. Meaning, types and importance of industries in agriculture</i> <i>ii. Interdependence between agriculture and industry</i> <i>iii. Challenges of agriculture in an industrialising society</i> <i>b) Agriculture (Week 4)</i> <i>i. Measuring tools in agriculture, their uses and maintenance</i> <i>ii. Indigenous measuring tools and standard units of measurement in agriculture production</i> <i>iii. Basic parameters and their calculations in agriculture production</i> <i>c) Agricultural Science (Week 3)</i> <i>i. Start-up package for vegetable crop farming in Ghana</i> <i>ii. Patterns of growth of successful vegetable crop and ornamental plant enterprises</i> <i>d) Agricultural Science (Week 4)</i> <i>i. Selected emerging technologies in vegetable crop and ornamental plant enterprises</i> <i>ii. Appraisal of emerging technologies in vegetable crop and</i>	
--	--	--	--

	<i>ornamental plant production</i>	<i>ornamental plant production</i>	
	LO 1: Develop subject-specific learning plans for teaching Weeks 3 and 4 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 3 and 4 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 3 and 4 Agricultural Science lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 3 and 4 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation,	LO 1: Develop subject-specific learning plans for teaching Weeks 3 and 4 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 3 and 4 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 3 and 4 Agricultural Science lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 3 and 4 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions,	

	teaching and learning activities, assessment, and closure) of the learning plans for Weeks 3 and 4 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 3 and 4 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 3 and 4. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 3 and 4 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 3)</i> <i>i. How will the knowledge gained by individuals on the solutions to the economic challenges of agriculture in an industrializing society be used to boost agriculture and industrial production?</i> <i>ii. What connections can be made between interdependence of agriculture and industry</i>	teaching and learning activities, assessment, and closure) of learning plans for Weeks 3 and 4 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 3 and 4 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 3 and 4 from your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 3 and 4 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 3)</i> <i>How will the knowledge gained by individuals on the solutions to the economic challenges of agriculture in an industrializing society be used to boost agriculture and industrial production? etc.</i>	
--	--	---	--

	<i>to improve the worth of agriculture?</i> <i>iii. How will the understanding of agriculture and industry, arouse the interest of individuals in agriculture? etc.</i> <i>b) Agriculture (Week 4)</i> <i>i. What ways can individuals use indigenous tools effectively to increase food production?</i> <i>ii. How will the knowledge gained by individuals on the maintenance of indigenous agricultural measuring tools improve the shelf-life of the tools?</i> <i>iii. What connections can be made between indigenous and standardized tools to boost their interest in agricultural production? etc.</i> <i>c) Agricultural Science (Week 3)</i> <i>i. What appropriate resources can be used for effective teaching and learning of startup packages for vegetable crop and ornamental plant enterprises?</i> <i>ii. How can individuals use the concept of startup packages of vegetable crop enterprises to</i>	<i>b) Agriculture (Week 4)</i> <i>What ways can individuals use indigenous tools effectively to increase food production? etc.</i> <i>c) Agricultural Science (Week 3)</i> <i>What appropriate resources can be used for effective teaching and learning of startup packages for vegetable crop and ornamental plant enterprises? etc.</i>	
--	--	--	--

	<i>produce their own vegetables?</i> <i>iii. How can individuals use the knowledge gained in startup packages of ornamental plant enterprises to produce their own ornamentals to make a living? etc.</i> <i>d) Agricultural Science (Week 4)</i> <i>i. How can individuals use the concept of emerging technologies to increase their interest and improve upon the cultivation of vegetable crops and ornamental plants?</i> <i>ii. What appropriate resources can be used in teaching and learning emerging technologies in vegetable crop and ornamental plant enterprises?</i> <i>iii. How will the understanding of emerging technologies in vegetable crop and ornamental plant enterprises help increase food production? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 3 and 4 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g).	<i>d) Agricultural Science (Week 4)</i> <i>How can individuals use the concept of emerging technologies to increase their interest and improve upon the cultivation of vegetable crops and ornamental plants? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 3 and 4 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g).	
--	---	---	--

	<i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 3)</i> <i>i. Learning Tasks</i> • <i>Define industry in agriculture</i> • <i>Discuss the types of industries in agriculture and their importance</i> • <i>Identify the agro-based industries in your community and what they produce, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: The teacher asks learners to think about the meaning of industry in agriculture and share their thoughts in pairs. The teacher provides clues to learners with difficulties to guide them to define the meaning of industry in agriculture, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: Define industry in Agriculture</i> • <i>Level 2: Discuss at least two (2) importance of industries in</i>	<i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 3)</i> <i>i. Learning Tasks</i> <i>Define industry in agriculture, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: The teacher asks learners to think about the meaning of industry in agriculture and share their thoughts in pairs. The teacher provides clues to learners with difficulties to guide them to define the meaning of industry in agriculture, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: Define industry in Agriculture, etc.</i>	
--	---	--	--

	<i>Agricultural production</i> • <i>Level 3: Research on the agro-based industries in your community and what they produce</i> • <i>Level 4: What agro-based industry can be established in your community and why? etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 3)</i> <i>b) Agriculture (Week 4)</i> <i>i. Learning Tasks</i> • <i>List agricultural measuring tools used in your community</i> • <i>Discuss how to maintain the listed agricultural measuring tools</i> • <i>Demonstrate how measuring tools are used in agricultural production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners watch video/pictures on the appropriate uses and maintenance of some tools and instruments in Agricultural activities. Learners individually list examples of agricultural tools and instruments, their use(s) and maintenance, and share with a peer. Learners should be assisted with leading questions to come</i>	<i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 3)</i> <i>b) Agriculture (Week 4)</i> <i>i. Learning Tasks</i> <i>List agricultural measuring tools used in your community, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners watch video/pictures on the appropriate uses and maintenance of some tools and instruments in Agricultural activities. Learners individually list examples of agricultural tools and instruments, their use(s) and maintenance, and share with a peer. Learners should be assisted with leading questions to come</i>	
--	---	---	--

	<i>up with their observations, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: State at least three (3) basic farm tools and instruments used in agricultural activities</i> <i>• Level 2: Make a photo album of at least five (5) agricultural tools and instruments commonly used in your community</i> <i>• Level 3: Discuss the use of the following tools in agricultural production: a. Metre rule b. A pair of callipers c. Spring balance d. Pipette</i> <i>• Level 4: Discuss the maintenance of at least three (3) basic farm tools commonly used in your community to ensure ease of agricultural activities and longevity of the tools, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 4)</i> <i>c) Agricultural Science (Week 3)</i> <i>i. Learning Tasks</i> <i>• Learners prepare a questionnaire on start-up packages for successful vegetable and ornamental plant enterprises</i> <i>• Learners visit a farm/garden nearby to</i>	<i>up with their observations, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: State at least three (3) basic farm tools and instruments used in agricultural activities, etc.</i> <i>c) Agricultural Science (Week 3)</i> <i>i. Learning Tasks</i> <i>Learners prepare a questionnaire on start-up packages for successful vegetable and ornamental plant enterprises, etc.</i>	
--	--	--	--

	<i>administer the questionnaire to farmers/gardeners on start-up packages for vegetable and ornamental plant enterprises</i> <i>• Learners analyse their findings and determine how the responses will help them to start a garden or farm, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Teacher and learners embark on educational visits to successful vegetable crop farms and ornamental plant enterprises for learners to observe, ask questions and take field notes on start-up packages using a prepared questionnaire. Alternatively, resource persons should be invited for the same purpose. All learners should be encouraged to participate fully, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: Identify and catalogue the main successful vegetable and ornamental crop farmers in your locality</i> <i>• Level 2: Describe four start-up packages needed to start a vegetable crop or</i>		
	<i>administer the questionnaire to farmers/gardeners on start-up packages for vegetable and ornamental plant enterprises</i> <i>• Learners analyse their findings and determine how the responses will help them to start a garden or farm, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Teacher and learners embark on educational visits to successful vegetable crop farms and ornamental plant enterprises for learners to observe, ask questions and take field notes on start-up packages using a prepared questionnaire. Alternatively, resource persons should be invited for the same purpose. All learners should be encouraged to participate fully, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: Identify and catalogue the main successful vegetable and ornamental crop farmers in your locality, etc.</i>		

	<i>ornamental plant enterprise</i> • <i>Level 4: Analyse factors and processes that account for success and challenges of vegetable crop and ornamental plant enterprises, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 3)</i> <i>d) Agricultural Science (Week 4)</i> <i>i. Learning Tasks</i> • <i>Learners sketch a vertical farm and indicate which farming constraint it can solve</i> • <i>Learners make a portfolio of equipment and tools of emerging technologies</i> • <i>Learners read about the feasibility and economic viability of implementing a specific emerging technology in vegetable crop and ornamental plant production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Digital learning: The teacher guides learners to watch short documentaries or videos on selected emerging technologies (greenhouse planting, GMOs, hydroponics and tissue culture) in vegetable crop and ornamental plant enterprises, then discuss</i>	<i>N/B: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 3)</i> <i>d) Agricultural Science (Week 4)</i> <i>i. Learning Tasks</i> <i>Learners sketch a vertical farm and indicate which farming constraint it can solve, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Digital learning: The teacher guides learners to watch short documentaries or videos on selected emerging technologies (greenhouse planting, GMOs, hydroponics and tissue culture) in vegetable crop and ornamental plant enterprises, then discuss</i>	
--	---	---	--

	<i>the key observations, and write down their findings, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> • <i>Level 2: Describe three emerging technologies used in producing a vegetable crop or an ornamental plant</i> • <i>Level 3: Analyse the usefulness and limitations of using drones in agriculture, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 4)</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 3 and 4. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), national values, GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	<i>the key observations, and write down their findings, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 2: Describe three emerging technologies used in producing a vegetable crop or an ornamental plant, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 4)</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 3 and 4. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), national values, GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning plans. Reviewing planner to	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review	10mins

ensure alignment between course manual and learning planner based on the templates provided.	the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: ● Reflecting on what has been learned in the session. ● Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 5 and 6 of the teacher manuals ahead of time and the DPLC Handbook Session 4 in preparation for the next	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 5 and 6 of the teacher manuals ahead of time and the DPLC Handbook Session 4 in preparation for the next	10mins

	session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	
--	--	---	--

DPLC Session 4: Developing learning plans for Weeks 5 and 6			
<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 3, <i>developing learning plans for Weeks 3 and 4</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 3, <i>developing learning plans for Weeks 3 and 4</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 3, <i>developing learning plans for Weeks 3 and 4</i>, 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 learned in DPLC Session 3, <i>developing learning plans for Weeks 3 and 4</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and National values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 5 and 6. and Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the and Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 5 and 6. and Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

completed per session)	<i>a) Agriculture (Week 5)</i> <i>i. Meaning and importance of farm mechanisation and power in agriculture production</i> <i>ii. Safety measures employed in operating farm machines and power in agricultural production</i> <i>b) Agriculture (Week 6)</i> <i>i. Injuries in agricultural production</i> <i>ii. Contents of first aid box and their uses</i> <i>iii. General safety working practices and risk assessments</i> <i>c) Agricultural Science (Week 5)</i> <i>Use known technologies to produce vegetable crops and ornamental plants on the school premises</i> <i>d) Agricultural Science (Week 6)</i> <i>Explanation of the processes of tissue culture and its importance in vegetable crop and ornamental plant production</i> LO 1: Develop subject specific learning plans for teaching Weeks 5 and 6 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross	<i>a) Agriculture (Week 5)</i> <i>i. Meaning and importance of farm mechanisation and power in agriculture production</i> <i>ii. Safety measures employed in operating farm machines and power in agricultural production</i> <i>b) Agriculture (Week 6)</i> <i>i. Injuries in agricultural production</i> <i>ii. Contents of first aid box and their uses</i> <i>iii. General safety working practices and risk assessments</i> <i>c) Agricultural Science (Week 5)</i> <i>Use known technologies to produce vegetable crops and ornamental plants on the school premises</i> <i>d) Agricultural Science (Week 6)</i> <i>Explanation of the processes of tissue culture and its importance in vegetable crop and ornamental plant production</i> LO 1: Develop subject specific learning plans for teaching Weeks 5 and 6 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross	
--------------------------------------	--	--	--

	cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 5 and 6 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 5 and 6 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 5 and 6 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 5 and 6 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning	cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 5 and 6 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 5 and 6 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 5 and 6 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 5 and 6 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning	
--	--	--	--

	plans for Weeks 5 and 6 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 5 and 6. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 5 and 6 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 5)</i> <i>i. How can individuals use the concept of operating farm machines and power to dispel gender stereotyping in agriculture and to increase food production?</i> <i>ii. How will the knowledge gained by individuals on the meaning and importance of farm power be used to provide sustainable energy for agricultural machineries?</i> <i>iii. What connections can be made between farm mechanics and power to improve the worth of agriculture? etc.</i>	plans for Weeks 5 and 6 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 5 and 6 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 5 and 6 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 5)</i> <i>How can individuals use the concept of operating farm machines and power to dispel gender stereotyping in agriculture and to increase food production? etc.</i>	
--	---	---	--

	<i>b) Agriculture (Week 6)</i> <i>i. What ways can individuals employ safety measures in operating farm machines and power to avoid accidents?</i> <i>ii. What resources can be used to effectively teach farm safety measures, and the implications of using them wrongly?</i> <i>iii. How will the knowledge gained by learners on safety measures help in using first aid to treat injured agricultural workers and others? etc.</i> <i>c) Agricultural Science (Week 5)</i> <i>i. How will individuals use hydroponics in vegetable crops and ornamental plants production to increase their production?</i> <i>ii. What appropriate resources can be used in teaching and learning hydroponics in vegetable crops and ornamental plants production?</i> <i>iii. What connections can individuals make between the use of hydroponics and the indigenous ways of growing vegetables and ornamental plants? etc.</i>	<i>b) Agriculture (Week 6)</i> <i>What ways can individuals employ safety measures in operating farm machines and power to avoid accidents? etc.</i> <i>c) Agricultural Science (Week 5)</i> <i>How will individuals use hydroponics in vegetable crops and ornamental plants production to increase their production? etc.</i>	
--	---	---	--

	<i>d) Agricultural Science (Week 6)</i> <i>i. How will the knowledge gained by individuals on tissue culture be used to improve vegetable crops?</i> <i>ii. How can individuals use the concept of tissue culture to arouse interest in the cultivation of ornamental plants?</i> <i>iii. What appropriate resources can be used for effective teaching and learning of tissue culture? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 5 and 6 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 5)</i> <i>i. Learning Tasks</i> <i>• Explain the meaning of farm mechanisation</i>	<i>d) Agricultural Science (Week 6)</i> <i>How will the knowledge gained by individuals on tissue culture be used to improve vegetable crops? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 5 and 6 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 5)</i> <i>i. Learning Tasks</i> <i>Explain the meaning of farm mechanisation, etc.</i>	
--	---	--	--

	• <i>Identify some of the farm machinery used in your community</i> • <i>Explain the importance of farm mechanisation and farm power to Agricultural productivity, etc.</i> <i>ii. Pedagogical Exemplars</i> • <i>Talk for learning: Learners in pairs brainstorm to come up with the meaning and importance of farm mechanisation and farm power. Teacher should use pictures/charts of farm machines and power to assist learners define and explain the importance of farm mechanisation and power. Challenge gifted learners to give further explanation to the meaning and importance farm mechanisation and power</i> • <i>Experiential Learning: Learners in mixed ability groups embark on a field trip to a nearby farm/watch a short video on machineries that are used in Agricultural activities and build a portfolio on the machineries. Teacher should assist learners with difficulties with probing questions to help them build their portfolio, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum</i>	<i>ii. Pedagogical Exemplars</i> <i>Talk for learning: Learners in pairs brainstorm to come up with the meaning and importance of farm mechanisation and farm power. Teacher should use pictures/charts of farm machines and power to assist learners define and explain the importance of farm mechanisation and power. Challenge gifted learners to give further explanation to the meaning and importance farm mechanisation and power, etc.</i>	
--	--	---	--

	<i>for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: State the meaning of farm machinery and farm power in Agricultural production</i> • <i>Level 2: Discuss at least three (3) types of Agricultural machinery used in your community</i> • <i>Level 3: Discuss the impact of farm machinery and farm power in commercial Agriculture</i> • <i>Level 4: Present a report on the importance of farm machinery and power in Agricultural production based on the field trip/video watched, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 5)</i> <i>b) Agriculture (Week 6)</i> <i>i. Learning Tasks</i> • <i>State the meaning and causes of injuries associated with Agricultural production</i> • <i>Discuss the causes of injuries in Agricultural production</i> • <i>Discuss the types of injuries associated with Agricultural production, etc.</i> <i>ii. Pedagogical Exemplars</i> • <i>Manage talk for learning: Learners in pairs</i>	<i>iii. Key Assessments</i> <i>Level 1: State the meaning of farm machinery and farm power in Agricultural production, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 5)</i> <i>b) Agriculture (Week 6)</i> <i>i. Learning Tasks</i> <i>State the meaning and causes of injuries associated with Agricultural production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Manage talk for learning: Learners in</i>	
--	---	---	--

	<i>brainstorm to come up with the meaning and causes of occupational injuries in agricultural production. Teacher assists learners with leading questions and charts/pictures to come up with the meaning and causes of occupational injuries in agriculture. Talented learners should be challenged to give further explanation to the meaning and causes of occupational injuries in agriculture</i> • <i>Experiential learning: Learners watch a short video/picture on the causes and types of injuries in Agricultural production. Learners then discuss their findings in mixed ability groups. Learners with sight or hearing difficulties should be seated in a way to help them benefit from the video/picture. Teacher should caution learners on the sensitivity of the video/picture before use, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: Define occupational injuries in agricultural production</i> • <i>Level 2: Discuss at least three (3) causes of</i>	<i>pairs brainstorm to come up with the meaning and causes of occupational injuries in agricultural production. Teacher assists learners with leading questions and charts/pictures to come up with the meaning and causes of occupational injuries in agriculture. Talented learners should be challenged to give further explanation to the meaning and causes of occupational injuries in agriculture, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: Define occupational injuries in agricultural production, etc.</i>	
--	---	---	--

	<i>injuries in agricultural production</i> • <i>Level 3: Analysis at least three (3) injuries that can occur at a farm site, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 6)</i> <i>c) Agricultural Science (Week 5)</i> <i>i. Learning Tasks</i> • <i>Learners outline the characteristics of different vegetable crops and ornamental plants, and their suitability for specific growing environments</i> • <i>Learners develop a crop management plan that outlines the step-by-step procedures for growing selected vegetable crops and ornamental plants</i> • <i>Learners read about hydroponic systems to understand their roles in conserving water and delivering precise amounts of nutrients to crops, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Project-based learning: The teacher guides learners in mixed-ability groups to select appropriate plant varieties based on local climate and soil conditions, grow and care for the plants outdoors or in plastic containers and sacs. The</i>	<i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 6)</i> <i>c) Agricultural Science (Week 5)</i> <i>i. Learning Tasks</i> <i>Learners outline the characteristics of different vegetable crops and ornamental plants, and their suitability for specific growing environments, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Project-based learning: The teacher guides learners in mixed-ability groups to select appropriate plant varieties based on local climate and soil conditions, grow and care for the plants outdoors or in plastic containers and sacs. The teacher should encourage</i>	
--	---	---	--

	<i>teacher should encourage peer support to enable all learners to complete the activity, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: List the steps involved in the conventional way of growing crops</i> <i>• Level 2: Explain hydroponics and its benefits in vegetable crop and ornamental plant production</i> <i>• Level 3: Compare the benefits of cultivating crops in soil with the use of other media such as water or artificial substrate</i> <i>• Level 4: Present data on the selected vegetable crop being cultivated in a portfolio or folder, etc.</i> <i>d) Agricultural Science (Week 6)</i> <i>i. Learning Tasks</i> <i>• Learners read about tissue culture techniques</i> <i>• Learners analyse the advantages and disadvantages of tissue culture compared to traditional propagation methods</i> <i>• Learners discuss the role of tissue culture in improving crop yield,</i>	<i>peer support to enable all learners to complete the activity, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: List the steps involved in the conventional way of growing crops, etc.</i> <i>d) Agricultural Science (Week 6)</i> <i>i. Learning Tasks</i> <i>Learners read about tissue culture techniques, etc.</i>	
--	---	---	--

	<i>reducing production costs, and enhancing market competitiveness, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Collaborative learning: Learners in mixed- ability groups browse the internet for the meaning, importance, advantages and disadvantages of tissue culture in vegetable crop and ornamental plant production. Learners present their findings on cardboard posters and attach them to the walls. Teacher should support the groups wherever necessary. All learners should be made to take part in the activities, etc. N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: Outline the basic steps involved in growing vegetable crops and ornamental plants using conventional methods and tissue culture</i> <i>• Level 2: Explain tissue culture and its relevance in the production of vegetable crop and ornamental plants</i> <i>• Level 3: Compare and contrast the production of vegetable crops and ornamentals plants using conventional procedures and tissue culture</i>	<i>ii. Pedagogical Exemplars</i> <i>Collaborative learning: Learners in mixed- ability groups browse the internet for the meaning, importance, advantages and disadvantages of tissue culture in vegetable crop and ornamental plant production. Learners present their findings on cardboard posters and attach them to the walls. Teacher should support the groups wherever necessary. All learners should be made to take part in the activities, etc. N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: Outline the basic steps involved in growing vegetable crops and ornamental plants using conventional methods and tissue culture, etc.</i>	
--	--	---	--

	• <i>Level 4: Why are the steps in the tissue culture process important? etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 5 and 6. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	2.5 In your subject groups or individually, complete learning planners for Weeks 5 and 6. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> a) <i>Alignment between teacher manual and learning plans</i> b) <i>Innovativeness of pedagogical choices</i> c) <i>Incorporation of GESI, SEL, National Values and 21st century skills</i> d) <i>Differentiated instruction and assessment</i>	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> a) <i>Alignment between teacher manual and learning plans</i> b) <i>Innovativeness of pedagogical choices</i> c) <i>Incorporation of GESI, SEL, National Values and 21st century skills</i> d) <i>Differentiated instruction and assessment</i>	10mins

	<i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	<i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 7 and 8 of the teacher manuals ahead of time and the DPLC Handbook Session 5 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 7 and 8 of the teacher manuals ahead of time and the DPLC Handbook Session 5 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins

DPLC Session 5: Developing learning plans for Weeks 7 and 8

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 4, <i>developing learning plans for Weeks 5 and 6</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 4, <i>developing learning plans for Weeks 5 and 6</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 4, <i>developing learning plans for Weeks 5 and 6</i>, 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 learned in DPLC Session 4, <i>developing learning plans for Weeks 5 and 6</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be completed per session)	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 7 and 8. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 7 and 8. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

	<i>a) Agriculture (Week 7)</i> <i>i. Types and uses of farm machines and power in agricultural production</i> <i>ii. Factors that affect the use of farm machines and power sources</i> <i>b) Agriculture (Week 8)</i> <i>i. Principal parts of farm machines and implements and their functions</i> <i>ii. Step-by-step operation of some farm machines and implements in agricultural production</i> <i>c) Agricultural Science (Week 7)</i> <i>Other emerging technologies used to make the growing of vegetable crops and ornamental plants easier</i> <i>d) Agricultural Science (Week 8)</i> <i>Modern and efficient irrigation systems in vegetable crop and ornamental plant production</i> LO 1: Develop subject-specific learning plans for teaching Weeks 7 and 8 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 7 and 8	<i>a) Agriculture (Week 7)</i> <i>i. Types and uses of farm machines and power in agricultural production</i> <i>ii. Factors that affect the use of farm machines and power sources</i> <i>b) Agriculture (Week 8)</i> <i>i. Principal parts of farm machines and implements and their functions</i> <i>ii. Step-by-step operation of some farm machines and implements in agricultural production</i> <i>c) Agricultural Science (Week 7)</i> <i>Other emerging technologies used to make the growing of vegetable crops and ornamental plants easier</i> <i>d) Agricultural Science (Week 8)</i> <i>Modern and efficient irrigation systems in vegetable crop and ornamental plant production</i> LO 1: Develop subject-specific learning plans for teaching Weeks 7 and 8 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 7 and 8	
--	---	---	--

	Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 7 and 8 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 7 and 8 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 7 and 8 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 7 and 8 in line with the LOs, LIs and key concepts in the teacher manual where appropriate.	Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 7 and 8 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 7 and 8 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 7 and 8 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 7 and 8 in line with the LOs, LIs and key concepts in the teacher manual where appropriate.	
--	--	--	--

	2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 7 and 8. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 7 and 8 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 7)</i> <i>i. What appropriate resources can be used in the teaching and learning of types and uses of farm machines and power to enhance efficiency and productivity in agricultural operations?</i> <i>ii. How will the knowledge gained by individuals on the uses of farm machines and power reduce labour, increase productivity and promote sustainable farming?</i> <i>iii. How will understanding the factors that affect the use of farm machines and power help individuals to make informed decision on proper selection and utilization of farm machines and power to boost agriculture production? etc.</i>	2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 7 and 8 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 7 and 8 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 7)</i> <i>What appropriate resources can be used in the teaching and learning of types and uses of farm machines and power to enhance efficiency and productivity in agricultural operations? etc.</i>	
--	--	---	--

	<i>b) Agriculture (Week 8)</i> <i>i. How will individuals' knowledge on the principal parts of farm machines and implements as well as their functions help increase food production?</i> <i>ii. How will the knowledge gained by individuals in the operation and maintenance of farm machines be used to boost agriculture production?</i> <i>iii. What connections can be made between operation and maintenance of farm implements to improve the worth of agriculture? etc.</i>	<i>b) Agriculture (Week 8)</i> <i>How will individuals' knowledge on the principal parts of farm machines and implements as well as their functions help increase food production? etc.</i>	
	<i>c) Agricultural Science (Week 7)</i> <i>i. How will the knowledge gained by individuals on greenhouses be used to successfully grow vegetables sustainably?</i> <i>ii. How will individuals use emerging technologies such as drones, robots, remote sensors, among others to arouse their interest and to boost the production of ornamental plants?</i> <i>iii. What appropriate resources can be used in teaching and learning of other emerging technologies to make the growing of vegetable crops</i>	<i>c) Agricultural Science (Week 7)</i> <i>How will the knowledge gained by individuals on greenhouses be used to successfully grow vegetables sustainably? etc.</i>	

	<i>and ornamental plants easier and to promote sustainable production? etc.</i> <i>d) Agricultural Science (Week 8)</i> <i>i. How will individuals' understanding of the modern and efficient ways of crop irrigation reduce water wastage and ensure optimum plant growth?</i> <i>iii. What connections can learners make between the profitability of irrigation crop farming against rain-fed farming?</i> <i>iii. How will the knowledge gained by learners on the various forms of irrigation systems in vegetable crops and ornamental plants cultivation ensure all year-round production? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 7 and 8 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key</i>	<i>d) Agricultural Science (Week 8)</i> <i>How will individuals' understanding of the modern and efficient ways of crop irrigation reduce water wastage and ensure optimum plant growth? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 7 and 8 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key</i>	
--	---	---	--

	<i>assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 7)</i> <i>i. Learning Tasks</i> <i>Identify and describe the types of farm machinery and power</i> <i>Demonstrate the use of farm implements under the guidance of a technician</i> <i>Discuss the sources of farm power and their advantages and disadvantages, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiate talk for learning: In mixed-ability groups, learners watch videos/pictures on farm mechanisation to identify the sources, describe and discuss the advantages and disadvantages of farm machinery and power. Videos that portray gender biases should be avoided. Learners with difficulties should be supported with leading questions to identify and describe the farm machines and power as well as state their advantages and disadvantages</i> <i>Experiential Learning: Guided by a technician, learners in gender-based groups demonstrate the</i>	<i>assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 7)</i> <i>i. Learning Tasks</i> <i>Identify and describe the types of farm machinery and power etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiate talk for learning: In mixed-ability groups, learners watch videos/pictures on farm mechanisation to identify the sources, describe and discuss the advantages and disadvantages of farm machinery and power. Videos that portray gender biases should be avoided. Learners with difficulties should be supported with leading questions to identify and describe the farm machines and power as well as state their advantages and disadvantages, etc.</i>	
--	---	--	--

	<i>use of some of the farm implements in Agricultural production. Learners should be guided to do a risk assessment before operating the farm implements. All learners should be given the opportunity to operate the farm implements and this can be done on a rota basis. Learners with difficulties should be given the needed assistance, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: Identify at least four (4) farm implements and their use</i> <i>• Level 2: Describe the uses of the following Agricultural machines: a) Combine Harvesters b) Feed Mixers c) Fish Vaccinators</i> <i>• Level 3: Compare and contrast the uses of renewable and non-renewable sources of energy in Agricultural productions, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 7)</i> <i>b) Agriculture (Week 8)</i> <i>i. Learning Tasks</i>	<i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: Identify at least four (4) farm implements and their use, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 7)</i> <i>b) Agriculture (Week 8)</i> <i>i. Learning Tasks</i>	
--	---	--	--

	• <i>Identify the major parts of farm machines and implements</i> • <i>Describe the major parts of the internal combustion engine and their function</i> • <i>Describe the major parts of farm machines and implements and state their functions, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: Learners in mixed-ability groups visit a mechanic shop, watch videos/pictures or surf the internet to come up with the description and functions of the parts of farm implements and machines and present a report on their findings. Teacher should ensure that learners observe all the safety protocol at the mechanic shop. Teacher should provide learners with websites to help them gather information on the description and functions of the parts of farm implements and machines. Teacher should ensure learners do not veer off to watch unapproved contents. Learners with difficulties should be given the needed support, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i>	<i>Identify the major parts of farm machines and implements, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: Learners in mixed-ability groups visit a mechanic shop, watch videos/pictures or surf the internet to come up with the description and functions of the parts of farm implements and machines and present a report on their findings. Teacher should ensure that learners observe all the safety protocol at the mechanic shop. Teacher should provide learners with websites to help them gather information on the description and functions of the parts of farm implements and machines. Teacher should ensure learners do not veer off to watch unapproved contents. Learners with difficulties should be given the needed support, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i>	
--	---	---	--

	• <i>Level 1: Identify at least three (3) parts of the disc plough</i> • <i>Level 2: Discuss the functions of at least three (3) parts of a harrow</i> • <i>Level 3: Describe the importance of the transmission and control system of a tractor</i> • <i>Level 4: What are the similarities and differences between the ignition system of a petrol engine and a diesel engine? etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 8)</i> <i>c) Agricultural Science (Week 7)</i> <i>i. Learning Tasks</i> • <i>Learners use the internet to find out other technologies that make the growing of vegetable crops and ornamental plants easier</i> • <i>Learners investigate specific emerging technologies</i> • <i>Learners discuss how these emerging technologies improve resource efficiency, enhance plant health and increase crop yield, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: Teacher guides learners in mixed-ability groups to identify other emerging technologies and discuss how these emerging</i>	<i>Level 1: Identify at least three (3) parts of the disc plough, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 8)</i> <i>c) Agricultural Science (Week 7)</i> <i>i. Learning Tasks</i> <i>Learners use the internet to find out other technologies that make the growing of vegetable crops and ornamental plants easier, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: Teacher guides learners in mixed-ability groups to identify other emerging</i>	
--	---	---	--

	<i>technologies improve resource efficiency, enhance plant health and increase crop yield. Teacher should use leading questions to help learners to come up with other emerging technologies in vegetable crops and ornamental plants production. The teacher should guide others to explain how these emerging technologies improve resource efficiency, enhance plant health and increase crop yield, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: List four examples of other technologies used to produce vegetable crops and ornamental plants</i> <i>• Level 2: Explain how any one of the emerging technologies is used in the production of a vegetable crop or an ornamental plant</i> <i>• Level 3: Outline how any two of the emerging technologies reduce the drudgery involved in vegetable crop and ornamental plant production, etc.</i> <i>d) Agricultural Science (Week 8)</i>	<i>technologies and discuss how these emerging technologies improve resource efficiency, enhance plant health and increase crop yield. Teacher should use leading questions to help learners to come up with other emerging technologies in vegetable crops and ornamental plants production. The teacher should guide others to explain how these emerging technologies improve resource efficiency, enhance plant health and increase crop yield, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: List four examples of other technologies used to produce vegetable crops and ornamental plants, etc.</i> <i>d) Agricultural Science (Week 8)</i>	
--	---	--	--

	<i>i. Learning Tasks</i> • <i>Learners explain the meaning of crop irrigation and its importance in agriculture</i> • <i>Learners discuss the various modern irrigation systems for producing vegetable crops and ornamental plant</i> • <i>Learners search for information on modern and efficient crop irrigation methods using recommended websites provided by the teacher and write a report, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Talk for learning: The teacher helps learners with probing questions to bring out the meaning, importance, merits and demerits of crop irrigation systems. Alternatively, learners can watch as short video on the meaning, importance, merits and demerits of crop irrigation systems and discuss their findings. Confident learners should be allowed to lead discussions in class. Teacher should encourage all learners to actively the video and take part in the discussion, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i>	<i>i. Learning Tasks</i> <i>Learners explain the meaning of crop irrigation and its importance in agriculture, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Talk for learning: The teacher helps learners with probing questions to bring out the meaning, importance, merits and demerits of crop irrigation systems. Alternatively, learners can watch as short video on the meaning, importance, merits and demerits of crop irrigation systems and discuss their findings. Confident learners should be allowed to lead discussions in class. Teacher should encourage all learners to actively the video and take part in the discussion, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i>	
--	--	---	--

	<i>iii. Key Assessment</i> • <i>Level 1: List two modern irrigation systems and state the merits of each</i> • <i>Level 2: Explain the importance of irrigation systems in producing crops</i> • <i>Level 3: Prepare and present a report on the field trip to an irrigation site or video watched, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 7 and 8. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), National values, GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	<i>iii. Key Assessment</i> <i>Level 1: List two modern irrigation systems and state the merits of each, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 7 and 8. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), National values, GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, keynote on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i>	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, keynote on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i>	10mins

templates provided.	a) <i>Alignment between teacher manual and learning plans</i> b) <i>Innovativeness of pedagogical choices</i> c) <i>Incorporation of GESI, SEL, National Values and 21st century skills</i> d) <i>Differentiated instruction and assessment</i> e) <i>Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	a) <i>Alignment between teacher manual and learning plans</i> b) <i>Innovativeness of pedagogical choices</i> c) <i>Incorporation of GESI, SEL, National Values and 21st century skills</i> d) <i>Differentiated instruction and assessment</i> e) <i>Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: • Reflecting on what has been learned in the session • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 9 and 10 of the teacher manuals ahead of time and the DPLC Handbook Session 6 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 9 and 10 of the teacher manuals ahead of time and the DPLC Handbook Session 6 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10 mins

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

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 5, <i>developing learning plans for Weeks 7 and 8</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 5, <i>developing learning plans for Weeks 7 and 8</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 5, <i>developing learning plans for Weeks 7 and 8</i>, 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 learned in DPLC Session 5, <i>developing learning plans for Weeks 7 and 8</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 9 and 10. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 9 and 10. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

completed per session)	<i>a) Agriculture (Week 9)</i> <i>i. Meaning and importance of crops</i> <i>ii. Classification of crops</i> <i>b) Agriculture (Week 10)</i> <i>i. Principles of crop Production</i> <i>ii. Stages of crop production and its related practices</i> <i>c) Agricultural Science (Week 9)</i> <i>Criteria for selection of an appropriate irrigation method</i> <i>d) Agricultural Science (Week 10)</i> <i>Market-oriented production of vegetables and ornamental plants</i> LO 1: Develop subject-specific learning plans for teaching Weeks 9 and 10 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 9 and 10 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template.	<i>a) Agriculture (Week 9)</i> <i>i. Meaning and importance of crops</i> <i>ii. Classification of crops</i> <i>b) Agriculture (Week 10)</i> <i>i. Principles of crop Production</i> <i>ii. Stages of crop production and its related practices</i> <i>c) Agricultural Science (Week 9)</i> <i>Criteria for selection of an appropriate irrigation method</i> <i>d) Agricultural Science (Week 10)</i> <i>Market-oriented production of vegetables and ornamental plants</i> LO 1: Develop subject-specific learning plans for teaching Weeks 9 and 10 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 9 and 10 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template.	
--------------------------------------	---	---	--

	LI 1.2 Complete the learning planner templates for Weeks 9 and 10 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 9 and 10 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 9 and 10 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 9 and 10 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 9 and 10. (NTS 1a, 2c, 2f and 3d-3g).	LI 1.2 Complete the learning planner templates for Weeks 9 and 10 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 9 and 10 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 9 and 10 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 9 and 10 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 9 and 10 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g).	
--	--	---	--

	2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 9 and 10 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 9)</i> <i>i. What appropriate resources can be used in teaching and learning of the meaning and importance of crop production for individuals to make informed decision about crop selection, cultivation and harvesting?</i> <i>ii. How can individuals use the knowledge and understanding of the classification of crops to select a suitable crop and place for cultivation?</i> <i>iii. What connection can be made between the importance and classification of crops to ensure food security? etc.</i> <i>b) Agriculture (Week 10)</i> <i>i. What appropriate resources can be used for effective teaching and learning of the principles and stages of crop production?</i> <i>ii. How will the knowledge gained by individuals on the meaning of the principles of crop</i>	2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 9 and 10 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 9)</i> <i>What appropriate resources can be used in teaching and learning of the meaning and importance of crop production for individuals to make informed decision about crop selection, cultivation and harvesting? etc.</i> <i>b) Agriculture (Week 10)</i> <i>What appropriate resources can be used for effective teaching and learning of the principles and stages of crop production? etc.</i>	
--	---	--	--

	<i>production help them make proper choice on crop selection, planting techniques, nutrient management, pest control and harvesting methods to boost crop production?</i> <i>iii. How will the knowledge and understanding of the stages and the principles of crop production and their related practices help individuals make decisions about irrigation, fertilization, pest control and timing in crop production? etc.</i> <i>c) Agricultural Science (Week 9)</i> <i>i. How will individuals' understanding of the use of appropriate irrigation systems in the production of vegetable crops help to achieve higher productivity and healthy plant development?</i> <i>ii. How will the understanding of the use of appropriate irrigation systems in ornamental plant enterprises help increase food production?</i> <i>iii. What appropriate resources can be used in teaching and learning irrigation systems in vegetable crop and</i>	<i>c) Agricultural Science (Week 9)</i> <i>How will individuals' understanding of the use of appropriate irrigation systems in the production of vegetable crops help to achieve higher productivity and healthy plant development?</i>	
--	--	---	--

	<i>ornamental plant enterprises? etc.</i> <i>d) Agricultural Science (Week 10)</i> <i>i. What appropriate resources can be used for effective teaching and learning of the identification of market needs for vegetable crop and ornamental plant enterprises?</i> <i>ii. How will the understanding of market need for vegetable crop enterprises help increase food production?</i> <i>iii. How can learners' knowledge on the market needs of consumers increase their interest and improve upon the cultivation of ornamental plants? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i>	<i>d) Agricultural Science (Week 10)</i> <i>What appropriate resources can be used in the teaching and learning of the functions of the parts and uses of agricultural tools and implements used in crop production? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i>	
--	--	--	--

	<i>E.g.</i> a) Agriculture (Week 9) i. Learning Tasks • State the meaning and importance of crops • Explain the meaning and importance of crop production • Discuss the meaning and economic importance of crops to society, etc. ii. Pedagogical Exemplars <i>Experiential learning: All learners should be made to watch a video/pictures/charts on the meaning, importance and uses of crops and discuss their observations in pairs. The teacher should ensure that all learners stay focused while watching the video/pictures/charts to avoid anything that will distract their attention. Some learners should be assisted to state the meaning and importance of crops, others should be probed further to explain or discuss the importance of crops, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> iii. Key Assessments • Level 1: Explain the meaning of crops • Level 2: Analyse at least three (3) reasons for cultivating crops	<i>E.g.</i> a) Agriculture (Week 9) i. Learning Tasks State the meaning and importance of crops, etc. ii. Pedagogical Exemplars <i>Experiential learning: All learners should be made to watch a video/pictures/charts on the meaning, importance and uses of crops and discuss their observations in pairs. The teacher should ensure that all learners stay focused while watching the video/pictures/charts to avoid anything that will distract their attention. Some learners should be assisted to state the meaning and importance of crops, others should be probed further to explain or discuss the importance of crops, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> iii. Key Assessments Level 1: Explain the meaning of crops, etc.	
--	---	--	--

	• <i>Level 3: Assess the impact of crop production on the economy of Ghana</i> • <i>Level 4: To what extent is Ghana's industry dependent on crop production? etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 9)</i> <i>b) Agriculture (Week 10)</i> <i>i. Learning Tasks</i> • <i>State the meaning and principles of crop production</i> • <i>Discuss the meaning and key principles of crop production</i> • <i>Analyse the meaning and effects of these principles on crop production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Structuring talk for learning: Teacher guides learners to brainstorm to come up with the meaning, principles as well as the effects of these principles on crop production. Assist learners to state the meaning and principles of crop production. Guide others to explain the meaning and principles of crop production. Allow others to discuss the meaning and effects of these principles on crop production. Use charts and leading questions when necessary to support learners, etc.</i>	<i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 9)</i> <i>b) Agriculture (Week 10)</i> <i>i. Learning Tasks</i> <i>State the meaning and principles of crop production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Structuring talk for learning: Teacher guides learners to brainstorm to come up with the meaning, principles as well as the effects of these principles on crop production. Assist learners to state the meaning and principles of crop production. Guide others to explain the meaning and principles of crop production. Allow others to discuss the meaning and effects of these principles on crop production. Use charts and leading questions when necessary to support learners, etc.</i>	
--	--	--	--

	<i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: List the principles of crop production</i> • <i>Level 2: Explain at least three (3) principles of crop production</i> • <i>Level 3: Why is climate-smart practice as a principle of crop production important?</i> • <i>Level 4: How will the factors to consider in selecting a site for crop production increase crop yield? etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 10)</i> <i>c) Agricultural Science (Week 9)</i> <i>i. Learning Tasks</i> • <i>List the types of irrigation systems used in crop production</i> • <i>Design simple irrigation plans for named vegetable crops or ornamental plants</i> • <i>Learners are assigned projects to produce one vegetable or ornamental plant using a chosen irrigation system, etc.</i> <i>ii. Pedagogical Exemplars</i> • <i>Initiating talk for learning: The teacher should put learners in groups to</i>	<i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: List the principles of crop production, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 10)</i> <i>c) Agricultural Science (Week 9)</i> <i>i. Learning Tasks</i> <i>List the types of irrigation systems used in crop production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: The teacher should put learners in groups to</i>	
--	---	---	--

	<i>discuss and guide them to prepare a list of various crop species commonly grown in their locality, as well as the types of irrigation systems used in crop production. Teacher should ensure that all learners participate in the discussion</i> • <i>Project-based learning: Learners in mixed-ability groups, select a simple irrigation procedure and use that to produce a vegetable or an ornamental plant. Special time outside classroom lessons should be devoted for this. All learners should be made to take part in the project, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> • <i>Level 1: List the various types of irrigation used in the production of vegetable crops</i> • <i>Level 2: Explain why it is necessary to irrigate crop plants</i> • <i>Level 3: Sketch a simple irrigation system that supplies water directly to the root zone of crops</i> • <i>Level 4: Discuss why different plant species have unique water needs and how these requirements can vary based on factors like</i>	<i>discuss and guide them to prepare a list of various crop species commonly grown in their locality, as well as the types of irrigation systems used in crop production. Teacher should ensure that all learners participate in the discussion, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: List the various types of irrigation used in the production of vegetable crops, etc.</i>	
--	--	--	--

	<i>growth stage and climate conditions, etc.</i> <i>d) Agricultural Science (Week 10)</i> <i>i. Learning Tasks</i> • <i>Learners assess the market needs for the production of vegetables and ornamentals</i> • <i>Learners identify and evaluate existing businesses that are already serving the vegetable and ornamental plant market</i> • <i>Learners develop a comprehensive marketing plan for the vegetable and ornamental plant business, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: Teacher guides learners in groups on how to gather data through surveys, interviews or online research in assessing the market needs of vegetables and ornamentals. Teacher should assist slow learners to gather the needed information. Also, the teacher should encourage teamwork with team members providing support where necessary, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i>	<i>d) Agricultural Science (Week 10)</i> <i>i. Learning Tasks</i> <i>Learners assess the market needs for the production of vegetables and ornamentals, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: Teacher guides learners in groups on how to gather data through surveys, interviews or online research in assessing the market needs of vegetables and ornamentals. Teacher should assist slow learners to gather the needed information. Also, the teacher should encourage teamwork with team members providing support where necessary, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i>	
--	--	---	--

	<i>iii. Key Assessment</i> • <i>Level 1: List the factors that determine the market needs for the production of vegetables and ornamental plants</i> • <i>Level 2: Explain the market needs for types of ornamental plants and vegetables you plan to grow</i> • <i>Level 3: Examine the market demands and preferences for various types of ornamental plants and vegetables in the locality</i> • <i>Level 4: Analyse the market requirements and trends for a named ornamental plant and vegetable, considering factors like consumer preferences and emerging demands and submit a detailed written report, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 9 and 10. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	<i>iii. Key Assessment</i> <i>Level 1: List the factors that determine the market needs for the production of vegetables and ornamental plants, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 9 and 10. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
--	---	---	--

3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	10mins
4. Reflection on the session: ● Reflecting on what has been learned in the session. ● Advance preparation towards	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I).	10mins

next DPLC session	4.3 Remind teachers to read the contents of Weeks 11 and 12 of the teacher manuals ahead of time and the DPLC Handbook Session 7 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.3 Remember to read the contents of Weeks 11 and 12 of the teacher manuals ahead of time and the DPLC Handbook Session 7 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	
--------------------------	---	---	--

DPLC Session 7: Developing learning plans for Weeks 11 and 12			
<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 6, <i>developing learning plans for Weeks 9 and 10</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 6, <i>developing learning plans for Weeks 9 and 10</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 6, <i>developing learning plans for Weeks 9 and 10</i>, 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 learned in DPLC Session 6, <i>developing learning plans for Weeks 9 and 10</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 11 and 12. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 11 and 12. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

completed per session)	<i>a) Agriculture (Week 11) Hands-on and observation of farm practical activities to acquire skills in the principles of crop production</i> <i>b) Agriculture (Week 12)</i> <i>i. Meaning and importance of farm animals</i> <i>ii. Classification of animals with examples</i> <i>iii. Distribution of farm animals in Ghana and West Africa</i> <i>c) Agricultural Science (Week 11) Organise and produce a selected vegetable crop and ornamental plant</i> <i>d) Agricultural Science (Week 12) Post-harvest operations for vegetable crops and ornamental plants</i> LO 1: Develop subject-specific learning plans for teaching Weeks 11 and 12 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1 1.1 Discuss the important aspects in Weeks 11 and 12 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI,	<i>a) Agriculture (Week 11) Hands-on and observation of farm practical activities to acquire skills in the principles of crop production</i> <i>b) Agriculture (Week 12)</i> <i>i. Meaning and importance of farm animals</i> <i>ii. Classification of animals with examples</i> <i>iii. Distribution of farm animals in Ghana and West Africa</i> <i>c) Agricultural Science (Week 11) Organise and produce a selected vegetable crop and ornamental plant</i> <i>d) Agricultural Science (Week 12) Post-harvest operations for vegetable crops and ornamental plants</i> LO 1: Develop subject-specific learning plans for teaching Weeks 11 and 12 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 11 and 12 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI,	
--------------------------------------	--	--	--

	pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 11 and 12 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 11 and 12 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 11 and 12 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 11 and 12 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content	pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 11 and 12 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 11 and 12 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 11 and 12 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 11 and 12 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for	
--	--	--	--

	standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 11 and 12. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 11 and 12 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 11)</i> <i>i. How will the knowledge gained by individuals on the principles in crop production practices arouse their interest in agriculture?</i> <i>ii. What connections can be between the interdependence of the principles in crop production practices to improve the worth of agriculture?</i> <i>iii. How will the understanding of the principles in the crop production practices, boost agriculture production? etc.</i> <i>b) Agriculture (Week 12)</i> <i>i. What appropriate resources can be used in the teaching and learning of importance, classification and distribution of breeds of farm animals?</i> <i>ii. How can individuals use their knowledge on the</i>	your subject in Weeks 11 and 12 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 11 and 12 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 11)</i> <i>How will the knowledge gained by individuals on the principles in crop production practices arouse their interest in agriculture? etc.</i> <i>b) Agriculture (Week 12)</i> <i>What appropriate resources can be used in the teaching and learning of importance, classification and distribution of breeds of farm animals? etc.</i>	
--	--	--	--

	<i>distribution of farm animals in Ghana and West Africa to know where to keep a particular breed of animal to increase food production?</i> <i>iii. What connections can be made among the classification, distribution and selection of breeds of farm animals for a start-up production? etc.</i> <i>c) Agricultural Science (Week 11)</i> <i>i. What appropriate resources can be used in teaching and learning the organization and production of selected vegetable crops and ornamental plants?</i> <i>ii. How will the understanding of the concepts of market-oriented production of vegetable crops and ornamental plants help increase profit as expected?</i> <i>iii. How can individuals use the concept of market-oriented production of vegetables and ornamentals to increase their interest and improve upon the cultivation of vegetable crops and ornamental plants? etc.</i>	<i>c) Agricultural Science (Week 11)</i> <i>What appropriate resources can be used in teaching and learning the organization and production of selected vegetable crops and ornamental plants? etc.</i>	
--	--	---	--

	<i>d) Agricultural Science (Week 12)</i> <i>i. How will individuals use their understanding of post-harvest practices to maintain the freshness, quality and nutritional value of vegetable crops?</i> <i>ii. How will the knowledge gained by individuals on post-harvest practices in ornamental plants be used to preserve the beauty and longevity of ornamental plants?</i> <i>iii. What connections can individuals make between post-harvest practices in vegetable crops and ornamental plants production to arouse their interest to go into their production? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i>	<i>d) Agricultural Science (Week 12)</i> <i>How will individuals use their understanding of post-harvest practices to maintain the freshness, quality and nutritional value of vegetable crops? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i>	
--	---	---	--

	<i>E.g.</i> <i>a) Agriculture (Week 11)</i> <i>i. Learning Tasks</i> • <i>List the various farm practical activities involved in crop production</i> • <i>Explain the various farm practical activities involved in crop production</i> • <i>Participate or observe the various farm practical activities involved in crop production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiate talk for learning: Teacher puts learners in pairs to brainstorm to come up with the various farm practical activities involved in crop production. Some learners should be helped with leading questions to enable them to list the various farm practical activities involved in crop production. Others should be challenged to delve deeper by explaining the various farm practical activities involved in crop production. Where necessary allow learners to surf the internet or watch short videos for farm practical activities involved in crop production, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i>	<i>E.g.</i> <i>a) Agriculture (Week 11)</i> <i>i. Learning Tasks</i> <i>List the various farm practical activities involved in crop production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiate talk for learning: Teacher puts learners in pairs to brainstorm to come up with the various farm practical activities involved in crop production. Some learners should be helped with leading questions to enable them to list the various farm practical activities involved in crop production. Others should be challenged to delve deeper by explaining the various farm practical activities involved in crop production. Where necessary allow learners to surf the internet or watch short videos for farm practical activities involved in crop production, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i>	
--	---	---	--

	<i>iii. Key Assessments</i> • <i>Level 1: State any three (3) farm practical activities involved in crop production</i> • <i>Level 2: Explain land preparation activities in crop production</i> • <i>Level 3: Describe how to test for soil pH</i> • <i>Level 4: Examine the effects of weed control, disease and pest controls on crop production, etc.</i> <i>b) Agriculture (Week 12)</i> <i>i. Learning Tasks</i> • <i>State the meaning and importance of farm animals</i> • <i>Explain the meaning and importance of farm animals</i> • <i>Discuss the meaning and socio-economic importance of farm animals, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiate talk for learning: Learners brainstorm in pairs to review the meaning and importance of farm animals in Agriculture. Learners should be assisted with leading questions that will help them to come up with the meaning of farm animals. Others should be guided to explain the meaning and socio-economic importance of farm animals. Where necessary allow learners to surf the internet for the meaning and socio-</i>	<i>iii. Key Assessments</i> <i>Level 1: State any three (3) farm practical activities, etc.</i> <i>b) Agriculture (Week 12)</i> <i>i. Learning Tasks</i> <i>State the meaning and importance of farm animals etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiate talk for learning: Learners brainstorm in pairs to review the meaning and importance of farm animals in Agriculture. Learners should be assisted with leading questions that will help them to come up with the meaning of farm animals. Others should be guided to explain the meaning and socio-economic importance of farm animals. Where necessary allow learners to surf the internet for the meaning and socio-economic importance of</i>	
--	--	---	--

	<i>economic importance of farm animals. The teacher should monitor learners during browsing and learners familiar with internet search should support others, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: List at least one (1) importance of farm animals</i> <i>• Level 2: What are farm animals?</i> <i>• Level 3: Examine three (3) reasons for keeping large-scale farm animal.</i> <i>• Level 4: Why are farm animals important for socio-economic development of the country? etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 12)</i> <i>c) Agricultural Science (Week 11)</i> <i>i. Learning Tasks</i> <i>• List the factors necessary for growing vegetable crops and ornamental plants</i> <i>• Analyse the steps involved in the production of vegetables and ornamental plants</i> <i>• Learners produce vegetables or ornamental plants and</i>	<i>farm animals. The teacher should monitor learners during browsing and learners familiar with internet search should support others, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: List at least one (1) importance of farm animals, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 12)</i> <i>c) Agricultural Science (Week 11)</i> <i>i. Learning Tasks</i> <i>List the factors necessary for growing vegetable crops and ornamental plants, etc.</i>	
--	--	---	--

	<i>keep records of activities in their field note book, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>•Talk for learning: The teacher uses probing questions to guide learners in groups, especially those requiring support to list and analyse the major factors necessary for growing selected vegetable crops and ornamental plants. Confident learners should be encouraged to assist other learners</i> <i>•Project-based learning: Learners in mixed-gender/mixed-ability groups (where appropriate) select some vegetables and ornamental crops to grow in the school garden/farm in beds or in boxes, sacks, pots or plastic bottles using a chosen irrigation system. They should make regular visits to the garden to care for the plants and take records for discussion outside classroom lessons, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: List the materials needed to produce selected</i>	<i>ii. Pedagogical Exemplars</i> <i>Talk for learning: The teacher uses probing questions to guide learners in groups, especially those requiring support to list and analyse the major factors necessary for growing selected vegetable crops and ornamental plants. Confident learners should be encouraged to assist other learners, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: List the materials needed to produce selected vegetable crops</i>	
--	--	---	--

	<i>vegetable crops and ornamental plants</i> • <i>Level 2: Explain how the production of selected vegetable crops and ornamental plants meet identified needs</i> • <i>Level 3: Discuss the stages of production and related challenges of selected vegetable crops and ornamental plants, etc.</i> <i>d) Agricultural Science (Week 12)</i> <i>i. Learning Tasks</i> • <i>Learners state the meaning and give examples of post-harvest operations in vegetable crops and ornamental plant production</i> • <i>Learners explain the marketing strategies for selling vegetable crops and ornamental plants</i> • <i>Learners collect some fresh unwashed tubers and vegetables from the school kitchen or from home to demonstrate washing, cleaning and sorting, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Talk for learning: The teacher uses probing questions to guide learners in mixed-ability groups to bring out the meaning of post-harvest operations and identify examples of these</i>	<i>and ornamental plants, etc.</i> <i>d) Agricultural Science (Week 12)</i> <i>i. Learning Tasks</i> <i>Learners state the meaning and give examples of post-harvest operations in vegetable crops and ornamental plant production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Talk for learning: The teacher uses probing questions to guide learners in mixed-ability groups to bring out the meaning of post-harvest operations and identify examples of these</i>	
--	---	---	--

	<i>activities in marketing vegetable crops and ornamental plants. Confident learners can be made to lead discussions on the meaning of post-harvest operations, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>ii. Key Assessment</i> <i>• Level 1: Outline the marketing strategies used to market selected vegetable crops and ornamental plants</i> <i>• Level 2: Describe the post-harvest practices carried out for a selected vegetable crop or ornamental plants</i> <i>• Level 3: Examine the reasons for performing post-harvest activities in marketing of vegetable crops and ornamental plants, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 11 and 12. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	<i>activities in marketing vegetable crops and ornamental plants. Confident learners can be made to lead discussions on the meaning of post-harvest operations, etc.</i> <i>N/B: Refer to Teacher Manual and Curriculum for other pedagogical exemplars</i> <i>ii. Key Assessment</i> <i>Level 1: Outline the marketing strategies used to market selected vegetable crops and ornamental plants, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 11 and 12. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
--	---	--	--

3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	10mins
--	--	--	---------------

4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 13 and 14 of the teacher manual ahead of time and the DPLC Handbook Session 8 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 13 and 14 of the teacher manual ahead of time and the DPLC Handbook Session 8 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins
--	--	---	---------------

DPLC Session 8: Developing learning plans for Weeks 13 and 14			
<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 7, <i>developing learning plans for Weeks 11 and 12</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 7, <i>developing learning plans for Weeks 11 and 12</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 7, <i>developing learning plans for Weeks 11 and 12</i>, 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 learned in DPLC Session 7, <i>developing learning plans for Weeks 11 and 12</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 13 and 14. Science Department teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 13 and 14. Science Department teachers will focus on developing learning plans for the following lessons:	60mins

completed per session)	<i>a) Agriculture (Week 13)</i> <i>i. Meaning and objectives of the general management practices in animal production</i> <i>ii. Management systems involved in animal production</i> <i>b) Agriculture (Week 14)</i> <i>Skills in farm animal husbandry practices for rearing animals</i> <i>c) Agricultural Science (Week 13)</i> <i>i. Resources and market needs for poultry production</i> <i>d) Agricultural Science (Week 14)</i> <i>Organisation and production of the common poultry types in the locality for eggs and meat</i> LO 1: Develop subject-specific learning plans for teaching Weeks 13 and 14 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1 1.1 Discuss the important aspects in Weeks 13 and 14 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and	<i>a) Agriculture (Week 13)</i> <i>i. Meaning and objectives of the general management practices in animal production</i> <i>ii. Management systems involved in animal production</i> <i>b) Agriculture (Week 14)</i> <i>Skills in farm animal husbandry practices for rearing animals</i> <i>c) Agricultural Science (Week 13)</i> <i>i. Resources and market needs for poultry production</i> <i>d) Agricultural Science (Week 14)</i> <i>Organisation and production of the common poultry types in the locality for eggs and meat</i> LO 1: Develop subject-specific learning plans for teaching Weeks 13 and 14 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 13 and 14 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and	
--------------------------------------	--	--	--

	relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 13 and 14 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 13 and 14 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 13 and 14 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 13 and 14 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for	relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 13 and 14 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 13 and 14 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 13 and 14 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 13 and 14 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 13 and	
--	---	--	--

	their subjects in Weeks 13 and 14. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 13 and 14 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 13)</i> <i>i. What connections can individuals make between the meaning and objectives of the general management practices in animal production to help them make informed decisions about breeding, nutrition, diseases prevention and overall farm profitability?</i> <i>ii. How will individuals' understanding of the general management practices involved in animal production help ensure the well-being and productivity of animals?</i> <i>iii. How can individuals use the knowledge gained on the general management practices of farm animals to sustainably improve breeding, feeding, housing, animal welfare and healthcare? etc.</i> <i>b) Agriculture (Week 14)</i> <i>i. What appropriate resources can be used in the teaching and learning of the</i>	14 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 13 and 14 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 13)</i> <i>What connections can individuals make between the meaning and objectives of the general management practices in animal production to help them make informed decisions about breeding, nutrition, diseases prevention and overall farm profitability? etc.</i> <i>b) Agriculture (Week 14)</i> <i>What appropriate resources can be used in the teaching and learning of the application of skills</i>	
--	--	---	--

	<i>application of skills in farm animal management practices for rearing animals?</i> <i>ii. How will the understanding of the skills involved in farm animal production ensures ensure effective and efficient outcome in-terms of optimizing productivity, minimizing cost and promotion of animal welfare?</i> <i>iii. How will the knowledge gained by individuals on the procedures in carrying out husbandry practices ensure the well-being and productivity of animals? etc.</i> <i>c) Agricultural Science (Week 13)</i> <i>i. How will the knowledge gained by individuals on the identification of key factors influencing resource availability impact positively on the poultry industry?</i> <i>ii. How will individuals use their understanding of the market needs for poultry to improve their production?</i> <i>iii. What appropriate resources can be used for teaching and learning market needs for poultry production to assist individuals in establishing</i>	<i>in farm animal management practices for rearing animals? etc.</i> <i>c) Agricultural Science (Week 13)</i> <i>How will the knowledge have gained by individuals on the identification of key factors influencing resource availability impact positively on the poultry industry? etc.</i>	
--	---	--	--

	<i>short- and long-term goals for producing poultry meat and eggs? etc.</i> <i>d) Agricultural Science (Week 14)</i> <i>i. How can individuals use the practical knowledge gained on the organization and production of poultry to select the right type of poultry for egg and meat production in their locality?</i> <i>ii. What connections can be made between poultry production and the resources required for poultry management to ensure proper environmental, nutritional, and healthcare for optimal growth and profitability in poultry production?</i> <i>iii. How will the knowledge gained by individuals on the marketing needs for poultry help boost poultry production? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical</i>	<i>d) Agricultural Science (Week 14)</i> <i>How can individuals use the practical knowledge gained on the organization and production of poultry to select the right type of poultry for egg and meat production in their locality, etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical</i>	
--	--	--	--

	<i>exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 13)</i> <i>i. Learning Tasks</i> <i>•State the objectives of general management practices in animal production</i> <i>•Explain the meaning of general management practices in animal production</i> <i>•Discuss the benefits of the objectives of proper management systems for keeping farm animals, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Managing talk for learning: Learners in mixed-ability groups discuss the meaning and objective of the general management practices involved in animal production. Slow learners should be assisted with probing questions that will help them to list the meaning and objectives of general management practices in animal production. Challenge others to explain the meaning and objectives of general management practices in animal production. Let learners with the ability to delve deeper into discussing the</i>	<i>exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 13)</i> <i>i. Learning Tasks</i> <i>State the objectives of general management practices in animal production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Managing talk for learning: Learners in mixed-ability groups discuss the meaning and objective of the general management practices involved in animal production. Slow learners should be assisted with probing questions that will help them to list the meaning and objectives of general management practices in animal production. Challenge others to explain the meaning and objectives of general management practices in animal production. Let learners with the ability to delve deeper into discussing the</i>	
--	--	--	--

	<i>benefits of the objectives of proper management systems for keeping farm animals to do so, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: State three (3) objectives of the management practices involved in farm animal production</i> <i>• Level 2: Discuss the meaning of general management practices involved in animal production</i> <i>• Level 3: How will proper management systems for keeping animals benefit the animal</i> <i>• Level 4: Why will proper management of animals benefit humans, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 13)</i> <i>b) Agriculture (Week 14)</i> <i>i. Learning Tasks</i> <i>• State the various animal husbandry practices</i> <i>• Provide the tools for performing the various animal husbandry practices</i> <i>• Explain the various animal husbandry practices and the reasons for performing them, etc.</i>	<i>benefits of the objectives of proper management systems for keeping farm animals to do so, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: State three (3) objectives of the management practices involved in farm animal production, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 13)</i> <i>b) Agriculture (Week 14)</i> <i>i. Learning Tasks</i> <i>State the various animal husbandry practices, etc.</i>	
--	---	--	--

	<i>ii. Pedagogical Exemplars</i> <i>Collaborative learning: Learners in mixed-ability groups identify and discuss the various animal husbandry practices of farm animals. The teacher should assist learners with leading questions that will help them to list the various animal husbandry practices and tools used for performing these activities. Others should be guided to explain the various animal husbandry practices and the reasons for performing them. The teacher should show pictures of the various tools used in animal husbandry practices where necessary, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: List three (3) animal husbandry practices</i> <i>• Level 2: Explain three (3) husbandry practices in animal production and their advantages</i> <i>• Level 3: Describe a step-by-step procedure for carrying out the following a) Dehorning, b) Debeaking, c) Ear tagging</i> <i>• Level 4: Weaning is an important animal husbandry, convince farmers of the need to carry out weaning on their farms, etc.</i>	<i>ii. Pedagogical Exemplars</i> <i>Collaborative learning: Learners in mixed-ability groups identify and discuss the various animal husbandry practices of farm animals. The teacher should assist learners with leading questions that will help them to list the various animal husbandry practices and tools used for performing these activities. Others should be guided to explain the various animal husbandry practices and the reasons for performing them. The teacher should show pictures of the various tools used in animal husbandry practices where necessary, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: List three (3) animal husbandry practices, etc.</i>	
--	---	--	--

	c) Agriculture Science (Week 13) i. Learning Tasks • List the resources required for setting up poultry production • Explain the factors that influence resource availability and their impact on poultry production • Discuss the market needs and demands for poultry production, etc. ii. Pedagogical Exemplars <i>Think-pair-share: Learners brainstorm on the resources, factors and the need for poultry production and share their thoughts with their peers. Learners then surf the internet for information on resources required for setting up, the factors that influence poultry production and the market needs for poultry, and discuss their findings with their peers. The teacher should support learners with the right website and ensure that learners do not browse unauthorized websites. Learners who are good at using the internet should shout their peers, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> iii. Key Assessments • Level 1: Enumerate the resources required for	c) Agriculture Science (Week 13) i. Learning Tasks <i>List the resources required for setting up poultry production, etc.</i> ii. Pedagogical Exemplars <i>Think-pair-share: Learners brainstorm on the resources, factors and the need for poultry production and share their thoughts with their peers. Learners then surf the internet for information on resources required for setting up, the factors that influence poultry production and the market needs for poultry, and discuss their findings with their peers. The teacher should support learners with the right website and ensure that learners do not browse unauthorized websites. Learners who are good at using the internet should shout their peers, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> iii. Key Assessment <i>Level 1: Enumerate the resources required for</i>	
--	--	---	--

	<i>production of poultry eggs and meat</i> • <i>Level 2: Describe how you identify market needs for poultry production</i> • <i>Level 3: Discuss how meeting the market needs for poultry meat and egg production can help make the poultry business a success</i> • <i>Level 4: Suppose you are planning to start a new poultry production business, discuss the essential identity resources you would prioritize to build a strong brand and reputation in the market, etc.</i> <i>d) Agriculture Science (Week 14)</i> <i>i. Learning Task</i> • <i>List the stages and challenges involved in poultry production</i> • <i>Explain how to identify potential suppliers and partners for poultry production</i> • <i>Develop resources and market need plan for poultry production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners watch short documentaries, videos or pictures on poultry production and discuss the stages involved and challenges in poultry production, how to identify</i>	<i>production of poultry eggs and meat, etc.</i> <i>d) Agriculture Science (Week 14)</i> <i>i. Learning Task</i> <i>List the stages and challenges involved in poultry production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners watch short documentaries, videos or pictures on poultry production and discuss the stages involved and challenges in poultry production, how to identify</i>	
--	--	---	--

	<i>potential suppliers, partners and markets for poultry products. Learners should be assisted to identify the stages, how to identify potential suppliers, partners and markets for poultry production when they are watching the documentaries, video or pictures. The teacher should allow learners either to list the stages, provide explanations, or discuss potential suppliers, partners and markets for poultry production depending on the capability of learners. Learners with visual and hearing changes should be provided with the needed support, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: Outline the stages involved in poultry production</i> <i>• Level 2: Describe the stages involved in production</i> <i>• Level 3: How will the challenges involved in poultry production be solved.</i> <i>• Level 4: Produce selected poultry for eggs and meat to meet identified market needs, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks	<i>potential suppliers, partners and markets for poultry products. Learners should be assisted to identify the stages, how to identify potential suppliers, partners and markets for poultry production when they are watching the documentaries, video or pictures. The teacher should allow learners either to list the stages, provide explanations, or discuss potential suppliers, partners and markets for poultry production depending on the capability of learners. Learners with visual and hearing changes should be provided with the needed support, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: Outline the stages involved in poultry production, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 13 and 14. It should include	
--	--	--	--

	13 and 14. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k)	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	10mins

	learning plans as appropriate (NTS 1b).		
4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 15 and 16 of the teacher manuals ahead of time and the DPLC Handbook Session 9 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 15 and 16 of the teacher manuals ahead of time and the DPLC Handbook Session 9 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins

DPLC Session 9: Developing learning plans for Weeks 15 and 16

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 8, <i>developing learning plans for Weeks 13 and 14</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 8, <i>developing learning plans for Weeks 13 and 14</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 8, <i>developing learning plans for Weeks 13 and 14</i>, 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 learned in DPLC Session 8, <i>developing learning plans for Weeks 13 and 14</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be completed per session)	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 15 and 16. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 15 and 16. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

	<i>a) Agriculture (Week 15)</i> <i>i. Meaning and importance of forestry and forest management</i> <i>ii. Concepts and importance of the interrelations between forestry and agriculture</i> <i>iii. Discuss agroforestry practices and systems in forest management</i> <i>b) Agriculture (Week 16)</i> <i>i. Meaning and nature of soil</i> <i>ii. Describe the physical and chemical properties of soils and their importance</i> <i>c) Agricultural Science (Week 15)</i> <i>Distribution outlets and marketing poultry produce and products</i> <i>d) Agricultural Science (Week 16)</i> <i>Types of customary and statutory land tenure systems</i> LO 1: Develop subject-specific learning plans for teaching Weeks 15 and 16 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1 1.1 Discuss the important aspects in Weeks 15 and 16 Agricultural Science	<i>a) Agriculture (Week 15)</i> <i>i. Meaning and importance of forestry and forest management</i> <i>ii. Concepts and importance of the interrelations between forestry and agriculture</i> <i>iii. Discuss agroforestry practices and systems in forest management</i> <i>b) Agriculture (Week 16)</i> <i>i. Meaning and nature of soil</i> <i>ii. Describe the physical and chemical properties of soils and their importance</i> <i>c) Agricultural Science (Week 15)</i> <i>Distribution outlets and marketing poultry produce and products</i> <i>d) Agricultural Science (Week 16)</i> <i>Types of customary and statutory land tenure systems</i> LO 1: Develop subject-specific learning plans for teaching Weeks 15 and 16 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 15 and 16 Agricultural Science	
--	---	---	--

	Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 15 and 16 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 15 and 16 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 15 and 16 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 15 and 16 in line with the LOs, LIs and key concepts in the teacher manual where appropriate.	Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 15 and 16 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 15 and 16 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 15 and 16 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 15 and 16 in line with the LOs, LIs and key concepts in the teacher manual where appropriate.	
--	---	---	--

	2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 15 and 16. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 15 and 16 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 15)</i> <i>i. How will the understanding gained by individuals on the importance of forest and forestry management improve soil conservation, water regulation, biodiversity, climate regulation and the enhancement of agricultural productivity?</i> <i>ii. How will the knowledge gained by individuals on the principles of forestry and forest management in agriculture promote diversity, prevent soil erosion and maintain water quality?</i> <i>iii. What connections can individuals make on the concepts and importance of the interrelations between forestry and agriculture in the enhancement of</i>	2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 15 and 16 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 15 and 16 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 15)</i> <i>How will the understanding gained by individuals on the importance of forest and forestry management improve soil conservation, water regulation, biodiversity, climate regulation and the enhancement of agricultural productivity? etc.</i>	
--	--	---	--

	<i>soil fertility and promotion of sustainable land management practices? etc.</i> <i>b) Agriculture (Week 16)</i> <i>i. What appropriate resources can be used in the teaching and learning of the functions and importance of soil in agriculture production to help individuals understand how soil provide nutrients, retain water, and support plant growth?</i> <i>ii. How will the understanding gained by individuals on the importance of soil profile in agricultural production help make informed decisions about irrigation system, drainage, and fertilizer application to increase crop yield?</i> <i>iii. What connections can individuals make between the physical and chemical properties of soil to understand soil texture, structure, pH levels, nutrient content and create optimal growing conditions for crop yield? etc.</i> <i>c) Agricultural Science (Week 15)</i> <i>i. How will individuals use the understanding of the ways of marketing poultry</i>	<i>b) Agriculture (Week 16)</i> <i>What appropriate resources can be used in the teaching and learning of functions and importance of soil in agriculture production to help individuals understand how soil provide nutrients, retain water, and support plant growth? etc.</i> <i>c) Agricultural Science (Week 15)</i> <i>i How will individuals use the understanding of the ways of marketing poultry</i>	
--	--	--	--

	<i>produce and products to increase sales, and maximize profits in poultry production?</i> <i>ii. How will individuals use the understanding of the production of common poultry types for eggs and meat to increase productivity and good meat quality?</i> <i>iii. What connections can be made between the organisation and the production of common poultry types for eggs and meat to improve the practices for raising and managing birds, optimum productivity and profitability? etc.</i> <i>d) Agricultural Science (Week 16)</i> <i>i. What resources can be used in the teaching and learning of customary land tenure systems to promote fairness, transparency, and sustainability with respect to land ownership?</i> <i>ii. How will individuals use the understanding of statutory land tenure system to improve land administration, address issues of land encroachment and resolve land disputes?</i> <i>iii. What connections can be made between customary</i>	<i>produce and products to increase sales, and maximize profits in poultry production? etc.</i> <i>d) Agricultural Science (Week 16)</i> <i>What resources can be used in the teaching and learning of customary land tenure systems to promote fairness, transparency, and sustainability with respect to land ownership? etc.</i>	
--	--	--	--

	<i>land tenure systems and statutory land tenure systems to promote fairness, transparency and sustainable land governance? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 15)</i> <i>i. Learning Tasks</i> <i>Differentiate between forest and forest management</i> <i>Discuss the importance of forest and forest management</i> <i>Discuss the sustainable agricultural practices that ensures long-term health and productivity of the forest ecosystems, etc.</i>	2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 15)</i> <i>i. Learning Tasks</i> <i>Differentiate between forest and forest management, etc.</i>	
--	---	---	--

	<i>ii. Pedagogical Exemplars</i> <i>Managing talk for learning: Learners in pairs brainstorm to come up with the meaning and importance of forestry and forest management in Agriculture. The teacher should provide leading questions to guide learners to come up with the definition(s) and importance of forestry and forest management. Some learners should be guided or allowed to discuss the sustainable agricultural practices that ensures long-term health and productivity of the forest ecosystems. A short documentary on forestry and forest management should be shown when necessary to improve upon the understanding of the subject, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: Define the following terms i) forest and ii) forest management</i> <i>• Level 2: Discuss at least three (3) importance of forest and forest management in agriculture</i> <i>• Level 3: Describe at least three (3) sustainable practices that ensure long term</i>	<i>ii. Pedagogical Exemplars</i> <i>Managing talk for learning: Learners in pairs brainstorm to come up with the meaning and importance of forestry and forest management in Agriculture. The teacher should provide leading questions to guide learners to come up with the definition(s) and importance of forestry and forest management. Some learners should be guided or allowed to discuss the sustainable agricultural practices that ensures long-term health and productivity of the forest ecosystems. A short documentary on forestry and forest management should be shown when necessary to improve upon the understanding of the subject, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: Define the following terms i) forest and ii) forest management, etc.</i>	
--	--	--	--

	<i>productivity of the forest ecosystem</i> • <i>Level 4: Write a report on the importance of forestry and forest management based on observations made during the visit to a nearby forest or video watched on a forest, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 15)</i> <i>b) Agriculture (Week 16)</i> <i>i. Learning Tasks</i> • <i>Explain the function of soil in agriculture</i> • <i>Describe the various stratifications of the soil profile</i> • <i>Discuss the importance of soil profile in agricultural production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Structuring talk for learning: Learners in mixed-ability groups brainstorm to come up with the meaning and functions of soil in agriculture and discuss it in their group. The teacher should assist learners with leading questions to come up with the meaning and functions of soil in agriculture. Learners then watch a video on soil profile that explicitly shows the various stratifications/horizons. Task learners to draw the</i>	<i>b) Agriculture (Week 16)</i> <i>i. Learning Tasks</i> <i>Explain the function of soil in agriculture, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Structuring talk for learning: Learners in mixed-ability groups brainstorm to come up with the meaning and functions of soil in agriculture and discuss it in their group. The teacher should assist learners with leading questions to come up with the meaning and functions of soil in agriculture. Learners then watch a video on soil profile that explicitly shows the various stratifications/horizons. Task learners to draw the</i>	
--	--	---	--

	<i>soil profile. Learners with visual and hearing aids should be supported to benefit from the video. Students who are good at drawing should support their colleagues. All learners should be encouraged to take part in all activities, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: State at least three (3) importance of soil in agriculture production</i> <i>• Level 2: Identify at least three (3) horizons in a soil profile</i> <i>• Level 3: Draw and label the soil profile of the soil in your school farm. Indicating the various horizons/layers and their importance in Agriculture</i> <i>• Level 4: Why is it important for a farmer to know the profile of his/her soil before cultivation, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 16)</i> <i>c) Agriculture Science (Week 15)</i> <i>i. Learning Tasks</i> <i>• Outline the distribution outlets for poultry production</i>	<i>soil profile. Learners with visual and hearing aids should be supported to benefit from the video. Students who are good at drawing should support their colleagues. All learners should be encouraged to take part in all activities, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: State at least three (3) importance of soil in agriculture production, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 16)</i> <i>c) Agricultural Science (Week 15)</i> <i>i. Learning Tasks</i> <i>Outline the distribution outlets for poultry production etc.</i>	
--	---	---	--

	• Explain how these outlets are important for poultry production • Discuss the needs and demand for poultry meat, eggs and products, etc. ii. Pedagogical Exemplars Managing talk for learning: Learners in mixed-ability groups discuss the distribution outlets, their importance and how to create or identify the needs and demand for poultry meat eggs and products. Slow learners should be assisted with probing questions that will help them to list the distribution outlets for poultry production. Challenge others to explain how these outlets are important for poultry production. Let learners with the ability to delve deeper into discussing the needs and demand for poultry meat, eggs and products to do so, etc. N/B: Refer to Teacher Manual for other pedagogical exemplars iii. Key Assessment • Level 1: Identify market distribution outlets for poultry eggs and meat • Level 2: Explain the categorization of market distribution outlets for poultry production • Level 3: Discuss the ingredients for effective	ii. Pedagogical Exemplars Managing talk for learning: Learners in mixed-ability groups discuss the distribution outlets, their importance and how to create or identify the needs and demand for poultry meat eggs and products. Slow learners should be assisted with probing questions that will help them to list the distribution outlets for poultry production. Challenge others to explain how these outlets are important for poultry production. Let learners with the ability to delve deeper into discussing the needs and demand for poultry meat, eggs and products to do so, etc. N/B: Refer to Teacher Manual for other pedagogical exemplars iii. Key Assessment Level 1: Identify market distribution outlets for poultry eggs and meat Level 2: Explain the, etc.	
--	--	---	--

	<i>marketing poultry meat, eggs and products</i> • <i>Level 4: Design a questionnaire on consumer preferences, market trends, competition, and pricing for poultry meats and eggs, etc, etc.</i> <i>d) Agriculture Science (Week 16)</i> <i>i. Learning tasks</i> • <i>Outline the various types of land tenure system</i> • <i>Explain the types and factors that affect land tenure system</i> • <i>Discuss the legal frameworks and regulations governing statutory land tenure, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: In mixed-gender groups, learners surf for information from the internet on land tenure systems. They then discuss their findings taking into consideration the meaning, types, factors, and legal issues governing land tenure system in class. The teacher should help learners with suitable website links, that they can access the information needed for discussion. The teacher should monitor learners not to veer into unapproved sites. The teacher should ensure</i>	<i>d) Agricultural Science (Week 16)</i> <i>i. Learning tasks</i> <i>Outline the various types of land tenure system, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: In mixed-gender groups, learners surf for information from the internet on land tenure systems. They then discuss their findings taking into consideration the meaning, types, factors, and legal issues governing land tenure system in class. The teacher should help learners with suitable website links, that they can access the information needed for discussion. The teacher should monitor learners not to veer into unapproved sites. The teacher should ensure</i>	
--	--	--	--

	<i>that all learners fully participate in the activity. Confident learners should be given leading roles in discussing their findings, etc.</i> <i>iii. Key Assessments</i> <i>• Level 1: Define land tenure system</i> <i>• Level 2: Discuss the types and factors that affect land tenure system</i> <i>• Level 3: Evaluate the effectiveness of customary land tenure systems in promoting sustainable land use and conservation</i> <i>• Level 4: How can policymakers strike a balance between preserving cultural norms and modernising land governance? etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 15 and 16. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	<i>that all learners fully participate in the activity. Confident learners should be given leading roles in discussing their findings, etc.</i> <i>iii. Key Assessments</i> <i>Level 1: Define land tenure system, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 15 and 16. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same	3.1 Exchange one of your learning plans with a colleague in the same	10 mins

Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: ● Reflecting on what has been learned in the session. ● Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 17 and 18 of the teacher manuals ahead of time and the DPLC	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 17 and 18 of the teacher manuals ahead of time and the DPLC	10mins

	Handbook Session 10 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	Handbook Session 10 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	
--	--	---	--

DPLC Session 10: Developing learning plans for Weeks 17 and 18

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 9, <i>developing learning plans for Weeks 15 and 16</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 9, <i>developing learning plans for Weeks 15 and 16</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 9, <i>developing learning plans for Weeks 15 and 16</i>, 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 learned in DPLC Session 9, <i>developing learning plans for Weeks 15 and 16</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be completed per session)	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 17 and 18. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 17 and 18. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

	<i>a) Agriculture (Week 17)</i> <i>Examine and discuss the composition of soil and their importance</i> <i>b) Agriculture (Week 18)</i> <i>Meaning and effects of climate change on food production and their mitigating strategies</i> <i>c) Agricultural Science (Week 17)</i> <i>Challenges in customary and statutory land tenure systems</i> <i>d) Agricultural Science (Week 18)</i> <i>Economic importance of selected vegetable crops and ornamental plants to the farmer and the nation</i> LO 1: Develop subject-specific learning plans for teaching Weeks 17 and 18 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 17 and 18 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks	<i>a) Agriculture (Week 17)</i> <i>Examine and discuss the composition of soil and their importance</i> <i>b) Agriculture (Week 18)</i> <i>Meaning and effects of climate change on food production and their mitigating strategies</i> <i>c) Agricultural Science (Week 17)</i> <i>Challenges in customary and statutory land tenure systems</i> <i>d) Agricultural Science (Week 18)</i> <i>Economic importance of selected vegetable crops and ornamental plants to the farmer and the nation</i> LO 1: Develop subject-specific learning plans for teaching Weeks 17 and 18 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 17 and 18 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks	
--	--	--	--

	17 and 18 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 17 and 18 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 17 and 18 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 17 and 18 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 17 and 18. (NTS 1a, 2c, 2f and 3d-3g).	17 and 18 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 17 and 18 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 17 and 18 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 17 and 18 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 17 and 18 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g).	
--	--	---	--

	2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 17 and 18 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 17)</i> <i>i. How will the understanding gained by individuals on importance of soil composition be used to improve nutrient content, pH level, and physical properties of the soil?</i> <i>ii. What appropriate resources can be used in teaching and learning the composition of soil to promote a fertile and healthy soil environment?</i> <i>iii. How can individuals use the knowledge gained on the various composition of soil to determine the suitability of different crops for specific soil types and implement appropriate soil management practices? etc.</i> <i>b) Agriculture (Week 18)</i> <i>i. What appropriate resources can be used in the teaching and learning of the effects of climate change on food production to promote climate-resilient techniques such as</i>	2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 17 and 18 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 17)</i> <i>How will the understanding gained by individuals on importance of soil composition be used to improve nutrient content, pH level, and physical properties of the soil? etc.</i> <i>b) Agriculture (Week 18)</i> <i>What appropriate resources can be used in the teaching and learning of the effects of climate change on food production to promote climate-resilient techniques such as</i>	
--	---	---	--

	<i>growing climate smart crop varieties and animal breeds?</i> <i>ii. How will the understanding gained by individuals on the effects of climate change on food security help them to contribute towards climate mitigation strategies?</i> <i>iii. What connections can be made between food production and food security to help ensure stable and abundant food supply? etc.</i> <i>c) Agricultural Science (Week 17)</i> <i>i. What resources can be used in the teaching and learning of the challenges in the customary and statutory land tenure systems to prevent litigation and resolve land disputes?</i> <i>ii. How will individuals use the understanding of the challenges in customary and statutory land tenure systems to improve land administration and address issues of land encroachment?</i> <i>iii. What connections can be made between resolving challenges of customary and statutory land tenure systems to promote fairness,</i>	<i>growing climate smart crop varieties and animal breeds? etc.</i> <i>c) Agricultural Science (Week 17)</i> <i>What resources can be used in the teaching and learning of the challenges in the customary and statutory land tenure systems to prevent litigation and resolve land disputes? their production? etc.</i>	
--	--	---	--

	<i>transparency and sustainable land governance? etc.</i> <i>d) Agricultural Science (Week 18)</i> <i>i. What appropriate resources can be used for teaching and learning of the economic importance of vegetable crops and ornamental plants to assist individuals to venture into their production for profit?</i> <i>ii. How will the knowledge gained by individuals on the economic importance of ornamental plants help create employment and generate revenue?</i> <i>iii. What connection can be made between the classification and economic importance of vegetable crops to promote healthy diets and ensure food security, etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i>	<i>d) Agricultural Science (Week 18)</i> <i>What appropriate resources can be used for teaching and learning of the economic importance of vegetable crops and ornamental plants to assist individuals to venture into their production for profit, etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i>	
--	--	--	--

	<i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 17)</i> <i>i. Learning Tasks</i> <i>• List the composition of soil</i> <i>• Describe the compositions of soil</i> <i>• Discuss the importance of the compositions of soil in agricultural production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners examine soil samples provided and share their thoughts with their peers on the composition of the soil. Learners then surf the internet for information on the soil composition and discuss their findings with their peers. The teacher should support learners to identify the various composition of the soil. Learners should also be monitored not to play with the soil samples provided. The teacher should monitor and guide learners when they are using the internet, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1 List at least three (3) composition of a garden soil</i>	<i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 17)</i> <i>i. Learning Tasks</i> <i>List the composition of soil, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners examine soil samples provided and share their thoughts with their peers on the composition of the soil. Learners then surf the internet for information on the soil composition and discuss their findings with their peers. The teacher should support learners to identify the various composition of the soil. Learners should also be monitored not to play with the soil samples provided. The teacher should monitor and guide learners when they are using the internet, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1 List at least three (3) composition of a garden soil, etc.</i>	
--	---	---	--

	• <i>Level 2: Discuss at least three (3) importance of the composition of soil in Agricultural production</i> • <i>Level 3: Analyse the composition of a given soil sample</i> • <i>Level 4: Present a report on the composition of soil samples from different positions on the school garden, etc.</i> <i>b) Agriculture (Week 18)</i> <i>i. Learning Tasks</i> • <i>Explain the meaning of climate change in agricultural production</i> • <i>Discuss the effect of climate change on agricultural production</i> • <i>Discuss on how the impact of climate change on food production can be minimised, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners watch short documentaries, videos or pictures on climate change and discuss the meaning, effect and mitigation strategies in mixed-ability groups. Learners should be assisted to identify the meaning, effect and mitigating strategies when they are watching the documentaries, video or pictures. The teacher should allow learners either to define climate change, provide explanations, or discuss</i>	<i>b) Agriculture (Week 18)</i> <i>i. Learning Tasks</i> <i>Explain the meaning of climate change in agricultural production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners watch short documentaries, videos or pictures on climate change and discuss the meaning, effect and mitigation strategies in mixed-ability groups. Learners should be assisted to identify the meaning, effect and mitigating strategies when they are watching the documentaries, video or pictures. The teacher should allow learners either to define climate change, provide explanations, or discuss</i>	
--	---	---	--

	<i>the impact and how to minimise it depending on the capability of learners. Learners with visual and hearing changes should be provided with the needed support, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>• Level 1: Define climate change</i> <i>• Level 2: State three (3) effects of climate change on food production</i> <i>• Level 3: Discuss how climate change is affecting food production</i> <i>• Level 4: Discuss at least three (3) effects of climate change on food production and suggest how they can be mitigated, etc.</i> <i>c) Agriculture Science (Week 17)</i> <i>i. Learning Tasks</i> <i>• Outline the challenges of land tenure system</i> <i>• Explain the challenges of land tenure systems</i> <i>• Evaluate the impact of land tenure system on the society, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners watch short documentaries or videos on land tenure systems and discuss the challenges and impact of land tenure</i>	<i>the impact and how to minimise it depending on the capability of learners. Learners with visual and hearing changes should be provided with the needed support, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: Define climate change, etc.</i> <i>c) Agricultural Science (Week 17)</i> <i>i. Learning Tasks</i> <i>Outline the challenges of land tenure system, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners watch short documentaries or videos on land tenure systems and discuss the challenges and impact of land tenure</i>	
--	---	---	--

	<i>systems on agriculture and the society in mixed-ability groups. Learners should be assisted to identify the challenges and impacts of land tenure system when they are watching the documentaries or video. The teacher should allow learners either to list the challenges, provide explanations or discuss the impact of land tenure system on the society based on their interest and ability. Learners with visual and hearing changes should be provided with the needed support, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: List the challenges of land tenure system</i> <i>• Level 2: Discuss the challenges of land tenure systems</i> <i>• Level 3: Evaluate the socio-economic consequences of land disputes arising from overlapping customary land tenure systems, how can such disputes hinder local development and exacerbate social tensions within communities?</i> <i>• Level 4: Analyse the impact of insecure land rights on communities living under customary</i>	<i>systems on agriculture and the society in mixed-ability groups. Learners should be assisted to identify the challenges and impacts of land tenure system when they are watching the documentaries or video. The teacher should allow learners either to list the challenges, provide explanations or discuss the impact of land tenure system on the society based on their interest and ability. Learners with visual and hearing changes should be provided with the needed support, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: List the challenges of land tenure system, etc.</i>	
--	---	--	--

	<i>land tenure systems. How does this challenge affect land use decisions, investment opportunities, and social cohesion within the community? etc.</i> <i>d) Agriculture Science (Week 18)</i> <i>i. Learning task:</i> <i>• List the economic importance of selected vegetable crops and ornamental plants</i> <i>• Explain the economic importance of selected vegetable crops and ornamental plants</i> <i>• Evaluate the impact of selected vegetable crops and ornamental plants on the farmer and nation, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners individually examine the economic importance of vegetable crops and ornamental plants and share their thoughts with their peers. Learners also surf the internet for information on the economic importance and impact vegetable crops and ornamental plants on the farmer and nation and discuss their findings with their peers. The teacher should support learners to identify the importance and impact of vegetable crops and ornamental plants to the society. The teacher should monitor</i>	<i>d) Agricultural Science (Week 18)</i> <i>i. Learning task:</i> <i>List the economic importance of selected vegetable crops and ornamental plants, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners individually examine the economic importance of vegetable crops and ornamental plants and share their thoughts with their peers. Learners also surf the internet for information on the economic importance and impact vegetable crops and ornamental plants on the farmer and nation and discuss their findings with their peers. The teacher should support learners to identify the importance and impact of vegetable crops and ornamental plants to the society. The teacher should monitor</i>	
--	--	--	--

	<i>and guide learners when they are using the internet, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: State the importance of vegetable crops and ornamental plants</i> <i>• Level 2: Discuss the economic importance of selected vegetable crops and ornamental plants</i> <i>• Level 3: Compare the economic outcomes of vegetable crops to ornamental plants, considering factors like yield, input costs, and market acceptance.</i> <i>• Level 4: Analyse the impact of pepper production to the economy of Ghana, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 17 and 18. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to	<i>and guide learners when they are using the internet, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: State the importance of vegetable crops and ornamental plants, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 17 and 18. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to	
--	--	---	--

	cater for all learners (NTS 3a, 3e-3g and 3k).	cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	10mins

4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 19 and 20 of the teacher manuals ahead of time and the DPLC Handbook Session 11 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 19 and 20 of the teacher manuals ahead of time and the DPLC Handbook Session 11 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins
--	--	---	---------------

DPLC Session 11: Developing learning plans for Weeks 19 and 20			
<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 10, <i>developing learning plans for Weeks 17 and 18</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 10, <i>developing learning plans for Weeks 17 and 18</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 10, <i>developing learning plans for Weeks 17 and 18</i>, 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 learned in DPLC Session 10, <i>developing learning plans for Weeks 17 and 18</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 19 and 20. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 19 and 20. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60 mins

completed per session)	<i>a) Agriculture (Week 19)</i> <i>i. Meaning and importance of farm hygiene and sanitation in crop production</i> <i>ii. Farm hygiene and sanitation activities in crop production</i> <i>iii. Application of farm hygiene and sanitation in crop production</i> <i>b) Agriculture (Week 20)</i> <i>i. Meaning and importance of farm hygiene and sanitation in animal production</i> <i>ii. Farm hygiene and sanitation activities in animal production</i> <i>iii. Application of farm hygiene and sanitation in animal production</i> <i>c) Agricultural Science (Week 19)</i> <i>Transfer of agricultural technology</i> <i>d) Agricultural Science (Week 20)</i> <i>Causes of climate change and their relationship with current world disasters</i> LO 1: Develop subject-specific learning plans for teaching Weeks 19 and 20 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and	<i>a) Agriculture (Week 19)</i> <i>i. Meaning and importance of farm hygiene and sanitation in crop production</i> <i>ii. Farm hygiene and sanitation activities in crop production</i> <i>iii. Application of farm hygiene and sanitation in crop production</i> <i>b) Agriculture (Week 20)</i> <i>i. Meaning and importance of farm hygiene and sanitation in animal production</i> <i>ii. Farm hygiene and sanitation activities in animal production</i> <i>iii. Application of farm hygiene and sanitation in animal production</i> <i>c) Agricultural Science (Week 19)</i> <i>Transfer of agricultural technology</i> <i>d) Agricultural Science (Week 20)</i> <i>Causes of climate change and their relationship with current world disasters</i> LO 1: Develop subject-specific learning plans for teaching Weeks 19 and 20 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k).	
--------------------------------------	--	---	--

	other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 19 and 20 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 19 and 20 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 19 and 20 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plans for Weeks 19 and 20 in line with the LOs, LIs and key concepts in the teacher manual.	L1.1 Discuss the important aspects in Weeks 19 and 20 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 19 and 20 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 19 and 20 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plans for Weeks 19 and 20 in line with the LOs, LIs and key concepts in the teacher manual.	
--	---	---	--

	LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 19 and 20 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 19 and 20. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 19 and 20 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 19)</i> <i>i. How will the knowledge gained by individuals in the meaning and importance of farm hygiene and sanitation boosts their interest in crop production and help them to observe personal hygiene?</i> <i>iii. What connections can learners make between farm hygiene and sanitation in the management of crop production?</i> <i>iii. How can learners apply the knowledge gained on farm hygiene and sanitation to produce</i>	LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 19 and 20 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 19 and 20 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 19 and 20 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 19)</i> <i>How will the knowledge gained by individuals in the meaning and importance of farm hygiene and sanitation boosts their interest in crop production and help them to observe personal hygiene? etc.</i>	
--	---	--	--

	<i>healthy and quality food crops for human consumption? etc.</i> <i>b) Agriculture (Week 20)</i> <i>i. How will the knowledge gained by individuals in the meaning and importance of farm hygiene and sanitation boosts their interest in animal production and help them to observe personal hygiene?</i> <i>ii. What connections can individuals make between farm hygiene and sanitation in the management of animal production?</i> <i>iii. How can individuals apply the knowledge gained on farm hygiene and sanitation to produce healthy and quality meat for human consumption? etc.</i> <i>c) Agricultural Science (Week 19)</i> <i>i. How can the understanding of transfer-of-technology approaches assist individuals in analysing and processing feedback from an extension officer?</i> <i>ii. How can individuals use the knowledge gained in agricultural extension delivery approaches and methods in the application of modern technologies and farm management practices?</i>	<i>b) Agriculture (Week 20)</i> <i>How will the knowledge gained by individuals in the meaning and importance of farm hygiene and sanitation boosts their interest in animal production and help them to observe personal hygiene? etc.</i> <i>c) Agricultural Science (Week 19)</i> <i>How can the understanding of transfer-of-technology approaches assist individuals in analysing and processing feedback from an extension officer? etc.</i>	
--	--	--	--

	<i>iii. What connections can be made between transfer-of-technology approaches and the utilization of digital technologies in delivering online extension services to farmers? etc.</i> <i>d) Agricultural Science (Week 20)</i> <i>i. How will the teaching and learning of the concept of climate change and its impacts enable learners to use scientific information to make informed decision in mitigating climate change?</i> <i>ii. How can individuals' knowledge and understanding of the causes of current world disasters empower them to apply indigenous strategies like traditional ecological knowledge, traditional farming practices and others to address climate change and variability?</i> <i>iii. What connections can be made between ICT and other communication platforms to educate the public on measures to mitigate air and water pollution, and address land degradation? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1	<i>d) Agricultural Science (Week 20)</i> <i>How will the teaching and learning of the concept of climate change and its impacts enable learners to use scientific information to make informed decision in mitigating climate change? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1	
--	---	---	--

	and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 19)</i> <i>i. Learning Tasks</i> • <i>Define farm hygiene and sanitation in crop production and list their importance</i> • <i>Describe the farm hygiene and sanitation activities in crop production</i> • <i>Learners demonstrate or apply farm hygiene and sanitation principles in crop production activities, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners in gender-ability groups visit a nearby crop farm to observe or watch videos/pictures on farm hygiene and sanitation activities that are carried out on the field. From the visit or watched video, learners are assisted to explain farm hygiene and sanitation as well as their</i>	and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 19)</i> <i>i. Learning Tasks</i> <i>Define farm hygiene and sanitation in crop production and list their importance, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Experiential learning: Learners in gender-ability groups visit a nearby crop farm to observe or watch videos/pictures on farm hygiene and sanitation activities that are carried out on the field. From the visit or watched video, learners are assisted to explain farm hygiene and sanitation as well as their</i>	
--	---	--	--

	<i>importance. Learners pay a short visit to the school farm/garden or compound and practice simple farm hygiene and sanitation activities such as weeding or weeding picking. Learners should be encouraged to take part in all activities, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: What is farm hygiene and sanitation in crop production?</i> <i>• Level 2: Explain two (2) importance and effects of farm hygiene at the farm in crop production</i> <i>• Level 3: Sequentially describe how a named farm hygiene and sanitation activity is carried out</i> <i>• Level 4: Discuss the impact of farm hygiene and sanitation on crop yield, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 19)</i> <i>b) Agriculture (Week 20)</i> <i>i. Learning Tasks</i> <i>• Learners compare and contrast farm hygiene and sanitation in animal production</i> <i>• Describe the farm hygiene and sanitation activities in animal production</i>	<i>importance. Learners pay a short visit to the school farm/garden or compound and practice simple farm hygiene and sanitation activities such as weeding or weeding picking. Learners should be encouraged to take part in all activities, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: What is farm hygiene and sanitation in crop production? etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 19)</i> <i>b) Agriculture (Week 20)</i> <i>i. Learning Tasks</i> <i>Learners compare and contrast farm hygiene and sanitation in animal production, etc.</i>	
--	--	---	--

	• <i>Learners demonstrate or apply farm hygiene and sanitation principles in animal production activities, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: Brainstorm learners to come up with the meaning of farm hygiene</i> <i>The teacher should put learners in mixed-ability groups to brainstorm and come up with the meaning and difference between farm hygiene and sanitation. Learners also surf the internet for information on farm hygiene and sanitation activities in animal production and how they are carried out. Learners share their ideas with the whole class. Teacher should assist learners with difficulties with leading questions, that will help them to come up with the definition and difference between farm hygiene and sanitation. Learners who can give further details should be encouraged to do so, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: Differentiate between farm hygiene and sanitation in animal production</i>	<i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: Brainstorm learners to come up with the meaning of farm hygiene</i> <i>The teacher should put learners in mixed-ability groups to brainstorm and come up with the meaning and difference between farm hygiene and sanitation. Learners also surf the internet for information on farm hygiene and sanitation activities in animal production and how they are carried out. Learners share their ideas with the whole class. Teacher should assist learners with difficulties with leading questions, that will help them to come up with the definition and difference between farm hygiene and sanitation. Learners who can give further details should be encouraged to do so, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: Differentiate between farm hygiene and sanitation in animal production</i>	
--	---	---	--

	• <i>Level 2: Explain two (2) important aspects of maintaining good hygiene at the animal farm</i> • <i>Level 3: Why will you advocate for farm hygiene and sanitation in animal production?</i> • <i>Level 4: Discuss the impact of farm hygiene and sanitation on animal health and reproduction, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 20)</i> <i>c) Agricultural Science (Week 19)</i> <i>i. Learning Tasks</i> • <i>Define technology transfer in agriculture</i> • <i>Explain the technology transfer methods used in agriculture</i> • <i>Discuss how to use the various components of technology transfer to improve agriculture production, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Structuring talk for learning: Learners in mixed-ability groups brainstorm to come up with the meaning and methods of technology transfer in agriculture and discuss it in their groups. The teacher should assist learners with leading questions to come up with the meaning and methods technology transfer in</i>	<i>N/B: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 20)</i> <i>c) Agricultural Science (Week 19)</i> <i>i. Learning Tasks</i> <i>Define technology transfer in agriculture, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Structuring talk for learning: Learners in mixed-ability groups brainstorm to come up with the meaning and methods of technology transfer in agriculture and discuss it in their groups. The teacher should assist learners with leading questions to come up with the meaning and methods technology transfer in</i>	
--	---	--	--

	<i>agriculture. Learners then watch a video on various technological transfer methods and how they are employed in agriculture. Learners with visual and hearing aids should be supported to benefit from the video. All learners should be encouraged to take part in all activities, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: What is technology transfer in agriculture?</i> <i>• Level 2: Examine accessibility of participatory extension services delivery</i> <i>• Level 3: Write short notes on key components of selected transfer of technology approaches</i> <i>• Level 4: Evaluate effects of participatory extension services delivery on production and marketing of vegetable crop and ornamental plant enterprises, etc.</i> <i>d) Agricultural Science (Week 20)</i> <i>i. Learning Tasks</i> <i>• Define climate change and its associated terms</i> <i>• Explain the causes of climate change and its associated terms</i>	<i>agriculture. Learners then watch a video on various technological transfer methods and how they are employed in agriculture. Learners with visual and hearing aids should be supported to benefit from the video. All learners should be encouraged to take part in all activities, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: What is technology transfer in agriculture? etc.</i> <i>d) Agricultural Science (Week 20)</i> <i>i. Learning Tasks</i> <i>Define climate change and its associated terms etc.</i>	
--	---	--	--

	• <i>Discuss the causes of climate change and their relationship with current world disasters, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: In mixed-gender groups, learners surf for information from the internet on climate change, its associated terms and their relationship with current world disasters. Learners then discuss their findings in class. The teacher should help learners with suitable website links, that they can access the information needed for discussion. The teacher should monitor learners not to veer into unapproved sites. The teacher should ensure that all learners fully participate in the activity. Confident learners should be given leading roles in discussing their findings, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: What is climate change</i> • <i>Level 2: Discuss the causes of climate change</i> • <i>Level 3: Discuss the socio-economic factors that amplify the impact of climate-related disasters</i> • <i>Level 4: How does climate change</i>	<i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: In mixed-gender groups, learners surf for information from the internet on climate change, its associated terms and their relationship with current world disasters. Learners then discuss their findings in class. The teacher should help learners with suitable website links, that they can access the information needed for discussion. The teacher should monitor learners not to veer into unapproved sites. The teacher should ensure that all learners fully participate in the activity. Confident learners should be given leading roles in discussing their findings, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: What is climate change, etc.</i>	
--	--	---	--

	<i>disproportionately affect vulnerable communities and developing nations? etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 19 and 20. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	2.5 In your subject groups or individually, complete learning planners for Weeks 19 and 20. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i>	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i>	10mins

	<i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	<i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 21 and 22 of the teacher manuals ahead of time and the DPLC Handbook Session 12 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 21 and 22 of the teacher manuals ahead of time and the DPLC Handbook Session 12 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins

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

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 11, <i>developing learning plans for Weeks 19 and 20</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 11, <i>developing learning plans for Weeks 19 and 20</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 11, <i>developing learning plans for Weeks 19 and 20</i>, 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 learned in DPLC Session 11, <i>developing learning plans for Weeks 19 and 20</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 21 and 22. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 21 and 22. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60 mins

completed per session)	<i>a) Agriculture (Week 21)</i> <i>i. Meaning and importance of agriculture economics</i> <i>ii. Farm as economic unit</i> <i>iii. Application of the principles of agriculture economics</i> <i>b) Agriculture (Week 22)</i> <i>i. Meaning and importance of agriculture communication</i> <i>ii. Strategies for effective communication in agriculture</i> <i>c) Agricultural Science (Week 21)</i> <i>Consequences of climate change on crop yield</i> <i>d) Agricultural Science (Week 22)</i> <i>Strategies for dealing with climate change and variability</i> LO 1: Develop subject-specific learning plans for teaching Weeks 21 and 22 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 21 and 22 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and	<i>a) Agriculture (Week 21)</i> <i>i. Meaning and importance of agriculture economics</i> <i>ii. Farm as economic unit</i> <i>iii. Application of the principles of agriculture economics</i> <i>b) Agriculture (Week 22)</i> <i>i. Meaning and importance of agriculture communication</i> <i>ii. Strategies for effective communication in agriculture</i> <i>c) Agricultural Science (Week 21)</i> <i>Consequences of climate change on crop yield</i> <i>d) Agricultural Science (Week 22)</i> <i>Strategies for dealing with climate change and variability</i> LO 1: Develop subject-specific learning plans for teaching Weeks 21 and 22 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 21 and 22 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and	
--------------------------------------	--	--	--

	assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 21 and 22 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 21 and 22 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 21 and 22 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 21 and 22 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and	assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 21 and 22 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources, pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 21 and 22 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 21 and 22 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 21 and 22 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 21 and	
--	--	---	--

	pedagogical exemplars for their subjects in Weeks 21 and 22. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 21 and 22 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 21)</i> <i>i. How will individuals understanding of the basic principles of agricultural economics assist them in analysing the economic aspects of agricultural production, consumption, and distribution within their business enterprises?</i> <i>ii. How will the knowledge acquired on the meaning and importance of basic principles of agricultural economics enable individuals recognise and embrace farming as an economic unit or agricultural business?</i> <i>iii. What connection can be made between the basic principles of agricultural economics and the principle of running an agribusiness? etc.</i> <i>b) Agriculture (Week 22)</i> <i>i. What appropriate resources can be used for effective teaching and learning of</i>	22 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 21 and 22 (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>E.g.</i> <i>a) Agriculture (Week 21)</i> <i>How will individuals understanding of the basic principles of agricultural economics assist them in analysing the economic aspects of agricultural production, consumption, and distribution within their business enterprises? etc.</i> <i>b) Agriculture (Week 22)</i> <i>What appropriate resources can be used for effective teaching and learning of agricultural</i>	
--	--	---	--

	<i>agricultural communication to enable individuals acquire the requisite communication skills?</i> <i>ii. How can the knowledge of the meaning of agricultural communication empower individuals to understand, disseminate agricultural information, educate and engage with farmers, policy makers, researchers, consumers and the public?</i> <i>iii. What connection can be made between the importance of agricultural communication and individuals' ability to apply their communication skills and knowledge in ICT for the purpose of promoting and advertising their agricultural products? etc.</i> <i>c) Agricultural Science (Week 21)</i> <i>i. How will the teaching and learning of the concept of climate change and its impact on agriculture foster positive habits in individuals, encouraging them to create lawns, cultivate shrubs, trees, and orchards for soil erosion control, air</i>	<i>communication to enable individuals acquire the requisite communication skills? etc.</i> <i>c) Agricultural Science (Week 21)</i> <i>How will the teaching and learning of the concept of climate change and its impact on agriculture foster positive habits in individuals, encouraging them to create lawns, cultivate shrubs, trees, and orchards for soil erosion control, air purification, carbon reduction,</i>	
--	--	---	--

	<i>purification, carbon reduction, environmental beautification and ecosystem protection?</i> <i>ii. What connections can be established between the rising occurrences of drought, pestilence, and declining crop yields in agriculture?</i> <i>iii. How can the knowledge and understanding of climate change adaptation and its importance in sustainable rural agriculture empower individuals to effectively blend indigenous and conventional strategies for addressing the challenges that arise? etc.</i> <i>d) Agricultural Science (Week 22)</i> <i>i. How can the understanding of climate change adaptation enable individuals to work towards promoting soil health, water usage and other positive environment activities in their local communities?</i> <i>ii. What resources can be used for teaching and learning to assist individuals buy into sustainable agriculture to enhance food production?</i>	<i>environmental beautification and ecosystem protection? etc.</i> <i>d) Agricultural Science (Week 22)</i> <i>How can the understanding of climate change adaptation enable individuals to work towards promoting soil health, water usage and other positive environment activities in their local communities? etc.</i>	
--	--	---	--

	<i>iii. How can individuals apply their knowledge of renewable energy sources to decrease greenhouse gas emissions and contribute to reducing organic and plastic wastes through recycling? etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> a) Agriculture (Week 21) i. Learning Tasks • <i>Explain the meaning and importance of the basic principles of agricultural economics</i> • <i>Discuss the farm as an economic unit</i> • <i>Demonstrate or apply the principles of agricultural economics in the management of an agricultural enterprise, etc.</i>	2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> a) Agriculture (Week 21) i. Learning Tasks <i>Explain the meaning and importance of the basic principles of agricultural economics, etc.</i>	
--	--	--	--

	<i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: In mixed-gender groups, learners surf for information from the internet on agricultural economics, it's application and the farm as an economic unit. They then discuss their findings in class. The teacher should help learners with suitable website links, that they can access the information needed for discussion. The teacher should monitor learners not to veer into unapproved sites. The teacher should ensure that all learners fully participate in the activity. Confident learners should be given leading roles in discussing their findings, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> • <i>Level 1: Define agricultural economics</i> • <i>Level 2: Describe two (2) important aspects of agricultural economics</i> • <i>Level 3: Convince a farmer to visualize farming as an economic unit</i> • <i>Level 4: How will you harness the factors that affect agricultural economics to increase food production? etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2</i>	<i>ii. Pedagogical Exemplars</i> <i>Inquiry-based learning: In mixed-gender groups, learners surf for information from the internet on agricultural economics, it's application and the farm as an economic unit. They then discuss their findings in class. The teacher should help learners with suitable website links, that they can access the information needed for discussion. The teacher should monitor learners not to veer into unapproved sites. The teacher should ensure that all learners fully participate in the activity. Confident learners should be given leading roles in discussing their findings, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessment</i> <i>Level 1: Define agricultural economics, etc.</i> <i>N/B: Refer to the Teacher Manual for focal areas 2</i>	
--	---	---	--

	<i>and 3 for Agriculture (Week 21)</i> <i>b) Agriculture (Week 22)</i> <i>i. Learning Tasks</i> • <i>Define agricultural communication</i> • <i>Explain the importance of agricultural communication</i> • <i>Discuss the strategies for effective communication, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Building on what others say: Learners work in pairs to bring out the meaning, branches and importance of communication as well as strategies or effective communication after watching a video or documentary on agricultural communication. Learners discuss their observations and ideas by building on what their peer has said. Teacher should guide learners with difficulties with leading questions that will help them to come up with the meaning, branches, importance and strategies for effective communication. The teacher should ensure that each student take active part in the discussion, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i>	<i>and 3 for Agriculture (Week 21)</i> <i>b) Agriculture (Week 22)</i> <i>i. Learning Tasks</i> <i>Define agricultural communication, etc.</i> <i>ii. Pedagogical Exemplaires</i> <i>Building on what others say: Learners work in pairs to bring out the meaning, branches and importance of communication as well as strategies or effective communication after watching a video or documentary on agricultural communication. Learners discuss their observations and ideas by building on what their peer has said. Teacher should guide learners with difficulties with leading questions that will help them to come up with the meaning, branches, importance and strategies for effective communication. The teacher should ensure that each student take active part in the discussion, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i>	
--	--	---	--

	<i>iii. Key Assessments</i> • <i>Level 1: Outline the branches of agricultural communication</i> • <i>Level 2: Explain the meaning of Agricultural communication</i> • <i>Level 3: Justify the application of communication in agriculture</i> • <i>Level 4: How can communication bring about innovations and increase food production in agriculture? etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 22)</i> <i>c) Agricultural Science (Week 21)</i> <i>i. Learning Tasks</i> • <i>List the consequences of climate change on crop yield</i> • <i>Explain the consequences of climate change on crop yield</i> • <i>Discuss the policies associated with climate change, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Problem-based learning: Teacher put learners in mixed ability groups and challenge them to find out the consequences of climate change on crop yield and the policies associated with climate change via internet search. Learners then make a presentation on consequences and policies</i>	<i>iii. Key Assessments</i> <i>Level 1: Outline the branches of agricultural communication, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 22)</i> <i>c) Agricultural Science (Week 21)</i> <i>i. Learning Tasks</i> <i>List the consequences of climate change on crop yield, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Problem-based learning: Teacher put learners in mixed ability groups and challenge them to find out the consequences of climate change on crop yield and the policies associated with climate change via internet search. Learners then make a presentation on consequences and policies</i>	
--	---	---	--

	<i>associated with climate change at a plenary session in class. All learners should be encouraged to take part in the presentation. The teacher should monitor learners to ensure that they use the right websites. Where necessary, the teacher should support learners when the right websites.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: Outline the consequences of climate change on crop yield</i> • <i>Level 2: Explain the consequences of climate change on crop yield</i> • <i>Level 3: Analyse the cascading effects of increasing drought, pestilence, and decreasing crop yields on local communities and global food systems</i> • <i>Level 4: How do policies and international collaborations play a role in building resilience and adapting to the challenges faced by farmers? etc.</i> <i>d) Agricultural Science (Week 22)</i> <i>i. Learning Tasks</i> • <i>Outline the strategies for combating climate change</i>	<i>associated with climate change at a plenary session in class. All learners should be encouraged to take part in the presentation. The teacher should monitor learners to ensure that they use the right websites. Where necessary, the teacher should support learners when the right websites.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: Outline the consequences of climate change on crop yield, etc.</i> <i>d) Agricultural Science (Week 22)</i> <i>i. Learning Tasks</i> <i>Outline the strategies for combating climate change, etc.</i>	
--	--	---	--

	• Differentiate between climate change and climate change variability • Discuss the strategies for combating climate change, etc. ii. Pedagogical Exemplars <i>Building on what others say: Learners work in pairs to differentiate between climate change and climate variability as well as discuss the strategies for combating climate change after watching a video or documentary on climate change. Learners discuss their observations and ideas by building on what their peer has said. Teacher should guide learners with difficulties with leading questions that will help them to come up with the meaning of climate change and climate variability, and climate change mitigating strategies. The teacher should ensure that each student take active part in the discussion. The teacher can also show pictures on climate change to those who will require that, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> iii. Key Assessment • Level 1: State the difference between climate change and	ii. Pedagogical Exemplars <i>Building on what others say: Learners work in pairs to differentiate between climate change and climate variability as well as discuss the strategies for combating climate change after watching a video or documentary on climate change. Learners discuss their observations and ideas by building on what their peer has said. Teacher should guide learners with difficulties with leading questions that will help them to come up with the meaning of climate change and climate variability, and climate change mitigating strategies. The teacher should ensure that each student take active part in the discussion. The teacher can also show pictures on climate change to those who will require that, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> iii. Key Assessment <i>Level 1: State the difference between climate change and</i>	
--	---	--	--

	<i>climate change variability</i> • <i>Level 2: Explain the strategies for combating climate change</i> • <i>Level 3: Evaluate the effectiveness of carbon pricing as a strategy to reduce greenhouse gas emissions</i> • <i>Level 4: Explain how renewable energy sources like solar and wind power can help reduce the impacts of climate change, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 21 and 22. Teachers should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	<i>climate change variability, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 21 and 22. It should include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g).	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g).	10mins

the templates provided.	<i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	<i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	
4. Reflection on the session: ● Reflecting on what has been learned in the session. ● Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 23 and 24 of the teacher manuals ahead of time and the DPLC Handbook Session 13 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 23 and 24 of the teacher manuals ahead of time and the DPLC Handbook Session 13 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins

DPLC Session 13: Developing learning plans for Weeks 23 and 24

<i>The sections below provide the frame for what is to be done in the session.</i>	Guidance notes on Leading the DPLC Session. <i>What the DPLC Coordinator will have to say during each stage of the session</i>	Guidance notes on Teacher Activity during the DPLC Session. <i>What teachers will do during each stage of the session</i>	Time in session
1. Introduction: Review of previous learning using ideas from the last DPLC session	1.1 Start the session by asking teachers to share two things they implemented based on the DPLC Session 12, <i>developing learning plans for Weeks 21 and 22</i>, which they think impacted learning positively (NTS 1a, 1b). 1.2 Ask teachers, as critical friends, to discuss why they think what a colleague did through the application of lessons learned in DPLC Session 12, <i>developing learning plans for Weeks 21 and 22</i>, supported learning (NTS 1a-1c).	1.1 Share two things you implemented based on DPLC Session 12, <i>developing learning plans for Weeks 21 and 22</i>, 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 learned in DPLC Session 12, <i>developing learning plans for Weeks 21 and 22</i>, supported learning (NTS 1a-1c).	10mins
2. Planning for teaching, learning and assessment activities, using the teacher manual to complete the learning planner, integrating GESI, SEL, ICT, differentiation, 21st century skills and national values (2 learning planners to be	2.1 Ask a teacher to read aloud the Purpose, Learning Outcomes (LOs), and Learning Indicators (LIs) for the session (NTS 1b). Purpose: The purpose of this session is to assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 23 and 24. Agricultural Science teachers will focus on developing learning plans for the following lessons:	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 assist teachers in the Agricultural Science Department in utilising the teacher manual to create learning plans for lessons during Weeks 23 and 24. Agricultural Science teachers will focus on developing learning plans for the following lessons:	60mins

completed per session)	<i>a) Agriculture (Week 23)</i> <i>i. Meaning and importance of agribusiness</i> <i>ii. Activities of agribusiness management</i> <i>b) Agriculture (Week 24)</i> <i>Procedure for writing an agribusiness plan</i> <i>c) Agricultural Science (Week 23)</i> <i>Effects of indigenous and conventional mitigation measures for combating climate change on agricultural production</i> LO 1: Develop subject-specific learning plans for teaching Weeks 23 and 24 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). LI 1.1 Discuss the important aspects in Weeks 23 and 24 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 23 and 24 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources,	<i>a) Agriculture (Week 23)</i> <i>i. Meaning and importance of agribusiness</i> <i>ii. Activities of agribusiness management</i> <i>b) Agriculture (Week 24)</i> <i>Procedure for writing an agribusiness plan</i> <i>c) Agricultural Science (Week 23)</i> <i>Effects of indigenous and conventional mitigation measures for combating climate change on agricultural production</i> LO 1: Develop subject-specific learning plans for teaching Weeks 23 and 24 lessons using the teacher manual, taking into account GESI, ICT, SEL, National Values and other cross-cutting issues (NTS 3a, 3e-3g and 3k). L1.1 Discuss the important aspects in Weeks 23 and 24 Agricultural Science Department lessons in the teacher manual including content standards, LOs, LIs, key concepts, GESI, pedagogical exemplars and assessment strategies, and relate it to the sections of the learning planner template. LI 1.2 Complete the learning planner templates for Weeks 23 and 24 Agricultural Science Department lessons taking into consideration cross-cutting issues, GESI responsive resources,	
--------------------------------------	--	--	--

	pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 23 and 24 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan for Weeks 23 and 24 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 23 and 24 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Ask teachers to refer to their teacher manual and read silently the content standards, LOs, LIs and pedagogical exemplars for their subjects in Weeks 23 and 24. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Ask teachers to discuss at least two essential questions that will guide the lesson activities for Weeks 23 and 24 (NTS 1a, 2c, 2e, 2f and 3d-3g).	pedagogical exemplars and assessment strategies proposed in the teacher manual. LO 2: Review the learning plans for Weeks 23 and 24 of the subject-based Agricultural Science Department lessons (NTS 1a, 1b, 2b, 2c, 2e, 2f, 3a, 3d, 3e, 3g-3j and 3o). LI 2.1 Critique the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of learning plan for Weeks 23 and 24 in line with the LOs, LIs and key concepts in the teacher manual. LI 2.2 Implement the recommendations made by a peer reviewer to the learning plans for Weeks 23 and 24 in line with the LOs, LIs and key concepts in the teacher manual where appropriate. 2.2 Read silently the content standards, LOs, LIs and pedagogical exemplars for your subject in Weeks 23 and 24 in your teacher manual. (NTS 1a, 2c, 2f and 3d-3g). 2.3 Discuss at least two essential questions that will guide the lesson activities in Weeks 23 and 24 (NTS 1a, 2c, 2e, 2f and 3d-3g).	
--	---	---	--

	<i>E.g.</i> <i>a) Agriculture (Week 23)</i> <i>i. What appropriate resources can be used for teaching and learning agribusiness management to assist individuals in establishing short- and long-term goals for producing, processing and marketing of crops and animals?</i> <i>ii. How can the knowledge and understanding of agribusiness management activities aid individuals in determining production goals, optimizing resource allocation and planning for crops and livestock production as enterprise managers?</i> <i>iii. What connections can be made between the importance and management activities of agribusiness to inspire them to organize, establish and manage an affordable choice of agribusiness ventures on their own? etc.</i> <i>b) Agriculture (Week 24)</i> <i>i. How can the knowledge and understanding of the skills required for writing an agribusiness plan assist individuals in conducting a comprehensive market analysis, encompassing the identification of</i>	<i>E.g.</i> <i>a) Agriculture (Week 23)</i> <i>What appropriate resources can be used for teaching and learning agribusiness management to assist individuals in establishing short- and long-term goals for producing, processing and marketing of crops and animals? etc.</i> <i>b) Agriculture (Week 24)</i> <i>How can the knowledge and understanding of the skills required for writing an agribusiness plan assist individuals in conducting a comprehensive market analysis, encompassing the identification of target customers, their</i>	
--	---	--	--

	<i>target customers, their characteristics, preferences and agribusiness needs?</i> <i>ii. How can individuals demonstrate skills in crafting agribusiness plans for their own agribusiness ventures, as well as for national and international agribusinesses with a profit-oriented mindset?</i> <i>iii. What connections can be made between the procedures for creating an agribusiness plan and how it aids them in recognizing and adapting to market trends? etc.</i>	<i>characteristics, preferences, and agribusiness needs? etc.</i>	
	<i>c) Agricultural Science (Week 23)</i> <i>i. What connections can be established between the indigenous and conventional strategies of addressing climate change and increasing crop yields in agriculture?</i> <i>ii. How can the knowledge and understanding of climate change adaptation and its importance in sustainable rural agriculture empower individuals to effectively blend indigenous and conventional strategies for addressing the challenges that arise?</i>	<i>c) Agricultural Science (Week 23)</i> <i>What connections can be established between the indigenous and conventional strategies of addressing climate change and increasing crop yields in agriculture? etc.</i>	

	<i>iii. How do the indigenous strategies used by individuals help mitigate the impact of climate change on agricultural production, etc.</i> 2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 23)</i> <i>i. Learning Tasks</i> • <i>Define agricultural agribusiness management</i> • <i>Explain the importance of agribusiness management</i> • <i>Discuss the activities carried out in agribusiness management, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Problem-based learning: Teacher put learners in mixed ability groups and challenge them to find out the meaning, important</i>	2.4 Ask teachers to think, pair and share key notes on differentiation in Weeks 1 and 2 Agriculture and Agricultural Science that cater for the diverse needs of learners (NTS 1a, 2c, 2e, 2f and 3d-3g). <i>Hint: Activities for differentiation must focus on learning tasks, pedagogical exemplars and key assessments on the different levels of proficiency.</i> <i>N/B: Refer to the Teacher Manual for more examples of differentiation.</i> <i>E.g.</i> <i>a) Agriculture (Week 23)</i> <i>i. Learning Tasks</i> <i>Define agricultural agribusiness management, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Problem-based learning: Teacher put learners in mixed ability groups and challenge them to find out the meaning, important</i>	
--	--	---	--

	<i>and the activities involved in agribusiness management via internet search. Learners then make a presentation on how to convince a friend to choose a particular agribusiness enterprise. All learners should be encouraged to take part in the presentation. The teacher should monitor learners to ensure that they use the right websites. Where necessary, the teacher should support learners when the right websites, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: Outline the functions of agribusiness management</i> • <i>Level 2: Explain the meaning of agribusiness management</i> • <i>Level 3: Describe three (3) important aspects of agribusiness management</i> • <i>Level 4: How can agribusiness management entice farmers to produce more food? etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 23)</i> <i>b) Agriculture (Week 24)</i> <i>i. Learning Tasks</i>	<i>and the activities involved in agribusiness management via internet search. Learners then make a presentation on how to convince a friend to choose a particular agribusiness enterprise. All learners should be encouraged to take part in the presentation. The teacher should monitor learners to ensure that they use the right websites. Where necessary, the teacher should support learners when the right websites, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: Outline the functions of agribusiness management, etc.</i> <i>N/B: Refer to the Teacher Manual for focal area 2 for Agriculture (Week 23)</i> <i>b) Agriculture (Week 24)</i> <i>i. Learning Tasks</i>	
--	---	--	--

	• <i>Define a business plan</i> • <i>Explain the items needed to develop a business plan</i> • <i>Develop a business plan for a name animal and crop enterprise, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners individually think about what they know about business plan and share with a peer in their group. They then surf the internet or watch a video of how a business plan is developed, for them to develop their own business plan for any named animal or crop production, e.g., poultry or maize production. Teacher should provide learners with all the necessary support they need to surf the internet or watch a video on how to developed a business plan. The teacher should guide learners in developing business plan, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> • <i>Level 1: List the procedures for drawing up a business plan</i> • <i>Level 2: State the step-by-step procedure for drawing up a business plan</i>	<i>Define a business plan, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Think-pair-share: Learners individually think about what they know about business plan and share with a peer in their group. They then surf the internet or watch a video of how a business plan is developed, for them to develop their own business plan for any named animal or crop production, e.g., poultry or maize production. Teacher should provide learners with all the necessary support they need to surf the internet or watch a video on how to developed a business plan. The teacher should guide learners in developing business plan, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: List the procedures for drawing up a business plan, etc.</i>	
--	--	---	--

	• <i>Level 3 Explain the step-by-step procedure for drawing a business plan</i> • <i>Level 4: Write a business plan to source a loan facility from a Bank, etc.</i> <i>c) Agricultural Science (Week 23)</i> <i>i. Learning Tasks</i> • <i>List the indigenous and conventional mitigation measures for combating climate change</i> • <i>Discuss the indigenous and conventional mitigation measures for combating climate change</i> • <i>Evaluate the impact of the indigenous and conventional mitigation measures for combating climate change, etc.</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: The teacher should put learners in mixed-ability groups to brainstorm and come up with the indigenous and conventional mitigation measures for combating climate change. Learners also surf the internet for information on impact of the indigenous and conventional mitigation measures for combating climate change. Learners share their ideas with the whole class. Teacher</i>	<i>c) Agricultural Science (Week 23)</i> <i>i. Learning Tasks</i> <i>List the indigenous and conventional mitigation measures for combating climate change</i> <i>ii. Pedagogical Exemplars</i> <i>Initiating talk for learning: The teacher should put learners in mixed-ability groups to brainstorm and come up with the indigenous and conventional mitigation measures for combating climate change. Learners also surf the internet for information on impact of the indigenous and conventional mitigation measures for combating climate change. Learners share their ideas with the whole class. Teacher</i>	
--	---	--	--

	<i>should assist learners with difficulties with leading questions, that will help them to come up with the list of indigenous and conventional mitigation measures for combating climate change. Learners who can give further details should be encouraged to do so, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>• Level 1: State the indigenous and conventional mitigation measures for combating climate change</i> <i>• Level 2: Explain the indigenous and conventional mitigation measures for combating climate change</i> <i>• Level 3: How can traditional farming practices contribute to making crops more resilient in the face of changing weather patterns?</i> <i>• Level 4: In what ways can both indigenous and conventional strategies lead to more efficient water use to safeguard agricultural production, etc.</i> 2.5 Ask teachers in their subject groups or as individuals to complete learning planners for Weeks 23 and 24. Teachers should	<i>should assist learners with difficulties with leading questions, that will help them to come up with the list of indigenous and conventional mitigation measures for combating climate change. Learners who can give further details should be encouraged to do so, etc.</i> <i>N/B: Refer to Teacher Manual for other pedagogical exemplars</i> <i>iii. Key Assessments</i> <i>Level 1: State the indigenous and conventional mitigation measures for combating climate change, etc.</i> 2.5 In your subject groups or individually, complete learning planners for Weeks 23 and 24. It should include and ensure alignment of	
--	---	---	--

	include and ensure alignment of teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	teaching, learning and assessment activities, taking into consideration differentiation (such as providing activities with at least three different levels of difficulty), GESI and SEL in each learning planner to cater for all learners (NTS 3a, 3e-3g and 3k).	
3. Peer-review of learning planners. Reviewing planner to ensure alignment between course manual and learning planner based on the templates provided.	3.1 Ask teachers to exchange one of their learning plans with colleagues in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of the learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Ask teachers to implement the recommendations made by a peer reviewer to their learning plans as appropriate (NTS 1b).	3.1 Exchange one of your learning plans with a colleague in the same department (where applicable) and peer review the content (such as essential questions, key notes on differentiation, teaching and learning activities, assessment, and closure) of a learning plan (NTS 1a, 1b and 1e-1g). <i>Note:</i> <i>Areas for vital review:</i> <i>a) Alignment between teacher manual and learning plans</i> <i>b) Innovativeness of pedagogical choices</i> <i>c) Incorporation of GESI, SEL, National Values and 21st century skills</i> <i>d) Differentiated instruction and assessment</i> <i>e) Appropriateness of crafted essential questions, etc.</i> 3.2 Implement the recommendations made by a peer reviewer to your learning plan as appropriate (NTS 1b).	10mins

4. Reflection on the session: • Reflecting on what has been learned in the session. • Advance preparation towards next DPLC session	4.1 Ask teachers to share their views and experiences about the session (NTS 1a). 4.2 Encourage teachers who did not complete their learning plans during the session to complete them (NTS 3I). 4.3 Remind teachers to read the contents of Weeks 23 and 24 of the teacher manuals ahead of time and the DPLC Handbook Session 13 in preparation for the next session and bring along their DPLC Handbook and teacher manual (NTS 1a, 1b).	4.1 Share your views and experiences about the session (NTS 1a). 4.2 Complete your learning plans which were not completed during the session (NTS 3I). 4.3 Remember to read the contents of Weeks 23 and 24 of the teacher manuals ahead of time and the DPLC Handbook Session 13 in preparation for the next session and bring along your DPLC Handbook and teacher manual (NTS 1a, 1b).	10mins
--	--	---	---------------

Appendix 1

Agriculture

Learning Planner							
Subject	Agriculture	Week	1	Duration	240 minutes	Form	Year 1
Strand	Concept of Agriculture in an Industrialising Society	Sub-Strand	Agriculture and Society				
Content Standard	Demonstrate knowledge and understanding of the meaning, importance and branches in Agriculture as a discipline.						
Learning Outcome(s)	Use the knowledge of the concepts in Agriculture to identify the career opportunities and to clear misconceptions about Agriculture.						
Learning Indicator(s)	1. Explain the meaning and importance of Agriculture. 2. Discuss the branches and sectors of Agriculture and their related career opportunities. 3. Examine and dispel the misconceptions associated with the study of Agriculture.						
Essential Question(s)	1. How will the knowledge gained on the importance of agriculture entice individuals to choose agriculture as their future career? 2. What connections can be made between the branches and sectors of agriculture to improve the worth of agriculture? 3. How will the understanding of the misconceptions in agriculture help to boost agriculture production? etc.						
Pedagogical Strategies	• Initiating talk for learning • Think-pair-share • Structuring talk for learning • Collaborative learning • Inquiry-based learning • Project-based learning, etc.						
Teaching & Learning Resources	• Agriculture textbooks • Video/pictures on the importance of Agriculture in society • Video/pictures that dispel misconceptions in Agriculture • Charts on the sectors and branches of Agriculture • Projectors • Computers • Sample questionnaire on misconceptions in Agriculture • Camera, etc.						
Key Notes on Differentiation							
a) Agriculture (Week 1)							
Theme/Focal Area 1							

i. Learning Tasks

- *Brainstorm the meaning of agriculture and agricultural science*
- *Make a list of the importance of agriculture*
- *Make a presentation on how agriculture will impact your life and society? etc.*

ii. Pedagogical Exemplars

- *Initiating talk for learning: Teacher puts learners in mixed-ability groups to brainstorm and come up with the meaning of agriculture and agricultural science as well as the importance of agriculture. Learners share their ideas with the whole class. Teacher should assist learners with difficulties with leading questions that will help them to come up with the difference between agriculture and agricultural science, and the importance of agriculture. Learners who can give further details should be encouraged to do so.*
- *Structuring talk for learning: In their mixed ability groups, learners make a presentation on how agriculture will impact their life and society in a plenary session. The teacher should ensure that all learners take part in gathering information for the presentation and assign roles equitably to learners in the groups, etc.*

iii. Key Assessments

- *Level 1: List three (3) reasons why agriculture is important to society*
- *Level 2: Explain the meaning of the agriculture and agricultural science*
- *Level 3: Analyse at least two (2) reasons why agriculture should be studied in Ghana as a developing country*
- *Level 4: How can agriculture be used to solve the youth unemployment situation in Ghana to boost the Ghanaian economy? etc.*

Note: Refer to the Teacher Manual for focal areas 2 and 3 for Agriculture (Week 1)

Keywords	<i>Agriculture, Agricultural Science, Career Opportunities in Agriculture, Branches and Sectors in Agriculture, Misconceptions in Agriculture, Rich Farmer, Mechanized Farming, etc.</i>
-----------------	--

Lesson 1

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

Teacher Activity	Learner Activity
<u>Starter Activity (E.g., 10 minutes)</u> <i>Review learners' previous knowledge using real life examples from their community by asking them of the meaning, importance, branches and career opportunities in Agriculture, in mixed-ability groups. Ask learners to present their findings in class using whole-class discussion.</i>	
<u>Introductory Activity (E.g. 10 minutes)</u> <i>Lead learners in whole class discussion to discuss what they know about Agriculture. Encourage learners to show respect and tolerance for individual diverse views as they discuss their ideas.</i>	<u>Introductory Activity (E.g. 10 minutes)</u> <i>In whole class discussion, what do you know about the concept of Agriculture?</i>

<u>Activity 1 (E.g. 45 minutes)</u> Put learners in mixed ability groups to discuss the meaning of agriculture and agricultural science as well as the importance of Agriculture to society and make a presentation. Set ground rules to discourage teasing of learners with speech problems and those who might give wrong answers. Give learners with speech challenges enough time to express their views. Introverts should be encouraged to play some roles in their groups. <u>Activity 2 (E.g. 45 minutes)</u> Organise learners into mixed gender groups to discuss the major branches of Agriculture and investigate the career opportunities that exist in Agriculture. Encourage shy learners to talk and their efforts should be applauded.	<u>Activity 1 (E.g. 45 minutes)</u> Discuss the meaning of agriculture and agricultural science as well as the importance of Agriculture to society in mixed ability groups and make presentation at a plenary session. <u>Activity 2 (E.g. 45 minutes)</u> In mixed gender groups, discuss the major branches and career opportunities in Agriculture and make a presentation on your findings.
Assessment DoK aligned to the Curriculum and Subject Teacher Manual	
Level 1 I. Differentiate between Agriculture and Agricultural Science. II. List three (3) reasons why Agriculture is important to society. III. Identify at least two (2) careers in your community that are agricultural related. Level 2 I. Explain the meaning of the word “Agriculture”. II. Investigate and report on at least two (2) career opportunities that exist in Agriculture. Level 3 I. Analyse at least two (2) reasons why Agriculture should be studied in Ghana as a developing country. II. Write for or against the motion that “Crop Science has contributed more to Ghana’s Economy than Animal Science”. Level 4 I. How can Agriculture be used to solve the youth unemployment situation in Ghana to boost the Ghanaian economy. II. Justify your choice of a career in Agriculture for a brighter future.	
Lesson Closure <i>In completing this part, refer to the Essential Questions to check that learning has taken place.</i>	

Activity (E.g. 10 minutes) a) Debrief by asking learners questions on what they have learnt and whether the essential questions have been addressed. b) Summarize key points and fill in gaps left by learners.	
Reflection & Remarks	
Reflections What went on well during the discussions and presentations? What will you do differently if you are to teach the same content again? Were the needs of learners with different abilities met? Were the learners enthusiastic about learning the meaning, importance, branches and career opportunities, and the activities and resources employed in the delivery of the lesson? etc. Remarks (sample) Learners were able to explain the meaning, importance, branches and career opportunities in Agriculture, etc.	
Lesson 2	
Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual	
Teacher Activity	Learner Activity
Starter Activity (E.g., 5 minutes) Review learners' previous knowledge using real life examples from their community by asking them why people dislike going into farming in mixed-gender groups. Ask learners to present their findings in class using whole-class discussion.	
Introductory activity (E.g., 5 minutes) Lead learners in whole class discussion to list what they know about the misconceptions in Agriculture. Encourage learners to show respect and tolerance for individual diverse views as they discuss their ideas. Activity 1 (E.g., 25 minutes) Put learners into mixed ability groups, for them to discuss the misconceptions associated with Agriculture. Encourage slow learners, shy learners and introverts to play roles in the group. Activity 2 (E.g., 60 minutes) Pair up learners to design a questionnaire on misconceptions in Agriculture and let them administer the questionnaire among their peers in class. Guide them to analyse the data collected using EXCEL and assist them to interpret the results.	Introductory activity (E.g., 5 minutes) In whole class discussion, list you know about the misconception in Agriculture? Activity 1(E.g., 25 minutes) Discuss the misconceptions associated with Agriculture in mixed ability groups. Activity 2 (E.g., 60 minutes) In pairs, design and administer a questionnaire in class among your peers with a maximum of 10 questions on misconceptions in Agriculture, analyse the data and present a report on your findings.

<i>Slow learners should be paired with fast learners.</i> <u>Activity 3 (E.g., 10 minutes)</u> <i>Show videos/pictures of a rich farmer and female driving a tractor and videos that dispel gender stereotyping in Agriculture.</i> <u>Activity 3 (E.g., 10 minutes)</u> <i>Summarise the key points emanating from the discussion and administration of questionnaire on the misconceptions in Agriculture. Encourage introverts and shy learners to ask questions about the lesson. Ask learners to administer, analyse and present report using the designed questionnaire in the school community as take-home assignment.</i>	<u>Activity 3 (E.g., 10 minutes)</u> <i>Watch videos/pictures of a rich farmer and female driving a tractor and videos that dispel gender stereotyping in Agriculture.</i> <u>Activity 3 (E.g., 10 minutes)</u> <i>Seek further clarification on the misconceptions in Agriculture. Administer the designed questionnaire in your community, analyse the data and present report as take-home assignment.</i>
Assessment DoK aligned to the Curriculum and Subject Teacher Manual	
Level 1 <i>List at least two (2) misconceptions in Agriculture.</i> Level 2 <i>Make a presentation on how to dispel at least two (2) misconceptions about Agriculture in the community.</i> Level 3 <i>Assess the effects of at least three (3) misconceptions in Agriculture.</i> Level 4 <i>Research on the misconceptions in Agriculture in your community, how it has affected Agricultural development and suggest possible remedies.</i>	
Lesson Closure <i>In completing this part, refer to the Essential Questions to check that learning has taken place.</i>	
<u>Activity (E.g., 5 minutes)</u> a) <i>Debrief by asking learners questions on what they have learnt and whether the essential questions have been addressed.</i> b) <i>Summarize key points and fill in gaps left by learners.</i>	
Reflection & Remarks	
Reflections <i>What went on well during the discussion, design, administration and analysing of the results from the questionnaire?</i> <i>What will you do differently if you are to teach the misconceptions in Agriculture and how to dispel them again?</i> <i>Were the needs of learners with different abilities met?</i>	

Were the learners enthusiastic about the misconception in agriculture and how to dispel them including the activities and resources employed in the delivery of the lesson? etc.

Remarks (Sample)

Learners enthusiastically made a presentation on the misconceptions in Agriculture and how to dispel them, etc.

Learning Planner							
Subject	Agricultural Science	Week	1	Duration	240 minutes	Form	1
Strand	New Dawn in Agriculture	Sub-Strand	Misconceptions and Prospects in Agriculture and Farming				
Content Standard	Demonstrate knowledge and understanding of the meaning and importance of Agriculture.						
Learning Outcome(s)	Explain the importance of agriculture and address misconceptions about the sector.						
Learning Indicator(s)	1. Explain the meaning and importance of Agriculture. 2. Identify and address misconceptions in agriculture and farming at the community and national levels.						
Essential Question(s)	1. How will the knowledge gained on the meaning and importance of agriculture attract an individual to go into agriculture production? 2. What appropriate resources can be used for effective teaching and learning of the misconceptions in agriculture? 3. What connections can be made between the misconceptions in agriculture and wealth creation to dispel the misconceptions associated with agriculture? etc.						
Pedagogical Strategies	• Think-Pair-Share • Structuring Talk for Learning • Talk for Learning, etc.						
Teaching & Learning Resources	• Agriculture textbooks • Video/pictures on the importance of Agriculture in society • Video/pictures that dispel misconceptions in Agriculture • Computers • Sample questionnaire on misconceptions in Agriculture • Camera, etc.						
Key Notes on Differentiation							
Focal area/Theme 1							
i. Learning Tasks							
• Learners explain the meaning of agriculture and agricultural science • Learners discuss the importance of agriculture • Learners analyse the impact of agriculture on society, etc.							
ii. Pedagogical Exemplars							
• Initiating talk for learning: The teacher guides learners with probing and leading questions to come up with the meaning of agriculture and agricultural science as well as the importance of agriculture to society and the nation. Learners should be encouraged to provide oral or written responses.							

- *Collaborative learning: Teacher puts learners in mixed-ability groups to discuss the impact of agriculture on society. More confident learners should be encouraged to lead the discussion and to provide assistance for other learners, etc.*

iii. Key Assessment

- *Level 1: List the importance of agriculture*
- *Level 2: Explain the meaning of agriculture and agricultural science.*
- *Level 3: Explain three reasons agriculture should be studied by all secondary school learners in Ghana.*
- *Level 4: Discuss how agriculture positively impacts various aspects of Ghanaian society, etc.*

Note: Refer to the Teacher Manual for focal area 2 for Agricultural Science (Week 1)

Keywords	<i>Agriculture, Agricultural Science, Cultural Heritage, Food Security, Poverty Alleviation, Economic Growth, Climate Resilience, Misconceptions in Agriculture, Rich Farmer, Mechanized Farming etc.</i>
-----------------	---

Lesson 1	
Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual	
Teacher Activity	Learner Activity

Starter Activity (E.g., 10 minutes)

Review learners' previous knowledge using real life examples from their community by asking them of the meaning and importance of Agriculture, in mixed-ability groups. Ask learners to present their findings in class using whole-class discussion.

<u>Introductory Activity (E.g., 10 minutes)</u> Lead learners in whole class discussion to list what they know about Agriculture. Encourage learners to show respect and tolerance for individual diverse views as they discuss their ideas. <u>Activity 1 (E.g., 45 minutes)</u> Put learners in mixed ability groups to discuss the meaning of agriculture and agricultural science and make a presentation on it. Set ground rules to discourage teasing of learners with speech problems and those who might give wrong answers. Give learners with speech challenges enough time to express their views. Introverts should be encouraged to play some roles in their groups. <u>Activity 2 (E.g., 45 minutes)</u> Guide learners in their groups to discuss the importance of agriculture to the society and the economic growth of Ghana. Let learners build a portfolio on the importance of agriculture. Ensure that all learners take part in building of the portfolio and each learner's contribution should be respected.	<u>Introductory Activity (E.g., 10 minutes)</u> In whole class discussion, list what you know about Agriculture? <u>Activity 1 (E.g., 45 minutes)</u> Discuss the meaning of agriculture and agricultural science in mixed-ability groups and make presentation on it at a plenary session. <u>Activity 2 (E.g., 45 minutes)</u> Discuss the importance of agriculture to the society and the economic growth of Ghana. Build a portfolio on the importance of agriculture. Build a portfolio on the importance of agriculture and respect each other's contribution.
Assessment DoK aligned to the Curriculum and Subject Teacher Manual	
Level 1 Define agriculture Level 2 Explain the meaning of Agriculture and Agricultural Science Level 3 Explain three reasons Agriculture should be studied by all secondary school students in Ghana Level 4 Discuss how agriculture positively impacts various aspects of the society, etc.	

Lesson Closure	
<i>In completing this part, refer to the Essential Questions to check that learning has taken place.</i>	
Activity (E.g., 10 minutes) c) <i>Debrief by asking learners questions on what they have learnt and whether the essential questions have been addressed.</i> d) <i>Summarize key points and fill in gaps left by learners.</i>	
Reflection & Remarks	
<i>Reflections</i> <i>What went on well during the discussion and presentation on the meaning of agriculture and agricultural science?</i> <i>What went on well during the portfolio building on the importance of agriculture?</i> <i>What will you do differently if you are to teach the same contents again?</i> <i>Were the needs of learners with different abilities met?</i> <i>Were the learners enthusiastic about the meaning and importance of agriculture, activities and resources employed in the delivery of the lesson? etc.</i> <i>Remarks (Sample)</i> <i>Learners were able to explain the meaning and importance of Agriculture, etc.</i>	
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) <i>Review learners' previous knowledge using real life examples from their community by asking them what prevents people from going into agriculture, in mixed-gender groups. Ask learners to present their findings in class using whole-class discussion.</i>	

<u>Introductory activity (E.g. 10 minutes)</u> <i>Lead learners in whole class discussion to list the misconceptions in Agriculture. Encourage learners to show respect and tolerance for individual diverse views as they discuss their ideas.</i> <u>Activity 1 (E.g., 15 minutes)</u> <i>Put learners into mixed-gender groups, for them to discuss the misconceptions associated with Agriculture. Encourage slow learners, shy learners and introverts to play roles in the group.</i> <u>Activity 2 (E.g., 55 minutes)</u> <i>Pair up learners and support them to design a questionnaire with a maximum of eight questions on misconceptions in Agriculture and administer it in class among the peers. Guide them to analyse the data collected using EXCEL and assist them to interpret the results. Slow learners should be paired with fast learners.</i> <u>Activity 3 (E.g., 20 minutes)</u> <i>Guide learners in their groups to browse the internet and come up with ways of addressing misconceptions about agriculture. Let them create a table on the misconception associated with Agriculture. Support learners with difficulty in using the internet and creation of the tables.</i> <u>Activity 4 (E.g., 10 minutes)</u> <i>Show videos/pictures of a rich farmer and female driving a tractor and videos that dispel gender stereotyping in Agriculture.</i>	<u>Introductory activity (E.g., 10 minutes)</u> <i>In whole class discussion, list the misconceptions in Agriculture?</i> <u>Activity 1 (E.g., 15 minutes)</u> <i>Discuss the misconceptions associated with Agriculture in mixed ability groups.</i> <u>Activity 2 (E.g., 55 minutes)</u> <i>In pairs, design and administer a questionnaire with a maximum of eight questions on the misconceptions associated with Agriculture among your peers in class. Analyse the data and present a report on your findings.</i> <u>Activity 3 (E.g., 20 minutes)</u> <i>In your groups, browse the internet and come up with ways of addressing misconceptions about agriculture. Create a table on the misconceptions in Agriculture and how they can be addressed, etc.</i> <u>Activity 4 (E.g., 10 minutes)</u> <i>Watch videos/pictures of a rich farmer and female driving a tractor and videos that dispel gender stereotyping in Agriculture.</i>
Assessment DoK aligned to the Curriculum and Subject Teacher Manual	
Level 1 <i>Outline at least three misconceptions about the study and practice of Agriculture</i> Level 2 <i>Identify and explain at least two reasons to disprove the notion that agriculture is for males only</i>	

Level 3

Explain four measures to address misconceptions young people have about agriculture

Level 4

Search for information on successful female farmers in Ghana and submit a written report on the common issues of their success story. (Individual Assignment), etc.

Lesson Closure

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

Activity (E.g., 10 minutes)

- e) Debrief by asking learners questions on what they have learnt and whether the essential questions have been addressed.*
- a) Summarize key points and fill in gaps left by learners.*

Reflection & Remarks*Reflections*

What went on well during the lesson?

What will you do differently if you are to teach the same content again?

Were the needs of learners with different abilities met?

Were the learners enthusiastic about the content, activities and resources employed in the delivery of the lesson? etc.

Remarks (Sample)

Learners were able to make presentation on the misconceptions in Agriculture and how to dispel them, etc.

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 learners engaged on tasks that challenge them in line with the content standards?

Does the teacher take into consideration the uniqueness of learners?

- ☐ Yes
☐ In Part
☐ No
☐ NA

5b. Please provide an explanation to your answer in Q5 above

6. Is there evidence that students are learning?

- ☐ Yes
☐ In Part
☐ No
☐ NA

6b. Please provide an explanation to your answer in Q6 above

7. Is teaching differentiated to cater for the varied needs of all learners (i.e., male learners, female learners, learners with special education needs) and those with poor literacy and/ or numeracy proficiency?

- ☐ Yes
☐ In Part
☐ No
☐ NA

7b. Please provide an explanation to your answer in Q7 above

8. Does the teacher use real life examples which are familiar to learners to explain concepts?

- ☐ Yes
☐ In Part
☐ No
☐ NA

8b. Please provide an explanation to your answer in Q8 above

9. Does the teacher point out or question traditional gender roles when they come up during the lessons as appropriate?

- ☐ Yes
☐ In Part
☐ No
☐ NA

9b. Please provide an explanation to your answer in Q9 above

10. Does the lesson include appropriate interactive and creative approaches e.g., group work, role play, storytelling to support learners achieving the learning outcomes?

If yes, give examples of the issues and skills that have been so integrated.

- ☐ Yes
☐ In Part
☐ No
☐ NA

10b. Please provide an explanation to your answer in Q10 above

11. Have cross-cutting issues and /or 21st century skills been integrated into the lesson to support learners in achieving the learning outcomes e.g., problem-solving, critical thinking, communication? If yes, give examples of the issues and skills that have been so integrated.

- ☐ Yes
☐ In Part
☐ No
☐ NA

11b. If yes, give examples of the issues and skills that have been so integrated.

12. Does the teacher incorporate ICT into their practice to support learning?

- ☐ Yes
☐ In Part
☐ No
☐ NA

12b. Please provide an explanation to your answer in Q12 above

13. Does the teacher encourage all female male and male learners (including those who may be shy or afraid to speak) to ask questions, answer questions, participate in group work, etc. during the lesson?

- ☐ Yes
☐ In Part
☐ No
☐ NA

13b. Please provide an explanation to your answer in Q13 above

14. Is assessment evident in the lesson? If yes, does it include assessment as, for or of learning and go beyond recall?

If yes, did it include assessment of, for or as learning and go beyond recall?

- ☐ Yes
☐ In Part
☐ No
☐ NA

14b. Please provide an explanation to your answer in Q14 above

15. Do learners make use of feedback from teacher and peers?

- ☐ Yes
☐ In Part
☐ No
☐ NA

15b. Please provide an explanation to your answer in Q15 above

16. Does the teacher sum up the lesson and evaluate the lesson against the learning outcomes with the learners?

- ☐ Yes
☐ In Part
☐ No
☐ NA

16b. Please provide an explanation to your answer in Q16 above

17. Does the teachers' planning of lessons taught before the one observed show how they plan for learning over time, considering individual and group needs?

- ☐ Yes
☐ In Part
☐ No
☐ NA

17b. Please provide an explanation to your answer in Q17 above

18. Does the teacher pay attention to the composition of females and males during group work and assigns females leadership roles.

- ☐ Yes
☐ In Part
☐ No
☐ NA

18b. Please provide an explanation to your answer in Q18 above

19. Does the teacher provide constructive verbal feedback to both females and males and learners with special education needs?

- ☐ Yes
☐ In Part
☐ No
☐ NA

19b. Please provide an explanation to your answer in Q19 above

20. Does the teacher provide constructive written feedback to both females and males and learners with special education needs in their exercise book?

- ☐ Yes
☐ In Part
☐ No
☐ NA

20b. Please provide an explanation to your answer in Q20 above

21. Key strengths in the lesson

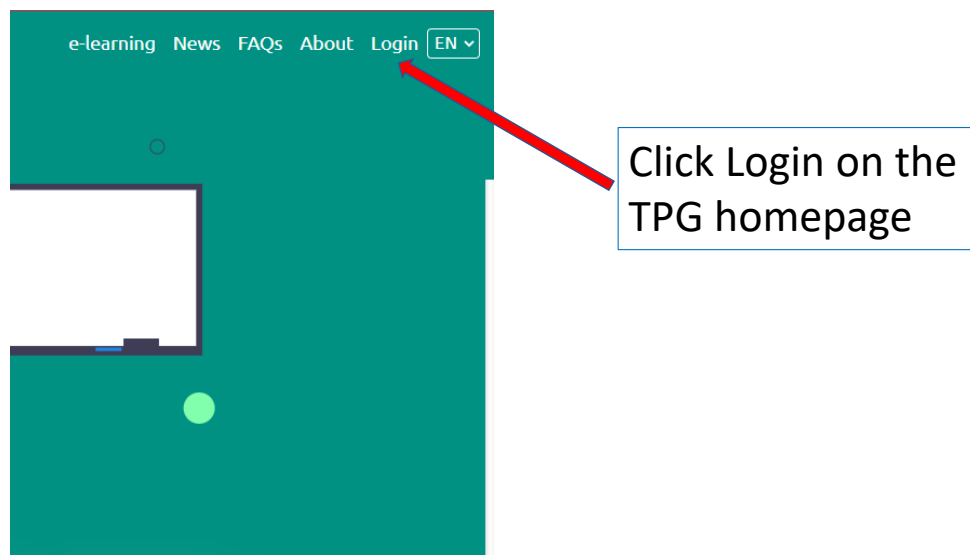
22. Areas for development

23. Next steps for teacher

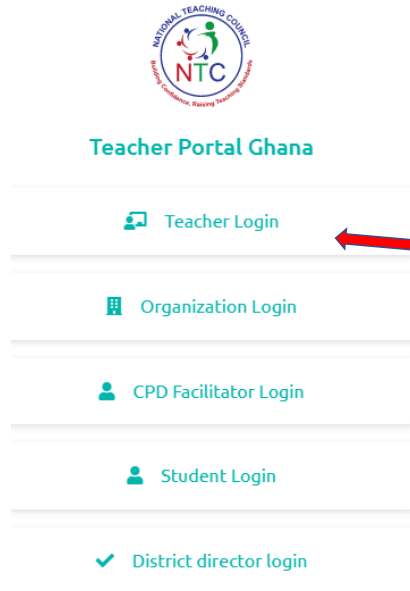
24. Additional Notes (on teacher's actions, the flow of activities, etc.)

HOW TO AWARD CPD POINTS TO DESERVING TEACHERS

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

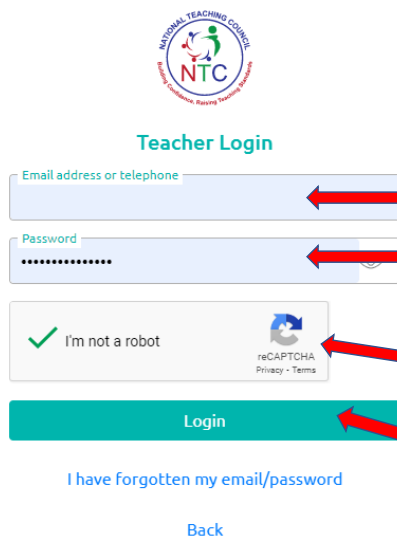


2. On the Login page, click Teacher Login



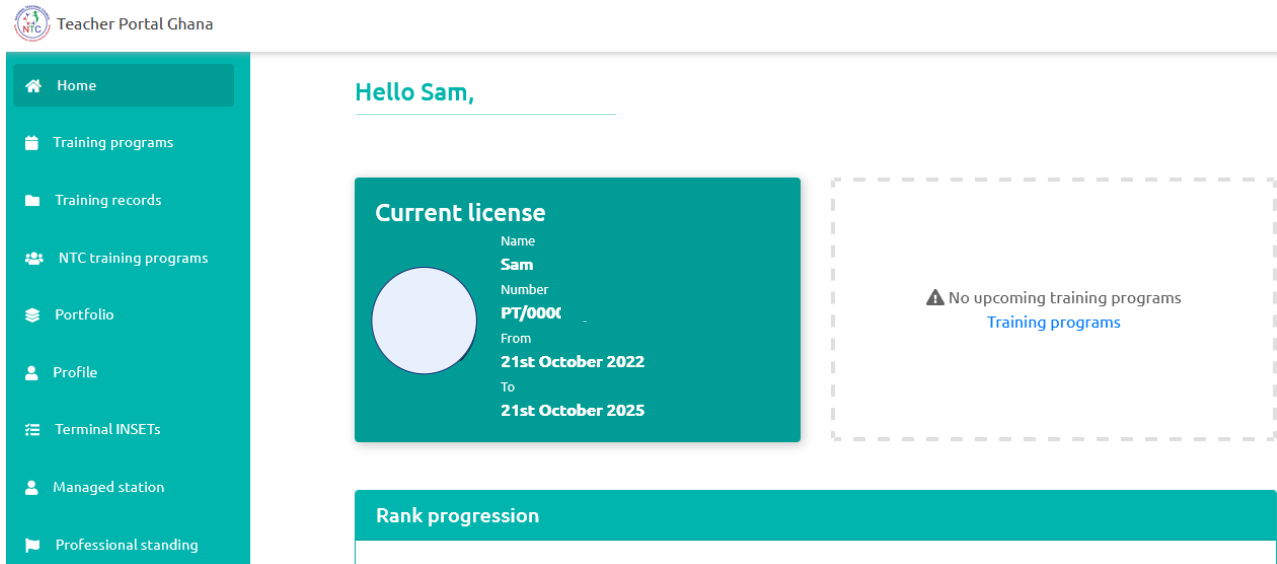
The image shows the 'Teacher Portal Ghana' login page. At the top is the NTC logo with the text 'NATIONAL TEACHING COUNCIL' and 'NTC'. Below the logo is the title 'Teacher Portal Ghana'. There are five login options listed in a vertical stack: 'Teacher Login' (with a laptop icon), 'Organization Login' (with a building icon), 'CPD Facilitator Login' (with a person icon), 'Student Login' (with a person icon), and 'District director login' (with a checkmark icon). A red arrow points from a text box 'Click Teacher Login' to the 'Teacher Login' button.

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

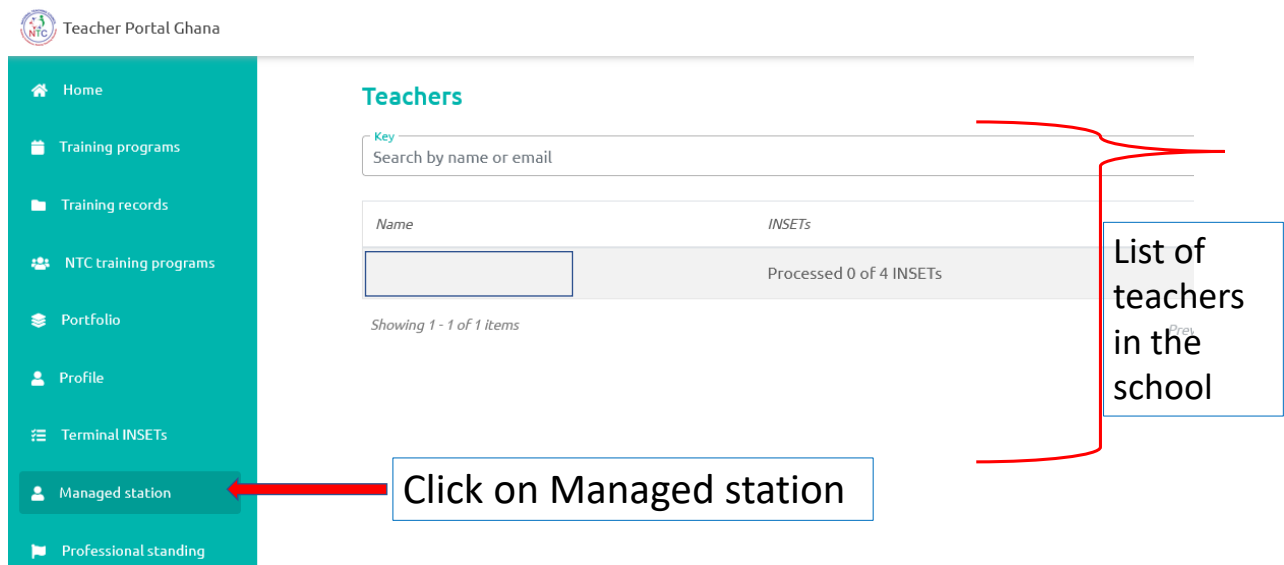


The image shows the 'Teacher Login' page. At the top is the NTC logo. Below the logo is the title 'Teacher Login'. There are four input fields: 'Email address or telephone', 'Password', 'I'm not a robot' (with a checkmark icon), and a 'Login' button. A red arrow points from a text box 'Enter your email address' to the email field. Another red arrow points from a text box 'Enter your password' to the password field. A third red arrow points from a text box 'Check I'm not a robot' to the 'I'm not a robot' field. A fourth red arrow points from a text box 'Click Login' to the 'Login' button. Below the 'Login' button are two links: 'I have forgotten my email/password' and 'Back'.

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)

Teachers /

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)

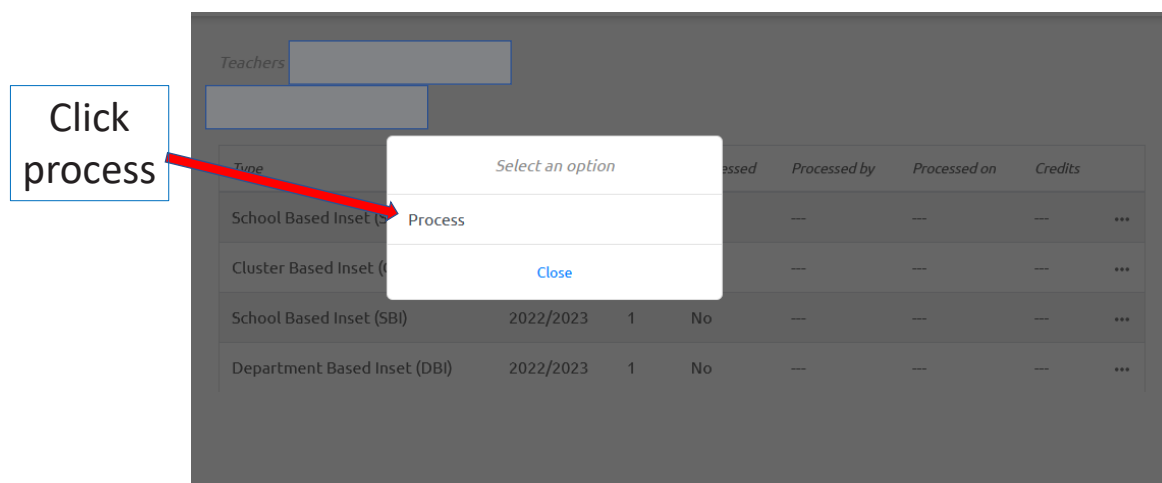
Teachers /

Click here to process

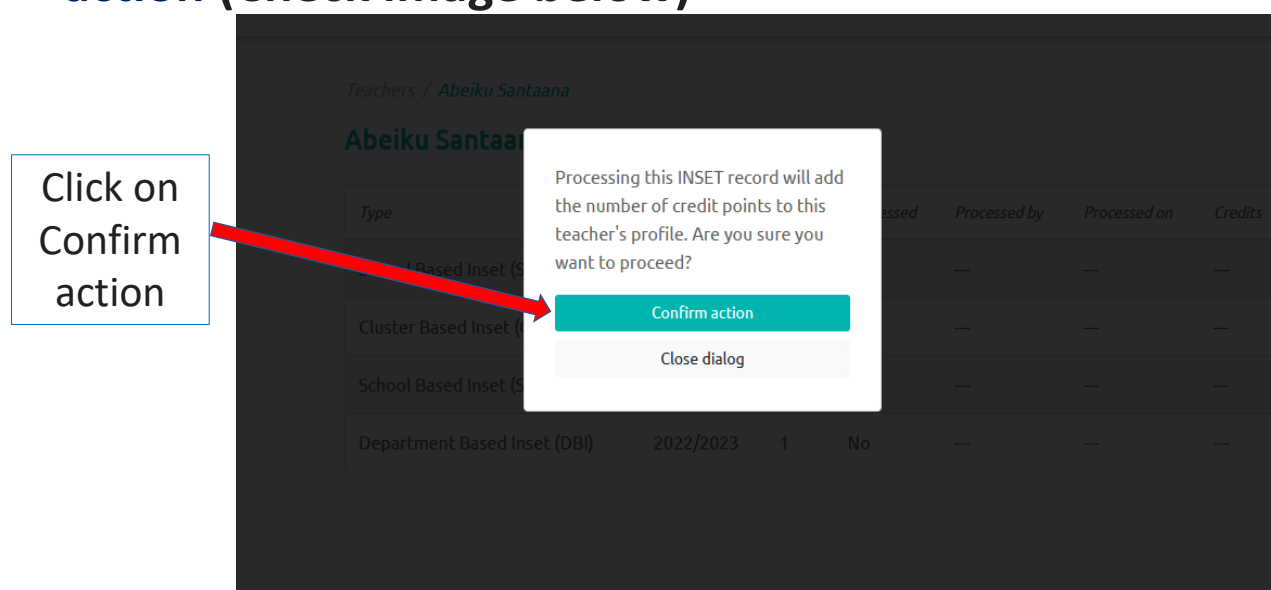
Type	Year	Term	Processed	Processed by	Processed on	Credits	
School Based Inset (SBI)	2022/2023	1	No	---	---	---	...
Cluster Based Inset (CBI)	2022/2023	1	No	---	---	---	...
School Based Inset (SBI)	2022/2023	1	No	---	---	---	...
Department Based Inset (DBI)	2022/2023	1	No	---	---	---	...

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)



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



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

Teachers /

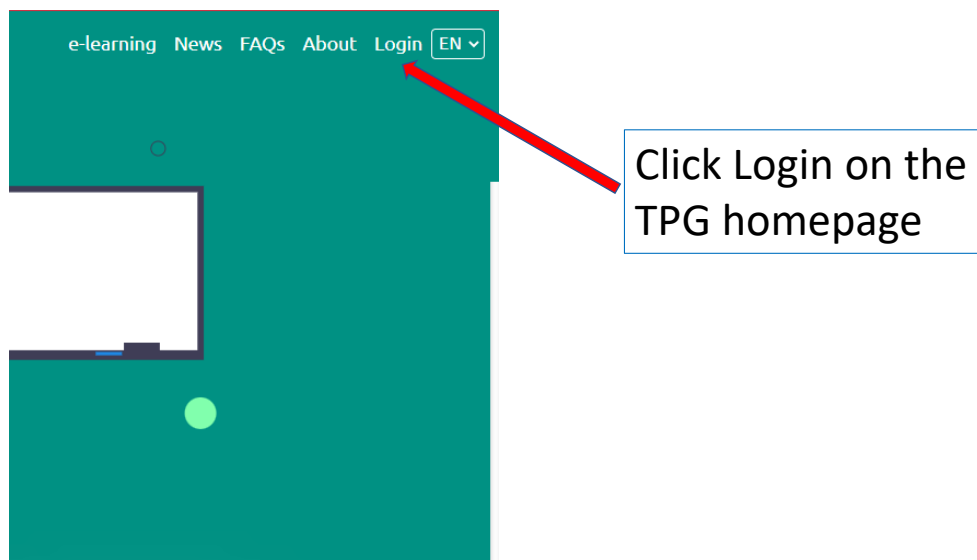
Points processed

Type	Year	Term	Processed	Processed by	Processed on	Credits	
School Based Inset (SBI)	2022/2023	1	Yes	 (Teacher)	Saturday, 15th April, 2023	1	...
Cluster Based Inset (CBI)	2022/2023	1	Yes	 (Teacher)	Saturday, 15th April, 2023	1	...
School Based Inset (SBI)	2022/2023	1	No	---	---	---	...
Department Based Inset (DBI)	2022/2023	1	No	---	---	---	...

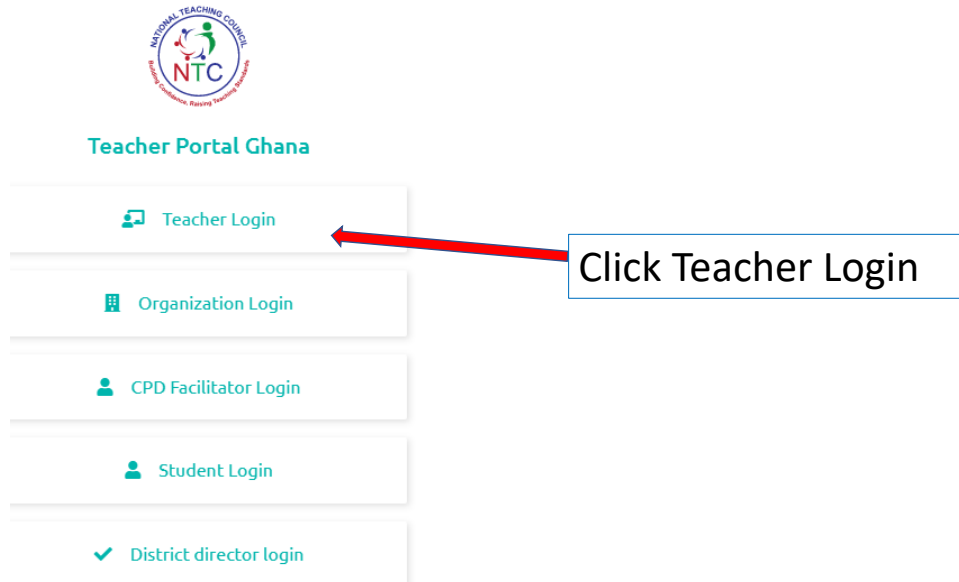
THANK YOU

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

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

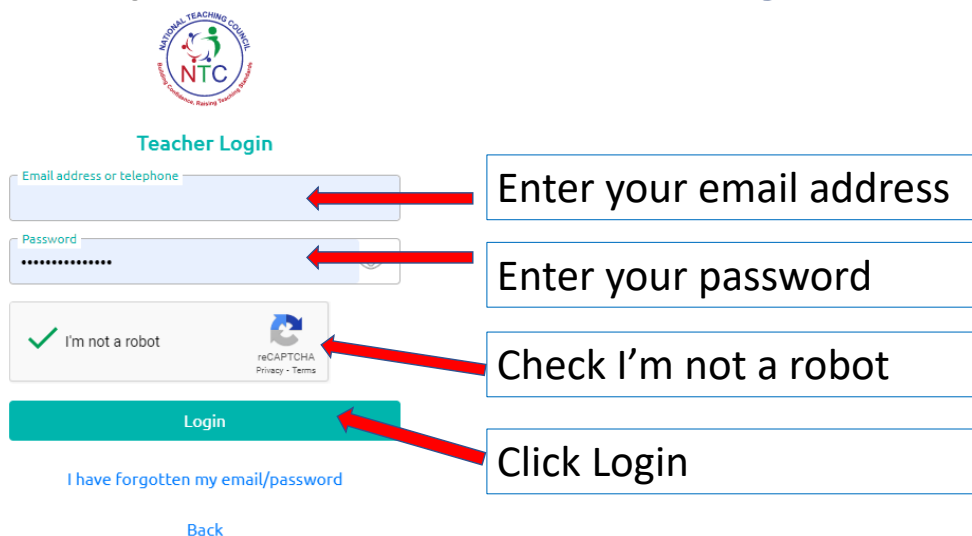


2. On the Login page, click Teacher Login



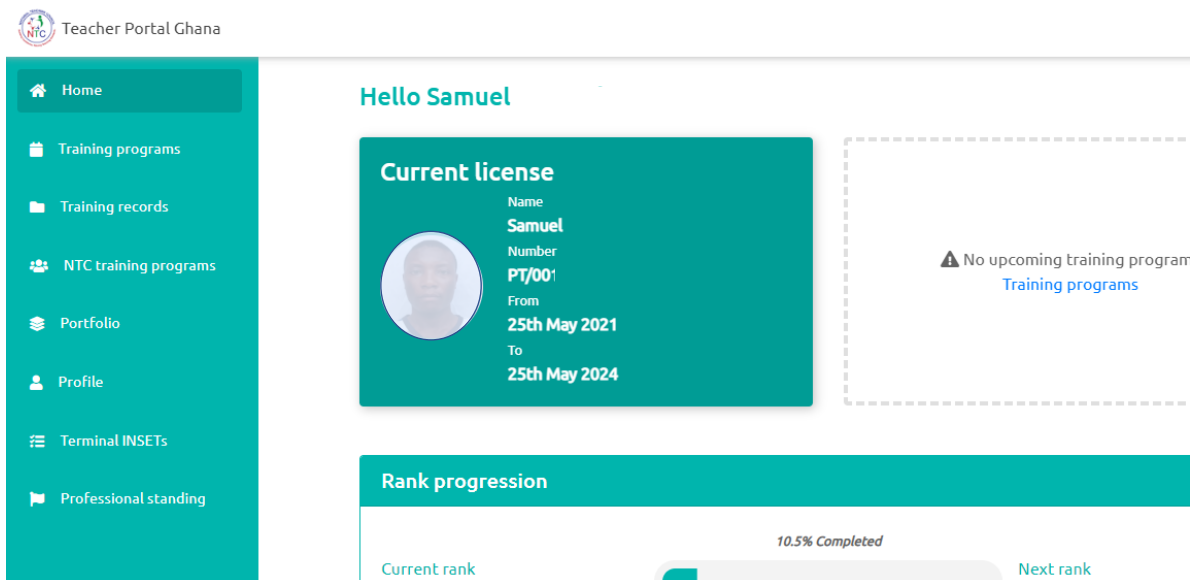
The image shows the 'Teacher Portal Ghana' login page. At the top is the NTC logo with the text 'NATIONAL TEACHING COUNCIL' and 'NTC' in the center. Below the logo is the title 'Teacher Portal Ghana'. There are five login options listed in a vertical stack: 'Teacher Login' (with a person icon), 'Organization Login' (with a building icon), 'CPD Facilitator Login' (with a person icon), 'Student Login' (with a person icon), and 'District director login' (with a checkmark icon). A red arrow points from a text box 'Click Teacher Login' to the 'Teacher Login' button.

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



The image shows the 'Teacher Login' page. At the top is the NTC logo. Below the logo is the title 'Teacher Login'. There are four input fields: 'Email address or telephone' (with a red arrow pointing to it from a text box 'Enter your email address'), 'Password' (with a red arrow pointing to it from a text box 'Enter your password'), and a reCAPTCHA box (with a red arrow pointing to it from a text box 'Check I'm not a robot'). Below the input fields is a green 'Login' button (with a red arrow pointing to it from a text box 'Click Login'). Below the 'Login' button is a link 'I have forgotten my email/password' and a link 'Back'.

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)

Teacher Portal Ghana

Training records
Records for training programs registered and/or attended

Total points: 1.8988

Sensitization on Education Policies	⚠ Marked as absent
Differentiated Learning	✓ Processed Credits: 1.32
Advanced Mobile Learning with Multimedia (AMLM)	✓ Processed Credits: 0.5788

Click to view training records

List of training programs

THANK YOU