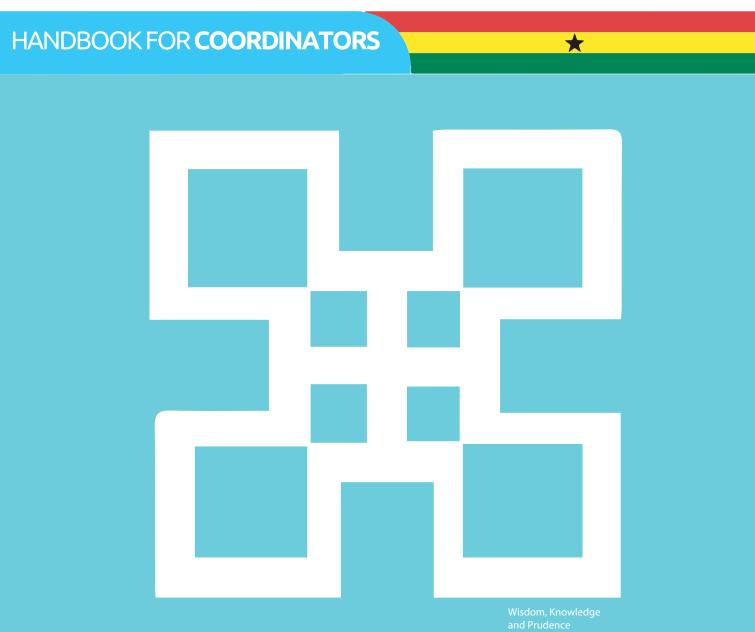
# Professional Learning Community Handbook 1

Working to the National Teachers' Standards









**GOVERNMENT OF GHANA** 







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# Professional Learning Community Handbook 1 Working to the National Teachers' Standards

**Coordinator Version** 

### **FOREWORD**

Ghana Education Service has collaborated with the National Teaching Council, tutors of Colleges of Education, the University for Development Studies, Accra and Takoradi Technical Universities, and teachers from 12 Senior High Schools, Senior High Technical Schools, and Technical Institutes to develop this maiden Professional Learning Community Handbook. The Professional Learning Community (PLC) Handbook is intended to assist Heads of Secondary Schools and teachers to run weekly PLC sessions in schools. These PLC sessions are dedicated periods in the school's weekly schedule where all teachers come together and work collaboratively to improve teaching and learning.

PLC sessions will help teachers to build a collective understanding of how to improve outcomes for all learners in their schools through a series of practical activities such as lesson study, team teaching and action research. The involvement of teachers from 12 Senior High Schools, Senior High Technical Schools, and Technical Institutes in the writing of this Handbook means that the primary users of the Handbook are the ones who have been involved in its creation, helping to ensure its relevance and practicality.

This first PLC Handbook focuses on strengthening understanding, awareness, and adherence to the National Teachers' Standards (NTS). The NTS provide the foundations upon which Ghana's educational reforms are being built as the specify the three things needed to be an effective teacher:

- 1. Professional Values and Attitudes the dedication to learn and improve and become the best teacher you can be;
- 2. Professional Knowledge- of the subjects and content of the curriculum being taught, and;
- 3. Professional Practice- the understanding of how to encourage participation, critical thinking and achieve intended learning outcomes.

The PLC Handbook is designed to improve quality and relevance of teaching and learning through experiential sharing and strategies which also incorporate Gender, Equality and Social Inclusion (GESI), Information Communication Technology (ICT) and 21<sup>st</sup> Century Skills.

The Handbook is structured in 11 units which are applicable for all SHSs and 8 units of TVET to cater for the specific needs of Technical Institutes.

It is our hope and expectation that this PLC Handbook represents an important step in the transformation of our secondary education system and that it will be used effectively across all Ghanaian secondary education institutions.

Professor Kwasi Opoku-Amankwa Director-General Ghana Education Service

# PROFESSIONAL LEARNING COMMUNITY HANDBOOK 1 WORKING TO THE NATIONAL TEACHERS' STANDARDS – COORDINATOR VERSION

### 1. Background to the PLC Sessions in this Handbook.

There are eleven weekly PLC Sessions designed to prepare teachers to teach subjects in the secondary school curriculum to the National Teachers' Standards. The Sessions are not subject specific although teachers who teach Technical and Vocation Education and Training (TVET) subjects have access to a subject specific version of the eight of the Sessions (-i.e., Sessions 4-11).

The PLC Sessions are designed to help operationalize the reform of secondary education at both teacher and student levels and to support:

- professionalising teaching by supporting teachers in developing communities of practice and enhancing their professionalism.
- improving the learning outcomes and life chances for all learners.

### 2. Features of the PLC Sessions.

- The main resources for the weekly teacher Sessions are the teacher PLC Handbook and the PLC Coordinator Handbook.
- ▶ Both versions are written to provide information to guide the eleven weekly PLC Sessions that are linked directly to the National Teachers' Standards.
- The PLC Coordinator Handbook have prompts for leading the PLC Session.
- The teacher PLC handbook contains activities for teachers and guidance for what they will do during the Session.
- The weekly PD Sessions are of an hour and a half duration.

PLC Session 1: Gender Equality and Social Inclusion			
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Introduction to session	1.1 Ask a teacher to start the PLC session with an icebreaker.	1.1 Start the PLC session with an icebreaker.	25 mins
	1.2 Ask teachers to read the introduction to Gender Equality and Social Inclusion (GESI) and the learning outcome (LO) as well as learning indicators (LIs) below. Invite opinions from both male and female teachers including those with special needs, where applicable (NTS 1a,1e, 2b and 3f).	1.2 Read the introduction to Gender Equality and Social Inclusion (GESI) and the learning outcome (LO) as well as learning indicators (LIs) below and provide your opinions on same (NTS 1a,1e, 2b and 3f).	
	Introduction to GESI:  a) Purpose of GESI in all subject areas  Communities all over the world consist of diverse individuals and social groupings that have different needs, strengths, opportunities, and concerns as a result of differences in culture, gender, abilities, economic and social status. As a teacher, it is important to understand the uniqueness of the diverse groups in the classroom and ensure that every individual is supported to access quality education. GESI in schools is being championed towards promoting equal opportunity for females and males as well as all other disadvantaged groups in the classroom. Teachers need to have a clear understanding of GESI issues to be able to integrate these in the teaching and learning process and other aspects of school life and to encourage learners to do same during learning.	Introduction to GESI:  a) Purpose of GESI in all subject areas  Communities all over the world consist of diverse individuals and social groupings that have different needs, strengths, opportunities, and concerns as a result of differences in culture, gender, abilities, economic and social status. As a teacher, it is important to understand the uniqueness of the diverse groups in the classroom and ensure that every individual is supported to access quality education. GESI in schools is being championed towards promoting equal opportunity for females and males as well as all other disadvantaged groups in the classroom. Teachers need to have a clear understanding of GESI issues to be able to integrate these in the teaching and learning process and other aspects of School life and to encourage learners to do same	

# b) Overview of GESI and related concept.

This session seeks to expose teachers in all the subject areas (in all second cycle institutions) to the concept to GESI and related issues such as Gender, Equality, Equity, etc., to enable them appreciate issues of stereotyping and work towards challenging traditional gender roles as well as dealing with their own unconscious biases so they can attend to the diverse needs of all learners in the classroom and in the schools generally.

**Note:** The LOs in the Handbook describe what teachers will be able to do by the end of the session

### Note

LO (Learning Outcome): This is the expected knowledge, understanding, skills, etc., to be acquired at the end of a lesson. LI (Learning Indicator): This is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products.

LO: Demonstrate understanding of the relevance of GESI and related issues in the National Teachers' Standards (NTS).

LI 1.1 Discuss the concept of GESI and related issues.
LI 1.2 Plan teaching and learning activities that integrate the concept of GESI.

LI 1.3 Plan activities that help learners to understand GESI responsiveness and apply them during learning.

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LI 1.3 Plan activities that help learners to understand GESI responsiveness and apply them during learning.

1.3 Ask teachers to explain what GESI means (NTS 3i).

Gender, Equality and Social Inclusion (GESI) is a concept that addresses unequal power relations experienced by people on the grounds of gender, wealth, ability, location, ethnicity, language and agency or a combination of these dimensions.

(T-TEL Gender Handbook for Teaching Practice Mentors,

1.4 Using talk for learning strategies (concept cartoons, storytelling, role play, discussion, etc.), ask teachers in their subject groups to explain any **two** concepts related to GESI and how each concept is linked to education. Allow teachers to use their phones/laptops to do the search (NTS 3g, 3i and 3j).

E.g.

2015.)

Social exclusion: Persons with disabilities may be excluded from various activities due to their inability to participate in such activities. If no adjustment is made to address the limitation, they will remain excluded.

In education, exclusion may occur if the classroom is located at a place where it is not accessible to learners in wheelchairs or if the teacher uses a teaching method (e.g., discussion) that is not accessible to learners with special educational needs (SEN) (such as those with hearing impairment).

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1.4 In your subject groups, use talk for learning strategies to explain any **two** concepts related to GESI and how each concept is linked to education. (You may use your phones/laptops to do the search) (NTS 3g, 3i and 3j).

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1.5 Ask one teacher to read aloud the notes on GESI below: **Gender** is the relationship between females and males and the roles and responsibilities they have in society. For example, in Ghana, it is socially accepted that cooking is the role of women and providing upkeep money for the family is the role of men.

**Equality** is creating equal opportunities for males and females. It is a fundamental right, and it is often the GOAL.

**Equity** refers to a fair sharing of resources, opportunities and benefits according to a given framework. It is often the outcome of the GOAL. It is one of the measures of equality, but not the only one.

**Note** that Equity is the process of achieving Equality, which is the outcome (T-TEL Gender Handbook for Teaching Practice Mentors, 2015).

Inclusion is the process of valuing all individuals and leveraging their diverse talent, not in spite of their differences, but because of their differences. For example, ensuring that all learners (boys, girls including SEN) are given equal opportunities to participate in the classroom.

**Gender Equality** is a state where males and females have equal rights, life prospects and opportunities to shape their own lives and contribute to society.

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	Casial Inclusion is the process of	Cocial Inclusion is the process	
	Social Inclusion is the process of improving the terms of participation for people who are disadvantaged, through enhancing opportunities and access to resources.	Social Inclusion is the process of improving the terms of participation for people who are disadvantaged, through enhancing opportunities and access to resources.	
	1.6 Ask teachers to reflect on their understanding of GESI and justify the need for GESI in education (NTS 1a, 1c, 1f, 3f, 3h and 3i).	1.6 Reflect on your understanding of GESI and justify its importance in education (NTS 1a, 1c, 1f, 3f, 3h and 3i).	
	E.g. The classroom and school environment have been skewed in ways that condone gender bias and promote exclusion. Male characters are often represented more than female characters in teaching/learning materials (TLMs) and textbooks.	E.g. The classroom and school environment have been skewed in ways that condone gender bias and promote exclusion. Male characters are often represented more than female characters in teaching/learning materials (TLMs) and textbooks.	
	Persons with SEN are often disadvantaged during some classroom activities: the visually impaired learner loses out when pictures are used. The hearing-impaired learner loses out when only verbal language is used.		
2. Overcoming GESI related misconceptions, negative perceptions, stereotypes and other challenges	2.1 Ask teachers to identify and discuss how the GESI concepts they have been introduced to in the session could be useful in their teaching and general school life (NTS 2f, 3g, 3k, 3l, 3m and 3n).	2.1 Identify and discuss how the GESI concepts introduced in the session could be useful in your teaching and general school life (NTS 2f, 3k, 3l, 3m and 3n).	20 mins
	E.g. a) Inclusion: mix ability/gender grouping; involving all categories of learners in every teaching activity.	E.g. Inclusion: mix ability/gender grouping; involving all categories of learners in every teaching activity.	
	b) Equity: providing support and resources in line with the needs of each learner.		
	2.2 Using think-pair-share, ask teachers to identify possible barriers to learning in relation to	2.2 Reflect individually, share with a colleague and then the entire group possible barriers	

GESI and how to address them (NTS 3f, 3m).

E.g.

Stereotypes: Certain roles are for specific gender; boys are brave and can dissect rodents in science lessons more easily than girls while girls are better cooks than boys. This can be addressed by citing instances where girls demonstrate bravery and boys have been better cooks.

Negative perception: Persons with special educational needs are low achievers. This can be addressed by giving examples of persons with special education needs who have excelled in various aspects of life. An example is Farida Bedwei - a lady living with cerebral palsy who is a software engineer and co-founder of Logiciel, a fin-tech company in Ghana.

Dr. Henry Seidu Daanaa, a person with visual impairment who is a lawyer, a former Minister of Chieftaincy and Traditional Affairs in Ghana and a consultant

(Teachers may share their experiences of unfair treatment/unconscious biases that constitute barriers to GESI).

2.3 Ask teachers to identify and share GESI responsive practices that can help in creating GESI friendly school and classroom environments in the context of second cycle institutions (NTS 1c, 3e, 3g and 3j).

to learning in relation to GESI and how to address them (NTS 3f, 3m).

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(Teachers may share their experiences of unfair treatment/unconscious biases that constitute barriers to GESI).

2.3 Identify and share GESI responsive practices that can help in creating GESI friendly school and classroom environments in the context of second cycle institutions (NTS 1c, 3e, 3g and 3j).

			T _	
		E.g. a) Involving men and women equally in decision making b) ensuring that all school facilities are accessible to everyone (abled bodied and persons with disability)	<ul> <li>E.g.</li> <li>a) Involving men and women equally in decision making</li> <li>b) ensuring that all school facilities are accessible to everyone (abled bodied and persons with disability, etc.)</li> </ul>	
		c) Equitable allocation of resources among all school actors (males, females, minority groups, etc.	c) Equitable allocation of resources among all school actors (males, females, minority groups, etc.	
		d) Leadership Positions: School prefects are mostly boys; girls and learners with special education needs could equally be appointed school prefects.		
3.	Implementing	3.1 Ask teachers to discuss in	3.1 Discuss in your subject	30 mins
	GESI in	their subject groups and come	groups and come out with	
	teaching,	out with strategies on how GESI	strategies on how GESI can be	
	learning and	can be integrated in their	integrated in your specific	
	assessment.	specific subject areas (NTS 1a,	subject areas (NTS 1a, 3e and	
	assessificite.	3e and 3g).	3g).	
		Se and Sg).	Jg/.	
		E.g. a) Using multiple methods (question and answer, discussion, videos, role play, etc.) in lessons to cater for different learning styles	E.g. a) Using multiple methods (question and answer, discussion, videos, role play, etc.) in lessons to cater for different learning styles	
		b) Using different learning resources (audio, visuals, audio-visuals, tactile, etc.) to cater for different learning styles	b) Using different learning resources (audio, visuals, audio-visuals, tactile, etc.) to cater for different learning styles	
		c) Using different assessment methods (written assignments, oral assessment, online assessment, etc.) to cater for different learning styles	c) Using different assessment methods (written assignments, oral assessment, online assessment, etc.) to cater for different learning styles	
		d) Making reasonable adjustments to tasks and		

assessments to reflect the different abilities of learners.

3.2 Lead teachers to identify and discuss possible strategies to make projects and portfolios GESI responsive (NTS 1a, 3a).

3.2 identify and discuss possible strategies to make projects and portfolios GESI responsive (NTS 1a, 3a).

Eg.

- a) Equitable distribution of relevant resources for projects
- b) Ensure projects' content does not portray GESI biases and stereotypes.
- c) In grouping learners for projects, ensure mix ability/gender groupings

### Eg.

a) Equitable distribution of relevant resources for projects

b) Ensure projects' content does not portray GESI biases and stereotypes.

### Note:

Remind teachers to consciously ensure GESI responsiveness in conducting continuous assessment in their various disciplines.

Eg

- a) Ensure that leadership roles are assigned equally among females, males and learners with special education needs (SEN) when assessments (projects) are done in groups.
- b) Ensure equitable distribution of resources among male learners and female learners including SEN learners.
- 3.3 Ask teachers in their subject groups, to identify and discuss the links to GESI resources such as the Gender Handbook for Second Cycle Schools and T-TEL Gender Handbook for Teaching Practice Mentors (NTS 3h, 3j).

### Note:

Make conscious efforts to ensure GESI responsiveness in conducting continuous assessment in your subject area

Eg

Ensure that leadership roles are assigned equally among females, males and learners with special education needs (SEN) when assessments (projects) are done in groups.

3.3 identify and discuss the links to GESI resources such as the Gender Handbook for Second Cycle Schools and T-TEL Gender Handbook for Teaching Practice Mentors (NTS 3h, 3j).

		F	r	
		E.g.	E.g.	
		https://campaignforeducation.o	https://campaignforeducation.	
		rg/en/press-centre/an-equal-	org/en/press-centre/an-equal-	
		world-is-an-enabled-	world-is-an-enabled-	
		world?gclid=EAlalQobChMliPqFx	world?gclid=EAIaIQobChMIiPqF	
		8iW9wIVmpntCh213wroEAAYBC	x8iW9wIVmpntCh213wroEAAY	
		AAEglicfD BwE	BCAAEgljcfD BwE	
		https://plan-	https://plan-	
		international.org/education/incl	international.org/education/inc	
		usive-education-children-	lusive-education-children-	
		disability/?gclid=EAIaIQobChMI3	disability/?gclid=EAlalQobChMI	
		Oul0cmW9wIVToFQBh1Wnw0a	30ul0cmW9wlVToFQBh1Wnw	
		EAAYASAAEgIN3PD BWE	OaEAAYASAAEgIN3PD BwE	
		<u> </u>		
		https://www.worldvisionphilant	https://www.worldvisionphilan	
		hropy.org/resources/gesi	thropy.org/resources/gesi	
		https://www.researchgate.net/		
		publication/350109345 Gender		
		Equality and Social Inclusion		
		DME Toolkit		
		DIVIE TOOIRIL		
		3.4 Ask a teacher to model a	3.4 Model a selected activity in	
		selected activity in a teaching	a teaching situation that is	
		situation that is linked to any of	linked to any of the LIs of the	
		the LIs of the session.	session.	
4.	Evaluation	4.1 Ask teachers to identify any	4.1 Reflect and write what you	15 mins
٠.	and review of	outstanding issues relating to	have learnt in the session (NTS	13 1111113
			-	
	session:	the session for clarification (NTS	1a, 3l and 3n).	
_	L.L C.C	1a, 3l and 3n).		
	Identifying			
	and	4.2 Ask teachers to share what	4.2 Share what you have learnt	
	addressing	they have learnt with the	with the larger group.	
	any	larger group.		
	outstanding			
	issues relating	4.3 Ask teachers to identify a	4.3 Identify a critical friend to	
	to the	critical friend to observe their	observe your lesson to provide	
	lesson/s for	lesson to provide feedback on	feedback on how you have	
	clarification	how they have used GESI in the	used GESI in the lesson and	
		lesson and report at the next	report at the next session	
>	Noting that	session		
	teachers need			
	to identify	4.4 Remind teachers to read	4.4 Read session 2 from the	
	critical friends	Session 2 from the PLC	PLC Handbook in preparation	
	to observe	Handbook in preparation for the	for the next session.	
	lessons and	next session.		
	report at next	4.5 Remind teachers to come to	4.5 Come to the next session	
	session	the next session (i.e., Session 2)	(i.e., Session 2) with their	
	- <del> </del>	with their phones, laptops and	phones, laptops and other ICT	
		other ICT devices for the session	devices for the session on ICT.	
		on ICT.	devices for the session on left.	
i		on ici.		

## PLC Session 2: Information and Communications Technology (ICT)

		Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1.	Review of Previous Session and introduction to new session	1.1 Start the session with an ice breaker and ask teachers to review the previous session by writing one thing they learnt in the session and share it with a colleague.	1.1. Review the previous session by writing one thing you learnt in the session and share it with a colleague.	25 mins
		1.2 Introduce the session by asking one teacher to read the purpose, preamble, learning outcomes (LOs) and learning indicators (LIs) of the session.	1.2 Read the purpose, preamble, learning outcomes (LOs) and learning indicators (LIs) of the session.	
		a. Purpose of ICT in teaching and learning: As indicated in the LOs and LIs below, this session is intended to:	a. Purpose of ICT in teaching and learning: As indicated in the LOs and LIs below, this session is intended to:	
		<ul> <li>i. Help teachers plan and teach learner-centred lessons using ICT.</li> <li>ii. Provide teachers access to and use of ICT tools for assessment for learning, assessment of learning and assessment of learning.</li> <li>iii. Introduce teachers to the use of ICT for the development of 21st century skills.</li> <li>iv. Guide teachers in the use of ICT software and hardware for teaching and learning.</li> </ul>	<ul> <li>i. Help teachers plan and teach learner-centred lessons using ICT.</li> <li>ii. Provide teachers access to and use of ICT tools for assessment for learning, assessment as learning and assessment of learning.</li> <li>iii. Introduce teachers to the use of ICT for the development of 21st century skills.</li> <li>iv. Guide teachers in the use of ICT software and hardware for teaching and learning.</li> </ul>	
		b. Preamble Teachers in the 21st century are facing new challenges because of the expanding possibilities of ICT integration in every aspect of the school curriculum. Irrespective of the level a teacher operates at with regard to ICT mediated teaching and	b. Preamble Teachers in the 21st century are facing new challenges because of the expanding possibilities of ICT integration in every aspect of the school curriculum. Irrespective of the level a teacher operates, at with regard to ICT mediated	

learning, ICTs have the capabilities to bring several benefits to teachers and students. The benefits may include shared learning resources, shared learning spaces and promotion of cooperative and collaborative learning. They also provide a base for autonomous learning.

Welliver's Instructional
Transformation Model sets goals
and expectations for all teachers
at whatever stage they are
starting at. The five hierarchical
stages, which have been
explained below, start with
familiarization, then utilization,
integration, reorientation and
finally revolution.

(www.welliversinstructionalmod el.com, published 8<sup>th</sup> June, 2011, retrieved 8<sup>th</sup> April, 2022)

- Familiarization: This is when teachers become aware of technology and its potential uses.
- ii. **Utilization:** This is where teachers use technology, but minor problems will cause them to discontinue its use.
- iii. Integration: Here, technology becomes essential for the educational process and teachers are constantly thinking of new ways to use technology in their classrooms.
- iv. Reorientation: At this level, teachers begin to rethink the educational goals of the classroom with the use of technology.

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- iv. Reorientation: At this level, teachers begin to rethink the educational goals of the classroom with the use of technology.

v. Revolution: This is the highest level where the evolving classroom becomes completely integrated with technology in all subject areas. Technology becomes an invisible tool that is seamlessly woven into the teaching and learning process.

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Technology becomes an invisible tool that is seamlessly woven into the teaching and learning process.

### Note:

LO: Learning Outcome: This is the expected knowledge, understanding, skills, etc., to be acquired at the end of a lesson (Common Core Programme Curriculum).

LI: Learning Indicator: This is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products (Common Core Programme Curriculum).

LO 1: Demonstrate the use of basic ICT tools for planning lessons (NTS 3a, 3c).

LI 1.1 Mention and describe at least three basic ICT tools that can be used in planning a lesson.

LI 1.2 Perform basic lesson planning tasks using an ICT tool.

LO 2: Demonstrate knowledge and understanding of the basic ICT tools and their impact on teaching and learning (NTS 3g, 3h, 3j, 3n, 3k, and 3p).

LI 2.1 Mention and describe at least three basic ICT tools and how to use them in teaching and learning.

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LI 2.1 Mention and describe at least three basic ICT tools and how to use them in teaching and learning.

- LI 2.2 Analyse and evaluate the impact of ICT on teaching and learning
- LO 3: Demonstrate the use of basic ICT tools in assessment (3j, 3k).
- LI 3.1 Mention and describe at least three basic ICT tools that can be used to assess both teaching and learning.
- LI 3.2 Perform lesson assessment tasks using ICT tools.
- LO 4: Demonstrate understanding of how ICT tools enhance the quality of research activities (NTS 3b).
- LI 4.1 List at least four ICT tools used in research. LI 4.2 Perform basic research
- tasks using ICT tools.
- 1.3 Ask teachers to mention at least three basic ICT tools and what they are used for.

E.g.

- a) Desktop Computers
   (Preparation of document, editing, etc.)
- b) Laptops (preparation and presentation, etc.)
- c) Calculators (mathematical and scientific analysis, etc.)
- d) Projectors (Presentations, etc.)
- e) Printers (Printing and photocopying of documents, etc.)
- f) Browsers (e.g., Firefox, google chrome, opera-

- LI 2.2 Analyse and evaluate the impact of ICT on teaching and learning
- LO 3: Demonstrate the use of basic ICT tools in assessment (3j, 3k).
- LI 3.1 Mention and describe at least three basic ICT tools that can be used to assess both teaching and learning.
- LI 3.2 Perform lesson assessment using an ICT tool.
- LO 4: Demonstrate understanding of how ICT tools enhance the quality of research activities (NTS 3b).
- LI 4.1 List at least four ICT tools used in research.
  LI 4.2 Perform basic research tasks using ICT tools.
- 1.3 Mention and at least three basic ICT tools and how to use them.

- a) Desktop Computers
   (Preparation of document, editing, etc.)
- b) Laptops (preparation and presentation, etc.)
- c) Calculators (mathematical and scientific analysis, etc.)

mini, Microsoft edge etc, for online search.)

1.4 Ask teachers to distinguish between computer software and hardware by mentioning at least two of each.

1.4 distinguish between computer hardware and software by mentioning at least two of each.

### Software

### E.g.

- *a)* Office Professional E.g. XP
- b) Good photo software e.g. Microsoft Digital Photo Suite
- c) "Photostory 2 -- comes with service pack 2
- d) Inspiration
- e) Smart Notebook
- f) United Streaming subscription

### Software

### E.g.

- a) Office Professional e.g., XP
- b) Good photo software e.g., Microsoft Digital Photo Suite
- c) "Photostory 2 -- comes with service pack 2
- d) Inspiration

### Hardware

### E.g.

- a) Flat Screen monitor
- b) Printer. e.g., HP
- c) CD/DVD RW drive(s)
- d) USB ports
- e) Scanner e.g., Epson brand
- f) Digital camera e.g. Canon
- g) External storage an external hard drive to back up data
- h) Portable storage USB flash drive, 2 GB minimum.
- i) Palm or other handheld device to keep schedules, dates, reminders, and store pictures and music. E.g. Tungsten Palm
- j) Smart board or Smart airliner, with projection unit for classroom use.
- k) Classroom Performance System (CPS) also for classroom use.

### **Hardware**

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1.5 Ask teachers in groups to share their views about how to create, edit, format, save and print documents using various productivity tools.

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E.q. Creating a new page in Word, PowerPoint, Excel, etc. Editing a document using track changes Saving a document using "save as" or clicking on the 'save' icon Printing only odd pages of a Word document Printing a document on both

E.g. Creating a new page in Word, PowerPoint, Excel, etc. Editing a document using track changes Saving a document using "save as" or clicking on the 'save' icon Printing only odd pages of a Word document

1.6 Ask teachers who are conversant with and have utilized ICT tool(s) in their lessons to share their experiences of the integration and impact of ICT tools in their teaching (NTS 3j).

sides of a sheet of paper

1.6 Share your experiences of the integration and impact of ICT tools in your teaching.

a) Open Educational

Resources (OERs) i.e.,

open courseware,

learning models,

- a) Open Educational Resources (OERs) i.e. open courseware, learning models, streaming videos, online tutorials, open access journals, digital learning presentations and make them more interesting
- E.g.
- streaming videos, online tutorials, open access journals, digital learning objects all improve lesson objects all improve lesson presentations and make them more interesting b) The use of projector and
  - b) The use of projector and laptops for lesson presentation saves the time for writing on the board and extends quality time on activities to enhance learning
- laptops for lesson presentation saves time for writing on the board and extends quality time on activities to enhance learning
- c) Digital learning materials, e.g., etextbooks, e-workbooks,

	e-tests and educational videos all help in		
	improving understanding		
	of lessons		
	1.7 Ask teachers in groups to	1.7 Discuss in groups how to	
	share their views on the use	assess learning using ICT tools.	
	of specific ICT tools to search for teaching, learning and		
	assessment activities.		
	E.g.	E.g.	
	a) Ai. Google – provides	a) Using electronic grading	
	education on artificial	rubric – a guide for	
	intelligence	assessing work manually or electronically	
		,	
	b) Academia.edu – provides access to academic	b) Canvas assignments – e.g., quizzes, submitted online	
	papers	quizzes, submitted omine	
	a) Edulantia manidan mana	a) Disciplina detection and	
	c) Edulastic – provides access to interactive formative	c) Plagiarism detection – used to check how original a	
	assessment activities	piece of work is	
	d) YouTube videos	d) QuizBot – creating quizzes	
	d) Tourube videos	and sharing them with	
		others online	
	e) Google Forms – used in	e) ClassMarker – for online	
	surveys and can analyse	testing	
	results in real time		
	f) Survey monkey – used to		
	conduct online surveys		
Overcoming misconceptions,	1.8 Ask teachers to work in pairs to discuss misconceptions and	1.8 In pairs, discuss misconceptions in teaching and	
stereotypes,	stereotypes in teaching and	learning with ICT tool (s) and	
negative	learning with ICT tool(s) and	share possible ways of	
perceptions about ICT	share ideas on how to address them.	addressing them.	
	them.		
	E.g.	E.g.	
	a) Computers can do everything a teacher can do.	a) Computers can do everything a teacher can	
	This is a misconception	do. This is a misconception	
	which must be addressed by	which must be addressed	
	finding examples of what teachers can do but	by finding examples of what teachers can do but	
	computers cannot do- i.e.,	computers cannot do- i.e.,	
	teachers take into	teachers take into	

- consideration students' feelings when teaching them.
- b) ICT is meant for male learners. This misconception can be addressed by creating awareness that this is not true, thus, invite a female ICT expert to have a talk with both teachers and students.
- c) ICT mediated education results in unequal access to quality education. This negative perception can be addressed by providing offline versions of online tasks
- 1.9 Ask teachers to outline possible challenging areas in teaching with ICT tool(s) taking into consideration GESI.

E.g.

- a) Identifying areas in the curriculum where GESI stereotypes are reinforced through ICT. An example is where male learners tend to dominate computer use in the classroom. Teachers should ensure equitable access to computer use in the classroom.
- b) Some learners copy
  verbatim essays from the
  Internet and present them
  as their own work. Teachers
  may be able to detect this
  with the appropriate
  plagiarism tools
- c) Some learners have no access to ICT devices so they are not able to complete assignments that require the use of such devices. Using

- consideration students' feelings when teaching them.
- b) ICT is meant for male learners. This misconception can be addressed by creating awareness that this is not true, thus, invite a female ICT expert to have a talk with both teachers and students

1.9 Outline possible challenging areas in teaching with ICT tool(s) taking into consideration GESI.

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  Internet and present them
  as their own work.
  Teachers may be able to
  detect this with the
  appropriate plagiarism
  tools

				1	
		group assignments can			
		encourage collaborative			
		work and sharing of ICT			
		devices.			
2.	Planning for	2.1 In groups, ask teachers to	2.1 In groups, share your	20	mins
	teaching,	share their views on how to	views on how to plan lessons		
	learning and	plan lessons using ICT tools.	using ICT tools.		
	assessment	_	_		
	activities for	E.g.	E.g.		
	the lesson/s	In planning a lesson, a	In planning a lesson, a		
	making links	teacher will need the	teacher will need the		
	to the	following materials and	following materials and		
	secondary	electronic devices to develop	electronic devices to develop		
	school	structured learning activities:	structured learning activities:		
	curriculum	-) 0	a)		
		a) Resources –	e) Resources –		
		printer/photocopier,	printer/photocopier, printed task sheets, links		
		printed task sheets, links to videos, slides, memory	to videos, slides, memory		
		stick, calculator, etc.	stick, calculator, etc.		
		b) Different presentation	f) Different presentation		
		modes – PowerPoint	modes – PowerPoint		
		presentation, projecting	presentation, projecting		
		electronic diagrams and	electronic diagrams and		
		charts, audio recorded	charts, audio recorded		
		tasks, etc.	tasks, etc.		
		c) Different assessment	g) Different assessment		
		methods – completing	methods – completing		
		task sheets, using printed	task sheets, using		
		mark schemes for self and	printed mark schemes		
		peer assessment,	for self and peer		
		answering audio recorded	assessment, answering		
		questions, using	audio recorded		
		calculators to check	questions, using		
		answers, etc.	calculators to check		
		d) Using printed task sheets	answers, etc.		
		in groupwork to develop	h) Using printed task sheets		
		communication and	in groupwork to develop		
		collaboration skills,	communication and		
		problem solving skills, etc.	collaboration skills,		
			problem solving skills,		
			etc.		
		2.2. Ask teachers discuss	2.2 Discuss general ICT tools for		
		general ICT tools/Apps for	teaching and learning.		
		planning teaching and learning			
		and ask them to give examples			
		of how they are used.			
		E.g.	E.g.		
		Desktop and laptop computers	Desktop and laptop computers		
		(used to write lesson plans and	(used to write lesson plans and		

	develop teaching and learning materials), projector, digital cameras, printer, photocopier, tablets, popplet, pen drive, ipods, ipads, webboards, scanners, microphones, interactive white board, DVDs and CDs flash discs, video games, etc.	develop teaching and learning materials), projector, digital cameras, printer, photocopier, tablets, popplet, pen drive, ipods, ipads, webboards, scanners, microphones, interactive white board, DVDs and CDs flash discs, video games, etc.	
	Other examples are: Geomaths, Maths kids, Microsoft maths solver, Photomaths, Scratch, Kasahorow, Soundsright, Coral draw, Photoshop Autocard, Paint, Sunflower Remote Sensing and Geographic Information System, Telegram, WhatsApp, Encyclopaedia Britannica Microsoft Encarta, Recipe App, etc.		
	2.3. Ask teachers to discuss the appropriate ICT tools to support students with Special Education Needs (SEN) when planning teaching, learning and assessment (NTS 3f, 3o).	2.3. Discuss the appropriate ICT tools to support students with Special Education Needs (SEN) during teaching, learning and assessment (NTS, 3f, 3o).	
	E.g. Teachers dealing with the SEN will require special ICT tools like; text magnifier, head wands, keyboard for cerebral palsy, braille, typing aids, large prints, audio books, etc.	E.g. Teachers dealing with the SEN will require special ICT tools like; text magnifier, head wands, etc.	
<ul><li>3. Teaching, learning and assessment</li><li>Reading and</li></ul>	3.1. Ask teachers to identify at least two possible gaps in the use of ICT tools in their lesson delivery and discuss possible ways of addressing them.	3.1. Identify at least two possible gaps in the use of ICT tools in your lesson delivery and discuss possible ways of addressing them.	30mins
discussion of the teaching and learning activities  Noting and addressing areas where teachers may require	E.g. a) Possible gap: Some teachers may not be IT literate Possible solution: Designing ICT training packages to equip teachers with the necessary knowledge and skills in using ICT tools in	E.g. a) Possible gap: Some teachers may not be IT literate Possible solution: Designing ICT training packages to equip teachers with the necessary knowledge and	
clarification	lesson delivery		

- Noting opportunities for making explicit links to the Secondary /Technical Vocational Curriculum
- Noting opportunities for integrating: GESI responsivenes s and ICT and 21st C skills
- Reading, discussion, and identification of continuous assessment opportunities in the lesson. **Each lesson** should include at least two opportunities to use continuous assessment to support student learning
- Resources:
- Links to
   external
   reference
   material:
   literature, on
   web,
   YouTube,
   physical
   resources,

- b) Possible gap: unavailability
   of ICT tools or resources for
   teachers to use in their
   lesson delivery.
   Possible solution: Provision
   of the ICT tools and
   resources in the various
   schools to improve teaching
   and learning
- c) Possible gap: lack of teachers' confidence to use ICT tools in teaching and learning Possible solution: introduce capacity building training for teachers in the use of ICT tools in teaching and learning.
- 3.2 In groups share your views on the use of specific ICT tools to search for teaching, learning and assessment activities.
- E.g.
- a) Ai. Google provides education on artificial intelligence
- b) Academia.edu provides access to academic papers
- c) Edulastic provides access to interactive formative assessment activities
- d) YouTube videos
- e) Others are:
  - i. Socrative quizzes and questions with realtime grading.
  - ii. Classmarker- quizzes and questions with realtime grading

- skills in using ICT tools in lesson delivery
- b) Possible gap: unavailability of ICT tools or resources for teachers to use in their lesson delivery.
  Possible solution: Provision of the ICT tools and resources in the various schools to improve teaching and learning

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- d) Others are:
  - i. Socrative quizzes and questions with realtime grading.
  - ii. **Classmarker** quizzes and questions with real-time grading
- iii. **Google Forms** easy to use.

- power point; how they should be used.
- Consideration needs to be given to local availability and guidance on any power point presentations , TLM or other resources which need to be developed to support learning
- iii. **Google Forms** easy to use.
- iv. **Mentimeter** pre-built education templates.
- v. **Kahoot** game-based assessment tool.
- vi. Links application of ICT tools in the teaching and learning process such as

### https://www.youtube.com/wat ch?v=k8nMh71ky4Y

3.3 Ask teachers to discuss in their subject groups and come out with at least three strategies on how ICT can be integrated in their specific subject areas (NTS 3i, 3j). (EXTENSION ACTIVITY)

E.g.

- a) The use of computer simulation in science teaching presentations
- b) In mathematics, Excel spreadsheet can be used to present data and draw charts
- c) The use of computers and ICT applications such as coral draw and publisher to teach TVET students.
- d) The use of window-eye, Jon Access With Speech (JAWS), TOBII Eye Tracking System, Non-Visual Desktop Access (NVDA) in teaching students who are visually impaired.
- e) Other sources:Smart phones, calculators, projectors,
   Office 365 vs G-Suite for education, Google Meet for online teaching, Google
   Classroom for online teaching and learning, etc.

- iv. **Mentimeter** pre-built education templates.
- v. Links application of ICT tools in the teaching and learning process such as

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tch?v=k8nMh71ky4Y

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3.4 Ask teachers to discuss at least two possible strategies that use ICT tools in a GESI responsive manner in a teaching context.

3.4 Discuss at least two possible strategies that use ICT tools in a GESI responsive manner to develop these skills in learners.

E.g.

- a) Giving all learners including SEN equal access to computers.
- b) Considering GESI responsive seating arrangement when delivering lessons using ICT by ensuring that learners with visual or hearing impairment are seated short distances for the screen
- c) Providing other ICT tools such as window-eye, Jon Access With Speech (JAWS), TOBII Eye Tracking System, etc., to support learners who are visually impaired, etc.
- d) Providing visually impaired learners with large prints of texts
- 3.5 Ask teachers to mention at least three 21<sup>st</sup> century skills and ICT tools that can be integrated during teaching and learning to develop these skills in learners.

E.g.

- a) Building communication skills with the use of ICT tools such as computers, projectors, etc., to do PowerPoint presentation.
- b) Building collaborative skills through the use of electronic media (e.g., group activities through the use of WhatsApp)

E.g.

- a) Giving all learners including SEN equal access to computers
- b) Considering GESI
  responsive seating
  arrangement when
  delivering lessons using ICT
  by ensuring that learners
  with visual or hearing
  impairment are seated
  short distances for the
  screen
- c) Providing other ICT tools such as window-eye, Jon Access With Speech (JAWS), TOBII Eye Tracking System, etc., to support learners who are visually impaired, etc.

3.5 Mention at least three 21<sup>st</sup> century skills and ICT tools that can be integrated during teaching and learning to develop these skills in learners.

- a) Building communication skills with the use of ICT tools such as computers, projectors, etc
- b) Building collaborative skills through the use of electronic media (e.g., group activities through the use of WhatsApp)

- c) Enhancing research capabilities or skills through the use of internet search engines such as Google Chrome, Firefox browsers, etc.
- d) Improving creativity skills through the use of YouTube videos, etc.
- e) The following links can be used to access information on 21<sup>st</sup> century skills:
  - i. Collaborative problem solving
     https://youtu.be/cnkKHL dyGE
  - ii. Creativity
     https://www.youtube.co
     m/watch?v=qV7DiTFdtv
     w
  - iii. **Hands-on learning**<a href="https://youtu.be/vYUNfJ9lKzs">https://youtu.be/vYUNfJ9lKzs</a>
  - iv. Effective written and oral communication
    <a href="https://www.youtube.co">https://www.youtube.co</a>
    <a href="mailto:m/watch?v=D5hMN\_Xk">m/watch?v=D5hMN\_Xk</a>
    <a href="mailto:PQA">PQA</a>
  - v. **Ethical decision making**<a href="https://youtu.be/lwk8d">https://youtu.be/lwk8d</a>
    GFn1tY
  - vi. Information and media literacy https://youtu.be/bjYhm
    TC3lrc
- vii. Critical thinking

  https://youtu.be/y7iME

  H7jGFk

  https://youtu.be/88DoG

  rqEuJk
- viii. Leadership

- c) The following links can be used to access information on 21<sup>st</sup> century skills:
  - i. Collaborative problem solving
     https://youtu.be/cnkKH
     L\_dyGE
  - ii. Creativity
     https://www.youtube.c
     om/watch?v=qV7DiTFd
     tvw
  - iii. Effective written and oral communication <a href="https://www.youtube.c">https://www.youtube.c</a> om/watch?v=D5hMN\_XkPQA
  - iv. Information and media literacy https://youtu.be/bjYhm
    TC3Irc
  - v. **Critical thinking**<a href="https://youtu.be/y7iME">https://youtu.be/y7iME</a>
    <a href="https://youtu.be/88Do">https://youtu.be/88Do</a>
    <a href="https://youtu.be/88Do">GrqEuJk</a>
  - vi. **Leadership**<a href="https://youtu.be/-">https://youtu.be/-</a>
    <a href="https://youtu.be/-">NF10F6bX q</a>
- vii. Personal responsibility and initiative <a href="https://youtu.be/nRE13">https://youtu.be/nRE13</a> 1ErclM3.5

### https://youtu.be/-NF10F6bX\_q

- ix. Personal responsibility
  and initiative
  <a href="https://youtu.be/nRE13">https://youtu.be/nRE13</a>
  1ErclM
- 3.6 Ask teachers to discuss in groups how to assess learning using ICT tools.

3.6 Discuss in groups how to assess learning using ICT tools.

### E.g.

- a) Using electronic grading rubric – a guide for assessing work manually or electronically
- b) Canvas assignments e.g., quizzes, submitted online
- c) Plagiarism detection used to check how original a piece of work is
- d) QuizBot creating quizzes and sharing them with others online
- e) ClassMarker for online testing
- f) Assessing learning using social media platforms
- g) Zoom/Teams interviews
- 3.7 In subject groups, ask teachers to come out with at least four possible assessment tools in ICT to support them in assessing learners.

### E.g.

In English language, tools for checking grammar errors online, tools for checking plagiarism, etc.

In science, tools will include those for simulating how organs

### E.g.

- a) Using electronic grading rubric – a guide for assessing work manually or electronically
- b) Canvas assignments e.g., quizzes, submitted online
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### E.g.

In English language, tools will include those for checking grammar errors online and those for checking plagiarism, etc.

		and a strong and the third		
		and systems work in the body,		
		etc.		
		3.8 Ask a teacher to model a	3.8 Model a teaching activity	
		teaching activity using any ICT	using any ICT tool(s) of your	
		tool(s) of their choice.	choice. (EXTENSION ACTIVITY)	
		(EXTENSION ACTIVITY)		
4. 1	<b>Evaluation and</b>	4.1 Ask teachers to identify any	4.1 Identify any outstanding	15 mins
rev	iew of	outstanding issue(s) relating to	issue(s) relating to the session	
ses	ssion:	the session for clarification.	for clarification.	
>	Identifying			
	and	4.2. Ask teachers to mention at	4.2 Mention at least four ICT	
	addressing	least four ICT tools that can be	tools that can be used in the	
	any	used in the delivery of their	delivery of your lessons.	
	outstanding	lessons.		
	issues relating			
	to the	4.3 Ask teachers to identify a	4.3 Identify a critical friend who	
	lesson/s for	critical friend who will observe	will observe your lesson and	
	clarification	their lesson and give them	give you feedback on how you	
		feedback on how they integrate	integrate ICT in the lesson.	
>	Noting that	ICT in the lesson.		
	teachers need			
	to identify	4.4 Remind teachers to read	4.4 Remember to read session	
	critical friends	session 3 of the PLC Handbook	3 from the PLC Handbook in	
	to observe	in preparation for the next	preparation for the next	
	lessons and	session.	session.	
	report at next			
	session		4.5 Come to the next session	
		4.5 Remind teachers to come to	(i.e., Session 3) with the	
		the next session (i.e., Session 3)	National Teachers' Standard	
		with the <b>National Teachers</b> '	Guidelines for the next PLC	
		Standard Guidelines for the	sessions	
		next PLC sessions	333.3.13	
		HEALT EC 3C33IOH3		

PLC Sess	PLC Session 3: Introduction to the National Teachers' Standards			
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session	
1. Review of previous session and introduction to new session	1.1 Ask a teacher who observed a lesson of a critical friend to share their findings with the group.	1.1 Share your findings of the lesson you observed your critical friend teach with the group.	25 mins	
NB: The guidance for PLC Coordinator should identify, address, and provide explanations for any areas where teachers might	1.2 Introduce the new session and inform teachers that the session looks at an overview of the National Teachers' Standards (NTS) and that detailed sessions on the various domains will be covered in subsequent sessions.	1.2 Listen to information on the session and note the relationship between Session 3 and the subsequent sessions.		
require clarification on an aspect of the lesson.  NB: PLC Coordinator should ask teachers to plan for their teaching	1.3 Ask a teacher to read the learning outcomes (LOs) and learning indicators (LIs) of the session for a discussion of the relationship between the LOs and the LIs with colleagues.  E.g.  The LIs are informed by the LOs, and the latter can be achieved	1.3 Read the learning outcomes (LOs) and learning indicators (LIs) of the session for a discussion of the relationship between the LOs and the LIs with colleagues.		
as they go through the PLC session	Note: LO: Learning Outcome: This is the expected knowledge, understanding, skills, etc., to be acquired at the end of a lesson (Common Core Programme Curriculum).  LI: Learning Indicator: This is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products (Common Core Programme Curriculum).  LO 1: Demonstrate knowledge and understanding of the domains and sub-domains of the NTS.	Note: LO: Learning Outcome: This is the expected knowledge, understanding, skills, etc., to be acquired at the end of a lesson (Common Core Programme Curriculum).  LI: Learning Indicator: This is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products (Common Core Programme Curriculum).  LO 1: Demonstrate knowledge and understanding of the domains and sub-domains of the NTS.		

- LI 1.1 State the three domains of the NTS.
- LI 1.2 State the sub-domains of each domain.
- LI 1.3 Match the sub-domains to their respective domains.
- LO 2: Identify the characteristics of the domains and sub-domains of the NTS.
- LI 2.1 Discuss the characteristics of the domains.
- LI 2.2 Draw a diagram to indicate all the domains and their characteristics.
- LO 3: Demonstrate knowledge and understanding of the philosophy of the NTS and describe its structure and content.
- LI 3.1 State the philosophy of the NTS and list the various documents that spell out the philosophy of the NTS.
- LI 3.2 Explain how the following documents inform the philosophy of the NTS.
- a) Education Act, 2008 (Act 778) repealed with Education Regulatory Bodies Act, 2020 (Act 1023)
- b) Pre-tertiary Teacher
   Professional Development
   and Management Policy
   (PTPDM)
- c) Continental Education Strategy for Africa (CESA)
- d) Sustainable Development Goals (SDGs).
- LI 3.3 Discuss the structure of the NTS.
- LI 3.4 Examine the content of the NTS.

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- LI 3.3 Discuss the structure of the NTS.
- LI 3.4 Examine the content of the NTS.

LO 4: Demonstrate knowledge and understanding of the relevance of cross-cutting issues including Gender Equality and Social Inclusion (GESI), Information and Communications Technology (ICT) and 21<sup>st</sup> century skills and competencies in the NTS. LI 4.1 Identify key cross-cutting issues in the NTS.

LI 4.2 Explain how the crosscutting issues affect teacher professionalism.

LI 4.3 Share experiences on the cross-cutting issues in the classroom.

LI 4.4 Identify the relevant GESI responsive and ICT resources for teaching and learning. LO 5: Analyse how the NTS can guide the planning, teaching and assessment of lessons in secondary schools. LI 5.1 Give examples of how to take cognizance of diverse learners' backgrounds in planning and teaching. LI 5.2 Give examples of varied teaching methods that can address the learning need of learners with different backgrounds LI 5.3 Integrate a variety of assessments modes into teaching to support learning. LO 6: Explore how teachers' training needs regarding the application of the NTS can be addressed.

LI 6.1 Deploy action research in classroom to enhance teaching and learning.

LI 6.2 Use reflective logs in teaching.

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LI 6.1 Deploy action research in classroom to enhance teaching and learning
LI 6.2 Use reflective logs in teaching.

	LI 6.3 Use assessment data to	LI 6.3 Use assessment data to	
	improve teaching and learning.	improve teaching and learning.	
Give recent for	1 / In groups, ask toochers to	1.4 Discuss what you know	=
Give regard for the domains and subdomains of the NTS, etc.	1.4 In groups, ask teachers to discuss what they know about the NTS.	1.4 Discuss what you know about the NTS.	
	E.g. The Standards describe values, attitudes, what teachers should know and be able to do, and used to support the on-going development of teachers once in the classroom.	E.g. The Standards describe values, attitudes, what teachers should know and be able to do, and used to support the on-going development of teachers once in the classroom.	
	The Standards also set out the minimum levels of practice that all trained teachers must reach by the end of their pre-service teacher education course in order to play such a critical role.		
	1.5 Ask one teacher to read the table of contents of the NTS (Refer to In-service NTS Guidelines, n.d., p. 4).	1.5 Read the Table of Contents of the NTS (Refer to In-service NTS Guidelines, n.d., p. 4).	
	1.6 In groups, ask teachers to discuss the following and share their findings with the larger group.	1.6 Discuss the following in groups and share your findings with the larger group.	
	a) What do the Standards stand for? (Refer to Inservice NTS Guidelines, n.d., p. 6).	a) What do the Standards stand for? (Refer to Inservice NTS Guidelines, n.d., p. 6).	
	b) Who are the Standards for? (Refer to In-service NTS Guidelines, n.d., p. 8).	b) Who are the Standards for? (Refer to In-service NTS Guidelines, n.d., p. 8).	
	c) How were the Standards developed? (Refer to Inservice NTS Guidelines, n.d., p. 9).	c) How were the Standards developed? (Refer to In- service NTS Guidelines, n.d., p. 9).	
	d) What is the legal status of the Standards? (Refer to In- service NTS Guidelines, n.d., p. 10).	d) What is the legal status of the teachers' Standards? (Refer to In-service NTS Guidelines, n.d., p. 10).	
	e) What philosophy underpins the Standards?	e) What philosophy underpins the Standards?	

(Refer to In-service NTS Guidelines, n.d., p. 11).

1.7 Ask teachers to identify the Domains and the Sub-Domains of the NTS. (Refer to In-service NTS Guidelines, n.d., pp. 12-15)

(Refer to In-service NTS Guidelines, n.d., p. 11).

1.7 Identify the Domains and the Sub-Domains. (Refer to In-service NTS Guidelines, n.d., pp. 12-15).

#### Note:

The Domains are:

- a) Professional Values and Attitudes
- b) Professional Knowledge
- c) Professional Practice

The sub-domains are:

- Professional development
- Community of practice (Under Professional Values and Attitudes)
- Knowledge of educational framework and curriculum
- Knowledge of learners (Under Professional Knowledge)
- Managing the learning environment
- Teaching and learning
- Assessment (Under Professional Practice)
- 1.8 Ask teachers to think-pairshare on how the Standards are to be used and the roles of Teacher Education Institutions. (Refer to In-service NTS Guidelines, n.d., pp. 17- 18).
- 1.9 In groups, ask teachers to discuss the format of the Standards.
  (Refer to In-service NTS Guidelines, n.d., pp. 19-32).
- 1.10 Ask teachers to identify and discuss the evidence that a teacher has met or can meet the Standards at the appropriate level by looking at the teacher's professional portfolio. (Refer to In-service NTS Guidelines, n.d., pp. 34-35).

- 1.8 Think-pair-share on how the Standards are to be used and the role of Teacher Education Institutions. (Refer to In-service NTS Guidelines, n.d., pp. 17- 18).
- 1.9 Discuss the format of the Standards in your groups. (Refer to In-service NTS Guidelines, n.d., pp. 19-32).
- 1.10 Identify and discuss the evidence that a teacher has met or can meet the Standards at the appropriate level by looking at the teacher's professional portfolio. (Refer to In-service NTS Guidelines, n.d., pp. 34-35).

	Evidence criteria:	Evidence criteria:	<u> </u>
	E.g.	E.g.	
	a) Assignment	a) Assignment	
	b) Examination Results	b) Examination Results	
	c) Lecture Notes	c) Lecture Notes	
	d) Lesson Plan	d) Lesson Plan	
	e) Study Notes		
	f) Assessment Records		
	g) Publications		
	h) Testimonials, etc.		
	1.11 Ask teachers to identify and	1.11 Identify and discuss the	
	discuss the competency	competency requirements of	
	requirements of the various	the various ranks in the Ghana	
	ranks in the Ghana Education	Education Service.	
	Service.	(Refer to In-service NTS	
	(Refer to In-service NTS	Guidelines, n.d., pp. 38-39).	
	Guidelines, n.d., pp. 38-39).	σαιαείπτες, π.α., ρρ. 30-33].	
2. Planning for	2.1 In groups, ask teachers to	2.1. Think-square-share and	20 mins
teaching, learning	think-square- share and prepare	prepare an outline of a lesson	20 111113
and assessment	an outline of a lesson plan that	plan that can be used to teach	
activities for the	can be used to teach a lesson to	a lesson to the NTS in a	
lesson/s making	the NTS in a particular subject in	particular subject in any class	
links to the	any class (NTS 3a).	(NTS 3a).	
	arry class (1415 Sa).	(N13 3a).	
secondary school	E.g. Sample lesson plan in Social	E.g. Sample lesson plan in	
curriculum	Studies:	Social Studies:	
	Refer to Social Studies Teaching syllabus 2010 Year 1.	Refer to Social Studies Teaching syllabus 2010 Year 1.	
	syllubus 2010 Teul 1.	syllubus 2010 Teur 1.	
	An example of an outline plan	An example of an outline plan	
	for teaching based on the 2010	for teaching based on the 2010	
	SHS Social Studies Syllabus*.	SHS Social Studies Syllabus*.	
	,	, , , , , , , , , , , , , , , , , , , ,	
	a) Topic: Self Identity	a) Topic: Self Identity	
	b) Sub-topic: Actions of False Identity	b) Sub-topic: Actions of False Identity	
	c) Objectives: By the end of the lesson the learner will be able to:	c) Objectives: By the end of the lesson the learner will be able to:	
	<ul> <li>i. Explain the term self</li> <li>ii. Identify at least two</li> <li>actions of false identity</li> <li>and their related</li> <li>problems</li> </ul>	<ul> <li>i. Explain the term self</li> <li>ii. Identify at least two</li> <li>actions of false identity</li> <li>and their related</li> <li>problems</li> </ul>	
	d) Relevant previous knowledge: Students know themselves.	d) Relevant previous knowledge: Students know themselves.	

- e) Introduction: Ask students to describe themselves.
- f) Tasks/activities:
  - Discuss with learners, the concept of self in relation to their capabilities.
  - ii. Group learners to identify actions of false identity and their related problems.
- g) Core points:
  - i. Self is the whole being of an individual, taking into consideration their personal and psychological nature and abilities.
  - ii. Some students pretend to be what they are not, e.g. they want to show off that they come from well to do families while it is not the case.
- h) Core competencies:
  - i. Communication and collaboration
  - ii. personal development and leadership
- i) Conclusion: Use questions and answers to summarise the lesson with learners
- i) Evaluation:
  - i. What is self?
  - ii. What is the meaning of false identity?
  - iii. Mention two examples of false identity.
  - iv. Mention two problems that can result from false identity.

- e) Introduction: Ask students to describe themselves.
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  - i. What is self?
  - ii. What is the meaning of false identity?
  - iii. Mention two examples of false identity.
  - iv. Mention two problems that can result from false identity.

		Note:	Note:	
		*Teachers would be guided to	*Teachers would be guided to	
		tease out the learning outcomes	tease out the learning	
		and learning indicators from the	outcomes and learning	
		lesson, so they know the	indicators from the lesson, so	
		relationship between lesson	they know the relationship	
		objectives and learning	between lesson objectives and	
		outcomes	learning outcomes	
3.	Teaching,	3.1 Ask teachers to tease out	3.1 Tease out the learning	30 mins
	rning and	the learning outcomes and the	outcomes and the learning	
	sessment	learning indicators from the	indicators from the sample	
		sample lesson plan and explain	lesson plan and explain how	
>	Reading and	how they are related to the	they are related to the	
	discussion of	objectives (NTS 3h).	objectives (NTS 3h).	
	the teaching	E.g.	E.g.	
	and learning	LO: Demonstrate knowledge and	LO: Demonstrate knowledge	
	activities	understanding of self-identity.	and understanding of self-	
	noting,	LI 1.1 Explain the term self.	identity.	
	addressing,	LI 1.2 Identify at least two	LI 1.1 Explain the term self	
	and	actions of false identity and their		
	explaining	related problems.		
	areas where	3.2 Ask teachers to brainstorm	3.2 Brainstorm to come up with	
	teachers may	and come up with how the NTS	how the NTS can help to	
	require	can help to promote the	promote the delivery of lessons	
	clarification	delivery of lessons in the	in the secondary school	
>	Noting	secondary school curriculum	curriculum (NTS 3e, 3f, 3g, 3h,	
	opportunities	(NTS 3e, 3f, 3g, 3h, 3i and 3j).	3i and 3j).	
	for making		<i>"</i>	
	explicit links	E.g.	E.g.	
	to the	NTS 3e: Employs a variety of	NTS 3e: Employs a variety of	
	Secondary	instructional strategies that	instructional strategies that	
	School	encourage student participation	encourage student	
	Curriculum	and critical thinking.	participation and critical	
>	Noting	E.g. Demonstration, Peer	thinking.	
	opportunities	teaching	E.g. Demonstration, Peer	
	for	Enquiry based teaching, Projects	teaching	
	integrating:	based, etc.	Enquiry based teaching,	
	GESI		Projects based, etc.	
	responsivenes	NTS 3f: Pays attention to all		
	s and ICT and	learners, especially girls and	NTS 3f: Pays attention to all	
	21st C skills	students with Special	learners, especially girls and	
>	Reading,	Educational Needs, ensuring	students with Special	
	discussion,	their progress.	Educational Needs, ensuring	
	and		their progress.	
	identification			
	of continuous	E.g.	E.g.	
	assessment	a) Even distribution of	a) Even distribution of	
	opportunities	questions among male and	questions among male and	
	in the lesson.	female students.	female students.	
	Each lesson	b) Giving equal opportunities	b) Giving equal opportunities	
	should	to learners to achieve	to learners to achieve	

include at
least two
opportunities
to use
continuous
assessment to
support
student
teacher
learning

- c) Portraying female characters that are mostly represented by male characters.
- d) Put SEN learners in positions that will make them more active.
- e) Encouraging females to study male dominated courses.

NTS 3g: Employs instructional strategies appropriate for mixed ability, multilingual and multiage classes.

E.g.

- a) Knowing one's learners and giving them individual attention.
- b) Mixed ability grouping NTS 3h: Sets meaningful tasks that encourage learner collaboration and lead to purposeful learning.

E.g.

- a) Learner centred activities
- b) Interactive teaching
- c) Project work

NTS 3i: Explains concepts clearly using examples that are familiar to students.

E.g.

- a) Teaching from known to unknown
- b) Providing specific examples

NTS 3j: Produces and uses a variety of teaching and learning resources including ICT, to enhance learning.

E.g.

Teaching Learning Resources (TLRs) charts, maps, globe, flash cards, etc.

Examples of ICT integration are:

 a) Using ICT tools in teaching and learning (computers, projectors)

- > Resources:
- Links to the existing PLC Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used.
- needs to be
  given to local
  availability
  and guidance
  on any power
  point
  presentations
  , TLRs or
  other
  resources
  which need to
  be developed
  to support
  learning

Consideration

 c) Portraying female characters that are mostly

- b) Presentation using PowerPoint
- c) Submission of assignments via mail.
- d) Surfing Open Educational Resources (OERs) and other internet sources for information.
- 3.3 Ask teachers in their subject groups to refer to the NTS guidelines and discuss how the Standards are linked to the use of formative assessment (assessment for learning and assessment as learning) tools and summative assessment (assessment of learning) practices in their respective subject areas (NTS 3k, 3l, 3m, 3n, 3o and 3p).

#### Note:

NTS 3k: Integrates a variety of assessment modes into teaching to support learning.

E.g.

- a) Class exercise
- b) Project work
- c) Presentation (Individual and group)
- d) Written assignment
- e) Oral assignments

NTS 31: Listens to learners and gives constructive feedback.

E.g.

- a) Marking and submission of books or scripts.
- b) Asking questions and responding to questions.

NTS 3m: Identifies and remediates learners' difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher.

3.3 Refer to the NTS guidelines and discuss how the Standards are linked to the use of formative assessment (assessment for learning and assessment as learning) tools and summative assessment (assessment of learning) practices in your respective subject areas (NTS 3k, 3l, 3m, 3n, 3o and 3p).

#### Note:

NTS 3k: Integrates a variety of assessment modes into teaching to support learning.

E.g.

- a) Class exercise
- b) Project work

NTS 31: Listens to learners and gives constructive feedback.

E.g.

Marking and submission of books or scripts.

NTS 3m: Identifies and remediates learners' difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher.

		E.g.	E.g.	
		a) Using resource persons	a) Using resource persons	
		b) Team teaching	b) Team teaching	
		c) Mixed ability grouping	s, ream teaching	
		NTS 3n: Keeps meaningful	NTS 3n: Keeps meaningful	
		records of every learner and	records of every learner and	
		communicates progress clearly	communicates progress clearly	
		1		
		to parents and learners.	to parents and learners.	
		E.g.	E.g.	
		a) Records of students works	Records of students works	
		b) Continuous assessment		
		c) Learners reports cards		
		NTS 3o: Demonstrates	NTS 3o: Demonstrates	
		awareness of national and	awareness of national and	
		school learning outcomes of	school learning outcomes of	
		learners.	learners.	
		E.g.	E.g.	
		a) Keeping data on learners'	Keeping data on learners'	
		performance periodically	performance periodically	
		b) Keeping GES national data	perjormance periodically	
		a, mapping and management and		
		NTS 3p: Uses objective criterion	NTS 3p: Uses objective criterion	
		referencing to assess learners.	referencing to assess learners.	
		E.g.	E.g.	
		a) Using a rating scale to	Using a rating scale to award	
		award grades	grades	
		b) Marking scheme	3	
		3.4 Ask one or two groups to	3.4 Present your work for	
		present their work for feedback	feedback from the larger group	
		from the larger group		
4.	Evaluation and	4.1 Ask teachers to reflect and	4.1 Reflect and share what you	15 mins
rev	view of session:	share what they have learnt	have learnt about the NTS.	
>	Teachers	about the NTS.		
	need to			
	identify	4.2 Remind teachers to identify	4.2 Remember to identify a	
	critical friends	a critical friend to observe them	critical friend to observe you in	
	to observe	in teaching their lessons in	your lessons in relation to PLC	
	lessons and	relation to PLC Session 3 and	Session 3 and provide feedback	
	report at next	provide feedback at the next	at the next PLC session.	
	session	PLC session.		
>	Identifying			
	and	4.3 Remind teachers to read	4.3 Remember to read Session	
	addressing	Session 4 from the PLC	4 from the PLC Handbook in	
	any	Handbook in preparation for the	preparation for the next PLC	
	outstanding	next PLC session.	session.	
	issues relating			
	to the			
	lesson/s for			
	clarification			
		l	L	i.

PLC Session 4: Professional Development			
	Guidance notes on Leading the	Guidance Notes on Teacher	Time
	session. What the PLC	Activity during the PLC	in session
	Coordinator will have to say	<b>Session.</b> What teachers will do	
	during each stage of the session	during each stage of the	
		session.	
1. Review of	1.1 Ask a teacher who observed	1.1 Share your findings of the	25 mins
previous	a lesson of a critical friend	lesson you observed your	
session and	to share their findings with	critical friend teach after	
introduction	the group (NTS 1a, 1b and	the last PLC session (NTS	
to new	1e).	1a, 1b and 1e).	
session			
	1.2 Ask teachers to read	1.2 Read Standards 1a, 1b, and	
NB The guidance	Standards 1a, 1b, and 1c	1c under Professional	
for PLC	under Professional Values	Values and Attitudes of NTS	
Coordinator	and Attitudes of the NTS	and deduce possible	
should identify,	and deduce possible	learning outcomes (LOs)	
address and	learning outcomes (LOs)	and learning indicators (LIs)	
provide	and learning indicators (LIs) for the session before	of the session before	
explanations for		reading the LOs and LIs	
any areas where	reading the LOs and LIs	listed for the session.	
teachers might	(listed below) for the session.		
require clarification on an	Session.		
aspect of the	Note:	Note:	
lesson.	LO: Learning Outcome: <i>This is</i>	LO: Learning Outcome: This is	
1033011.	the expected knowledge,	the expected knowledge,	
NB PLC	understanding, skills, etc., to be	understanding, skills, etc., to be	
Coordinator	acquired at the end of a lesson	acquired at the end of a lesson	
should ask	(Common Core Programme	(Common Core Programme	
teachers to plan	Curriculum).	Curriculum).	
for their teaching	,	,	
as they go	LI: Learning Indicator: This is the	LI: Learning Indicator: This is the	
through the PLC	practical evidence that learning	practical evidence that learning	
session.	has taken place. It may include	has taken place. It may include	
	verbal responses, practical	verbal responses, practical	
	activity or products (Common	activity or products (Common	
	Core Programme Curriculum).	Core Programme Curriculum).	
	104 5	104 5	
	LO 1: Demonstrate ability to	LO 1: Demonstrate ability to	
	critically and collectively	critically and collectively	
	improve teaching and learning	improve teaching and learning	
	(NTS 1a, 3e and 3k).	(NTS 1a, 3e and 3k).	
	LI 1.1 List strengths and	LI 1.1 List strengths and	
	limitations of own practice (NTS	limitations of own practice	
	1a).	(NTS 1a).	
	LI 1.2 Critique peers' practice	LI 1.2 Critique peers' practice	
	using lesson notes, reflective	using lesson notes, reflective	
	<u> </u>	<u> </u>	I

	logs, journals, portfolios, etc. (NTS 1a).	logs, journals, portfolios, etc. (NTS 1a).	
	LO 2: Demonstrate knowledge and skill to improve their personal and professional development through lifelong learning and continuous professional development (1b, 1d).	LO 2: Demonstrate knowledge and skill to improve their personal and professional development through lifelong learning and continuous professional development(1b, 1d).	
	LI 2.1 Identify gaps in knowledge to improve own personal development (go beyond the textbook and show evidence of the use of the library, internet, mentor /resource person's inputs, etc.).	LI 2.1 Identify gaps in knowledge to improve own personal development (go beyond the textbook and show evidence of the use of the library, internet, mentor /resource person's inputs, etc.).	
	L1 2.2 Identify gaps in own knowledge to improve professional development (go beyond the textbook and show evidence of the use of the library, internet, mentor /resource person's inputs, etc.).	L1.2.2 Identify gaps in own knowledge to improve professional development (go beyond the textbook and show evidence of the use of the library, internet, mentor /resource person's inputs, etc.).	
	LO 3: Demonstrate skills in effective leadership qualities both in the classroom and wider school community (NTS 1c, 1f).	LO 3: Demonstrate skills in effective leadership qualities both in the classroom and wider school community (NTS 1c, 1f).	
	LI 3.1 Model given roles.	LI 3.1 Model given roles.	
	LI 3.2 Delegate roles taking into consideration Gender Equality Social Inclusion (GESI) (NTS 3f, 3g).	LI 3.2 Delegate roles taking into consideration Gender Equality Social Inclusion (GESI) (NTS 3f, 3g).	
Give regard for misconceptions, stereotypes, GESI, ICT, 21 <sup>st</sup> century skills, etc.	1.3 Ask teachers to discuss and relate the concept of school based professional development to their various subjects (NTS 1b, 1c,1d and 1f).	1.3 Discuss and relate the concept of professional development to your various subjects (NTS 1b, 1c,1d and 1f).	
	E.g. Working with other teachers to exchange ideas at professional learning community sessions	E.g. Working with other teachers to exchange ideas at professional learning community sessions	
	Co-teaching with colleagues to		

improve learning outcomes in their respective schools

1.4 Ask teachers to identify further areas of professional development opportunities that will enhance their teaching of subject areas (NTS 1b, 1c and 3a).

1.4 Identify further areas of professional development that will enhance your teaching of Science (NTS 1b, 1c and 3a).

E.g. Universities provide opportunities for further studies in the subject areas

E.g. Universities provide opportunities for further studies in the subject areas

Subject associations organize annual conferences to upgrade teachers' skills in teaching

1.5 Ask teachers to identify possible misconceptions and stereotypes in their subject areas (NTS 3m).

E.g. (Science)

- E.g. (Science)
- a) Science is for students with very high IQ.
- b) Some Science domains are gender specific, e.g., Engineering for males, *Nursing for females, etc.*
- c) Science is not suitable for students with Special Educational Needs (SEN)
- d) Science is expensive
- 1.6 Ask teachers to discuss possible ways to mitigate these misconceptions and stereotypes in their subject areas (NTS 3i).
- 1.6 Discuss possible ways to mitigate these misconceptions area (NTS 3i).

### E.g. (Science)

a) Invite role models / resource persons that have overcome these stereotypes and have achieved successes in the Science domains in the

misconceptions and stereotypes in Science (NTS 3m).

a) Science is for students with

b) Some Science domains are

Engineering for males,

c) Science is not suitable for

students with Special

Nursing for females, etc.

Educational Needs (SEN)

gender specific, e.g,.

1.5 Identify possible

very high IQ.

- and stereotypes in your subject
- E.g. (Science) Invite role models / resource persons that have overcome these stereotypes and have achieved successes in the Science domains in the society

society to share their experiences to encourage the learners.

to share their experiences to encourage the learners.

- Play a pre-recorded video of persons who have defied these stereotypes and have achieve successes in the society for learners to watch and discuss.
- 1.7 In mixed gender groupings (where possible), ask teachers to list, some 21<sup>st</sup> century skills (NTS 3e, 3f and 3g).

  1.7 In mixed gender groupings (where possible), ask teachers century skills (STS 3e, 3f and 3g).

E.g.

- a) Communication skills
- b) Collaboration skills
- c) Observation and enquiry skills
- d) Digital literacy skills
- e) Creativity and innovation skills
- f) Personal development and leadership skills
- 1.8 Ask teachers to discuss possible activities they would adopt to develop the 21<sup>st</sup> century skills in their learners (NTS 3j).

**Communication skills** e.g., group discussion, role-play, presentation, etc.

**Collaboration skills** e.g.,. group discussion, project / research, role-play, hands-on-activities, etc.

**Observation and enquiry skills** e.g., group discussion, project/research, role-play, hands-on-activities, etc.

**Creativity and innovation skills** e.g., group discussion, project / research, role-play, hands-on-activities, presentation.

1.7 In mixed gender groupings (where possible) list some 21<sup>st</sup> century skills (NTS 3e, 3f and 3g).

E.g.

- a) Communication skills
- b) Collaboration skills
- c) Observation and enquiry skills
- d) Digital literacy skills

1.8 Discuss possible activities you would adopt to develop the 21<sup>st</sup> century skills in your learners (NTS 3j).

**Communication skills** e.g., group discussion, role- play, presentation, etc.

**Collaboration** skills e.g.,. group discussion, project/research, role-play, hands-on-activities, etc.

Observation and enquiry skills e.g., group discussion, project / research, role-play, hands-on-activities, etc.

**Creativity and innovation skills** e.g., group discussion, project/research, role-play, hands-on-activities, presentation.

		Demonstrate development of the		1
		Personal development skills		
		e.g., group discussion, project/		
		research, role-play, hands-on-		
		activities, extended learning,		
		presentation.		
		<b>Leadership skill</b> s e.g., group		
		discussion, project /research,		
		role-play, hands-on-activities,		
		extended learning, presentation.		
		1.9 Ask teachers to identify ways	1.9 Identify ways of	
		of incorporating ICT in their	incorporating ICT in your	
		lessons (NTS 3j).	lessons (NTS 3j).	
		E.g.	E.g.	
		a) Surfing OERs and other	a) Surfing OERs and other	
		internet sources for	internet sources for	
		information	information	
		b) Teach using power Point	b) Teach using power Point	
		presentation.	presentation.	
		c) Employ computer software	,	
		such AutoCAD, Photoshop,		
		Coral Draw, Paint, etc.		
2.	Planning for	2.1 Ask teachers to discuss	2.1 Discuss samples of your	20 mins
	teaching,	samples of their lesson topics in	lesson topics in your various	
	learning and	their various subject areas and	subject areas and link them to	
	assessment	link them to the concepts of LOs	the concepts of LOs and LIs	
	activities for	and Lis (NTS 3a, 3b).	(NTS 3a, 3b).	
	the lesson/s	una Els (1113 3a, 3b).	(1413 34, 35).	
	making links	   E.g.	E.g.	
	to the	Sample lesson topics in Science	Sample lesson topics in Science	
	secondary	domains:	domains:	
	school		demansi	
	curriculum	Domain: Physics	Domain: Physics	
		Topic: Scientific Measurement	Topic: Scientific Measurement	
		Sub-topic: S.I. Units - Basic units	Sub-topic: S.I. Units - Basic units	
		and Derived units of	and Derived units of	
		measurement	measurement	
		Domain: Biology	Domain: Biology	
		Topic: Cells	Topic: Cells	
		Sub-topic: Plant Cell and Animal	Sub-topic: Plant Cell and	
		Cell	Animal Cell	
		Domain: Chemistry	Domain: Chemistry	
		Topic: Matter	Topic: Matter	
		1	I	
		Sub-topic: The building blocks of	Sub-topic: The building blocks	
		matter	of matter	
		Domain: Agricultural Science	Domain: Agricultural Science	
Ь		20am. rigiteattarar Science	23a.ii. rigireartarar Science	

Topic: Rocks

Sub-topic: Major types of rocks

and their formation

An example of an outline of a lesson plan based on the 2010 Senior High School Syllabus for teaching the topic Scientific Measurements. \*

a) Topic: Scientific Measurement

**b) Sub-topic**: S.I. Units - Basic units and Derived units of measurement

c) Objectives: By the end of the lesson, the learner will be able to:

- i. Use S.I. units in measurement
- ii. Differentiate between basic units and derived units of measurement
- iii. Give 5 examples of basic units of measurement
- d) Relevant previous knowledge: Learners have been measuring things around them

# e) Introduction:

Group learners, bearing in mind GESI and ask each group to discuss and write the things we measure in daily life and share with the whole class.
Remind each group to appoint a leader and a secretary. The leader will do the sharing on behalf of the group.

In groups, lead learners to discuss and write the aspects of the things identified that are measured.

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In groups, lead learners to discuss and write the aspects of the things identified that are measured.

# f) Tasks/activities:

i. Present a set of materials (e.g., watch, tape measure, etc) to learners

and brainstorm with them what the materials are used to measure)

ii. Discuss with learners the use of S.I. units in measurement

iii. Discuss with class the differences between basic units and derived units of measurement

iv. brainstorm with learners to give examples of basic units of measurements

# q) Closure:

Ask learners to reflect on the following questions:
What have you learnt today?
How are you going to apply what you have learnt today in everyday life?

# h) Evaluation:

 i. Match the following quantities with their right units of measurement

S/	QTY	S.I. UNITS
N		
1	Time	Metre (m)
2	Mass	Metre
		square (m²)
3	Volume	Kelvin (K)
4	Length	Kilogram
		(Kg)
5	Area	Cubic
		Metre (m³)
6	Tempera	Second (S)
	ture	

#### i) Content

Some of the things in the environment we measure include:

trees, tables, human beings, playing field, food, water, etc.

# f) Tasks/activities:

i. Present a set of materials
(e.g., watch, tape measure, etc)
to learners
and brainstorm with them what
the materials are used to
measure)
ii. Discuss with learners the use

iii. Discuss with class the differences between basic units and derived units of measurement

of S.I. units in measurement

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		(m³)
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	ture	

#### i) Content

Some of the things in the environment we measure include trees, tables, human beings, playing field, food, water, etc.

Aspects of these things that can be measured are:

i. Tree - height

ii. Table - length, breadth and height

iii. Human being - height and

iv. Food - mass, etc
The S.I. Units for these
measurements are:
height measured in metres (m)
mass measured in kilogram (Kg)
volume measured in cubic metre
/cubic centimetre (m³/c³)
electric current measured in
ampere (A)
time measured in second(s)

The main difference between Basic Units and Derived Units of measurement is that basic units are fundamental units of measurement that are generally recognized and accepted all over the world as units of measurement while derived units are units of measurement obtained by the multiplication or division of the basic units of measurement.

Examples of Basic Units of measurement are:

- i. Kilogram for mass
- ii. Second for time
- iii. Kelvin for temperature
- iv. Candela for light intensity
- v. Mole for amount of substance
- vi. Ampere for electrical current
- vii. Metre for length

# *j) Core Competencies:*

i. Communication and Collaborationii. Personal Development and

Leadership

iii. Critical Thinking and Problem Solving

Aspects of these things that can be measured are:

i. Tree - height

ii. Table - length, breadth and height

iii. Human being - height and mass

iv. Food - mass, etc
The S.I. Units for these
measurements are:
height measured in metres (m)
mass measured in kilogram
(Kg)

volume measured in cubic metre /cubic centimetre (m³/c³) electric current measured in ampere (A)

time measured in second(s)

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# j) Core Competencies:

i. Communication and Collaboration

ii. Personal Development and Leadership

iii. Critical Thinking and Problem Solving

	*************	***************************************	1
	*Teachers will be guided to	*Teachers will be guided to	
	tease out the learning outcomes	tease out the learning	
	and the learning indicators from	outcomes and the learning	
	the sample lesson plan	indicators from the sample	
		lesson plan	
3.0 Teaching,	3.1 Ask teachers to deduce the	3.1 Deduce the learning	30 mins
learning and	learning outcomes and the	outcomes and the learning	
assessment	learning indicators from the	indicators from the sample	
Reading and	sample lesson plan and compare	lesson plan and compare them	
discussion of the	them with the objectives of the	with the objectives of the	
teaching and	lesson.	lesson.	
learning activities	_	_	
noting,	E.g.	E.g.	
addressing, and	LO: Demonstrate sound	LO: Demonstrate sound	
explaining areas	knowledge and understanding of	knowledge and understanding	
where teachers	scientific measurement.	of scientific measurement.	
may require	LI 1.1 Use S.I. units in	LI 1.1 Use S.I. units in	
clarification	measurement	measurement	
1 1 Notine	II 1 2 Differentiate between	II.1.2 Differentiate between	
1.1 Noting	LI 1.2 Differentiate between basic units and derived units of	LI 1.2 Differentiate between basic units and derived units of	
opportunities		measurement	
for making explicit links	measurement	measarement	
to the	LI 1.3 Give 5 examples of basic		
Secondary	units of measurement		
School	units of measurement		
Curriculum	Note:		
2.1 Noting	The learning outcome can be		
opportunities	achieved through the learning		
for	objectives as learning indicators		
integrating:			
GESI	3.2 Ask teachers to identify gaps	3.2 Identify gaps in your sample	
responsivenes	in their sample lesson plans	lesson plans and discuss	
s and ICT and	and discuss possible ways of	possible ways of addressing	
21st C skills	addressing same (NTS 3a).	same (NTS 3a).	
3.1 Reading,			
discussion,	E.g	E.g.	
and	Possible gaps: absence of a	Possible gaps: absence of a	
identification	prescribed textbook, etc.	prescribed textbook, etc.	
of continuous	<b>Possible Solution</b> : use of a	<b>Possible Solution</b> : use of a	
assessment	library,	library, OERs and other internet	
opportunities	OERs and other internet	facilities, etc.	
in the lesson.	facilities, etc.		
Each lesson			
should	<b>Possible gaps:</b> lack of measuring		
include at	instruments such as		
least two	thermometers, meter rules, etc.		
opportunities	<b>Possible Solution</b> : use of a video		
to use	showing how measurement		
continuous	instruments are used, etc.		
assessment to			

	support	3.3 Ask teachers to suggest	3.3 Suggest alternative ways of	
	student	alternative ways of delivering	delivering the sample	
	teacher	the sample lessons (NTS 3e).	lessons (NTS 3e).	
	learning			
4.1	Resources:	E.g.	E.g.	
0	Links to the	a) use of flipped classroom	a) use of flipped classroom	
	existing PD	b) extended learning	b) extended learning	
	Themes, for	c) demonstration	c) demonstration	
	example,	d) simulation	d) simulation	
	action	e) field trips /community walk		
	research,	f) work-based learning		
	questioning	,,		
	and to other	3.4 Ask teachers to indicate how	3.4 Indicate how you will	
	external	they will promote GESI	promote	
	reference	responsiveness in the lesson	GESI responsiveness in the	
	material:	(NTS 2f, 3a, 3f and 3g).	lesson (NTS 2f, 3a, 3f and 3g).	
	literature, on	(11.5 2.) 50, 51 0110 58).		
	web,	E.g.	E.g.	
	YouTube,	a) Classroom arrangement that	a) Classroom arrangement	
	physical	facilitates interaction	that facilitates interaction	
	resources,	between all learners	between all learners	
	power point;	b) Mixed ability/gender group	b) Mixed ability/gender group	
	how they	activities	activities	
	should be	c) Positive feedback to	detivities	
	used.	all learners especially SEN	·	
	Consideration	and other disadvantaged		
0	needs to be	learners		
	given to local	d) Use of a local resource		
	availability	person who has defied		
	guidance on	stereotyping to		
	_	succeed in science.		
	any PowerPoint	Succeed III Science.		
		3.5 Ask teachers to discuss how	3.5 Discuss how the session is	
	presentations , TLM or other	the session is linked to the	linked to the use of formative	
	resources	use of formative assessment	assessment tools and practices,	
	which need to	tools and practices, e.g.,	e.g., assessment <i>for learning</i>	
	be developed	assessment <i>for learning</i> and	and assessment <i>as</i> learning	
	to support	assessment <i>as</i> learning	(NTS 3k, 3l).	
	learning	(NTS 3k, 3l).	(1113 3k, 31).	
	icarriing	(1413 5K, 31).		
		3.6 In groups, ask teachers to	3.6 In groups, suggest other	
		suggest other authentic	authentic assessment methods	
		assessment methods that could	that could be used in your	
		be used in their planned lesson	planned lesson (NTS 3p).	
		(NTS 3p).	pianiica iesson (ivis sp).	
		(1415 Sp).		
		E.g.	E.g.	
		a) Self-assessment	a) Self-assessment	
		b) Peer-assessment	b) Peer-assessment	
		c) Appraisal	c) Appraisal	
		d) Portfolio	d) Portfolio	
		uj Fultjuliu	uj Furtjuliu	

			T
	e) Project		
	f) Role play		
	3.7 Ask teachers to list and discuss how the lesson makes use of resources to support relevant activities in the NTS (NTS 3j).	3.7 List and discuss how the lesson makes use of resources to support relevant activities in the NTS (NTS 3j).	
	E.g. a) Pre-recorded videos b) YouTube videos c) Photographs d) OERs/Internet facilities e) Projectors f) Calculators	E.g. a) Pre-recorded videos b) YouTube videos c) Photographs d) OERs/Internet facilities	
	3.8 Ask one teacher to model a teaching activity in the sample lesson plan. (EXTENSION ACTIVITY)	3.8 Model a teaching activity in the sample lesson plan. (EXTENSION ACTIVITY)	
4. Evaluation and	4.1 Ask teachers to reflect and	4.1 Reflect and write what you	15 mins
review of session:	write what they have learnt	have learnt in the session	
Teachers	in the session (NTS 1a, 3l	(NTS 1a, 3I and 3n).	
need to	and 3n).		
identify			
critical friends	4.2 Ask them to share what	4.2 Share what you have learnt	
to observe	they have learnt with the	with the larger group.	
lessons and	larger group.	3 3 3 3 3	
report at next	4.3 Remind teachers to identify		
session	a critical friend to observe	4.3 Identify a critical friend to	
Identifying	them in teaching their	observe you in teaching your	
and	lessons in relation to PLC	lessons in relation to PLC	
addressing	session 4 and provide	session 4 and provide feedback	
any	feedback at the next PLC	at the next PLC Session.	
outstanding	Session.		
issues relating	4.4 Ask teachers to read Session	4.4 Read Session 5 from the	
to the	5 from the PLC Handbook in	PLC Handbook in preparation	
lesson/s for	preparation for the next	for the next session.	
clarification	session.		

PLC Session 5: Community of Practice			
	Guidance notes on Leading the	Guidance Notes on Teacher	Time in
	session. What the PLC	Activity during the PLC Session.	session
	Coordinator will have to say	What teachers will do during	
	during each stage of the	each stage of the sessions	
	sessions		
1. Review of	1.1 Ask a teacher who observed	1.1 Share your findings of the	25 mins
previous	a lesson of a critical friend to	lesson you observed with your	
session and	share their findings with the	critical friend after the last PLC	
introduction	group.	session.	
to new			
session	1.2 Ask teachers to read	1.2 Read Standards 1d,1e, 1f	
	Standards	and 1g under Professional	
NB: The guidance	1d,1e, 1f and 1g under	Values and Attitudes of the NTS	
for PLC	Professional Values and	and deduce possible learning	
Coordinator	Attitudes of the NTS and deduce	outcomes (LOs) and learning	
should identify,	possible learning outcomes	indicators (LIs) for the session	
address, and	(LOs) and learning indicators	before reading the LOs and LIs	
provide	(LIS) for the session before	(listed below) for the session	
explanations for	reading the LOs and LIs (listed		
any areas where	below) for the session.		
teachers might	Notes	Notes	
require clarification on an	Note:	Note:	
aspect of the	LO: Learning Outcome: This is the expected knowledge,	LO: Learning Outcome: This is the expected knowledge,	
lesson.	understanding, skills, etc., to be	understanding, skills, etc., to be	
NB PLC	acquired at the end of a lesson	acquired at the end of a lesson	
Coordinator	(Common Core Programme	(Common Core Programme	
should ask	Curriculum).	Curriculum).	
teachers to plan	Carricalariyi	- Carricarani,	
for their teaching	LI: Learning Indicator: This is the	LI: Learning Indicator: <i>This is the</i>	
as they go	practical evidence that learning	practical evidence that learning	
through the PLC	has taken place. It may include	has taken place. It may include	
session	verbal responses, practical	verbal responses, practical	
	activity or products (Common	activity or products (Common	
	Core Programme Curriculum).	Core Programme Curriculum).	
	LO 1: Demonstrate knowledge	LO 1: Demonstrate knowledge	
	and understanding of ethical,	and understanding of ethical,	
	legal, and professional code of	legal, and professional code of	
	conduct (NTS 1d).	conduct (NTS 1d).	
	LI 1.1 Mention at least three	LI 1.1 Mention at least three	
	Ministry of Education	Ministry of Education	
	(MoE)/Ghana Education Service	(MoE)/Ghana Education Service	
	(GES) ethical codes of conduct	(GES) ethical codes of conduct	
	for teachers.	for teachers.	
	114.2 Characher de 11	114.2 Character de la	
	LI 1.2 State the duties and	LI 1.2 State the duties and	
	responsibilities of a teacher.	responsibilities of a teacher.	

- LI 1.3 List the dos and don'ts of the teaching profession.
- LO 2: Demonstrate knowledge, understanding and skills in establishing and maintaining a cordial relationship with staff, learners and the entire school community (NTS 1e).
- LI 2.1 State ways by which teachers can establish and maintain cordial relationship with staff, learners and the school community.
- LI 2.2 State ways by which teachers can be involved in community activities.
- LI 2.3 State ways by which teachers can participate in school activities.
- LO 3: Demonstrate knowledge, understanding and skills in establishing a positive teacher identity and acting as a good role model (NTS 1f).
- LI 3.1 Mention at least five qualities of a good teacher.
- LI 3.2 List sources or records of class attendance by teachers.
- LI 3.3 List four ways by which a teacher can be GESI responsive.
- LO 4: Demonstrate knowledge, skills and understanding of the teacher's roles as a potential agent of change in the school, community and the nation (NTS 1g).
- LI 4.1 List at least four ways by which a teacher can be seen as a change agent in the school, community and the nation.

- LI 1.3 List the dos and don'ts of the teaching profession.
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- LI 4.1 List at least four ways by which a teacher can be seen as a change agent in the school, community and the nation.

- LI 4.2 Give examples of challenges of the school and the community and suggest possible solutions.
- 1.3 Ask teachers to list at least three ethical codes of conduct for teachers in the Ghana Education Service (NTS 1d).

- a) Teachers should be punctual to class
- b) Teachers should show regard for policies of MoE/GES and the school in their work
- c) Teachers should maintain respect for both males and females' dignity in class and community
- d) Teachers should avoid exploiting learners' vulnerability, etc.
- 1.4 Ask teachers to discuss at least three duties and responsibilities of a teacher (NTS 1d).

E.g.

- a) Prepare relevant and adequate teaching notes
- b) Teach and give class exercises
- c) Mark and give feedback on class exercises
- d) Supervise learners, etc.
- 1.5 Ask teachers to list at least four dos and four don'ts of the teaching profession (NTS 1d).

E.g.

Dos:

- a) Do teach and give class exercises
- b) Do mark and give feedback on class exercises
- c) Do supervise learners' work

LI 4.2 Give examples of challenges of the school and the community and suggest possible solutions.

1.3 List at least three ethical codes of conduct for teachers in the Ghana Education Service (NTS 1d).

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- a) Teachers should be punctual to class
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1.4 Discuss at least three duties and responsibilities of a teacher (NTS 1d).

E.g.

- a) Prepare relevant and adequate teaching notes
- b) Teach and give class exercises, etc.
- 1.5 List at least four dos and four don'ts of the teaching profession (NTS 1d).

E.g.

Dos:

- a) Do teach and give class exercises
- b) Do mark and give feedback on class exercises
- c) Do supervise learners' work

- d) Do offer guidance and counselling services to learners
- e) Do take part in school activities, etc.

#### Don'ts

- a) Don't exploit the vulnerability of learners
- b) Don't send learners on errands during contact hours
- c) Don't engage in physical violence
- d) Don't administer corporal punishment on learners
- e) Don't discriminate against learners, etc.
- 1.6 Ask teachers to state at least four ways by which they can establish and maintain cordial relationship with staff, learners and the school community (NTS 1e).

#### E.g.

- a) Read the teachers' code of ethics
- b) Attend and contribute to school meetings
- c) Take part in parent-teacher consultations
- d) Attend and contribute to School Management Committee (SMC) and Parents Association (PA) meetings
- e) Sensitize others on the need to educate both boys and girls
- f) Become aware of learners' background, etc.
- 1.7 Ask teachers to state at least four ways by which they can be involved in community activities (NTS 1e).

#### Don'ts

- a) Don't exploit the vulnerability of learners
- b) Don't send learners on errands during contact hours
- c) Don't engage in physical violence, etc.
- 1.6 State at least four ways by which you can establish and maintain cordial relationship with staff, learners and the school community (NTS 1e).

### E.g.

- a) Read the teachers' code of ethics
- b) Attend and contribute to school meetings
- c) Take part in parent-teacher consultations, etc.

1.7 State at least four ways by which you can be involved in community activities (NTS 1e).

- a) Take part in community durbars
- b) Attend community festivals funerals, naming ceremonies, etc.
- c) Take part in community sports and games
- d) Participate in community cleanup exercises
- e) Support communities to organize their events in the school environment, etc.
- 1.8 Ask teachers to mention at least five qualities of a good teacher (NTS 1f).

E.g.

- a) Be a good communicator
- b) Be a good listener
- c) Be a good collaborator
- d) Be adaptable
- e) Be empathetic
- f) Be patient
- g) Share best practices
- h) Master content knowledge in their subject areas of specialization, etc.
- 1.9 Ask teachers to list at least three sources of records to monitor the attendance of teachers (NTS 1f).

E.g.

- a) Clock-in and out machine
- b) Staff attendance register
- c) Teachers' attendance register in class
- d) Learners' attendance register
- e) Headmasters/mistress records, etc.
- 1.10 Ask teachers to state at least three ways by which a teacher can be GESI responsive (NTS 1f).

E.g.

- a) Take part in community durbars
- b) Attend community festivals, funerals, naming ceremonies, etc.
- c) Take part in community sports and games, etc.
- 1.8 Mention at least five qualities of a good teacher (NTS 1f).

E.g.

- a) Be a good communicator
- b) Be a good listener
- c) Be a good collaborator
- d) Be adaptable, etc.

1.9 List at least three sources of records to monitor the attendance of teachers (NTS 1f).

- a) Clock-in and out machine
- b) Staff attendance register, etc.
- 1.10 State at least three ways by which a teacher can be GESI responsive (NTS 1f).

- a) Be a good role model for all learners in class irrespective of their background
- b) Respect the views of all learners
- c) Distribute questions to male and female learners fairly
- d) Make reasonable adjustment to cater for SEN learners
- e) Focus on effective and efficient classroom management, etc.
- 1.11 Ask teachers to list at least four ways by which a teacher can be seen as an agent of change in the school, community and the nation (NTS 1g).

E.g.

- a) Promote inclusion and tolerance of all learners
- b) Actively prevent intolerance
- c) Challenge traditional gender roles and promote gender equality
- d) Engage in initiatives that bring about changes or improvement in the school (i.e., innovative use of local materials or facilitating access and social inclusion by learners' disability or access to water or clean latrines)
- e) Support parents to help with their ward's homework
- f) Follow up on learners who are absent from school, etc.
- 1.12 Ask teachers to identify at least two challenges of the school and the community and suggest possible solutions (NTS 1g).

E.g.

- c) Be a good role model for learners in class
- d) Respect the views of all learners
- e) Provide special attention to learners with special educational needs (SEN), etc.

1.11 List at least four ways by which a teacher can be seen as an agent of change in the school, community and the nation (NTS 1g).

E.g.

- a) Promote inclusion and tolerance of all learners
- b) Actively prevent intolerance
- c) Challenge traditional gender roles and promote gender equality issues, etc.

1.12 Identify at least two challenges of the school and the community and suggest possible solutions (NTS 1g).

# E.g. School Challenges and solutions:

- a) Accommodation challenges – seek support from PA, District Assembly and other benevolent organizations
- b) Indiscipline effective enforcement of school rules and regulations
- c) Low performance –
  effective and efficient
  assessment, monitoring
  and supervision of
  learners, etc.

# Community Challenges and solutions:

- a) Teenage pregnancies –
   awareness
   creation/education to both
   learners and community
- b) Irresponsible parenting sensitizing parents
- c) Ignorance Awareness creation/education, etc.
- 1.13 Ask teachers to discuss and relate the concept of community of practice to the delivery of lessons in their various subject areas.

E.g.

In English Language, learners could be put into two GESI responsive groups to debate a motion such as "Female education is the panacea for the country's underdevelopment", thereby engaging in different areas of English language like grammar, writing (composition), listening and speaking (speech work), etc.

# Give regard for possible misconceptions

1.14 Ask teachers to identify possible misconceptions in various subject areas.

# E.g. School Challenges and solutions:

- a) Accommodation challenges

   seek support from PA,
   District Assembly and other benevolent organizations,
   etc.
- b) Indiscipline effective enforcement of school rules and regulations

# Community Challenges and solutions:

- a) Teenage pregnancies –
   awareness
   creation/education to both
   learners and community,
   etc
- b) Irresponsible parenting sensitizing parents
- 1.13 Discuss and relate the concept of community of practice to the delivery of lessons in your various subject areas.

E.g.
In English Language, learners
could be put into two GESI
responsive groups to debate a
motion such as "Female
education is the panacea for
the country's
underdevelopment",
thereby engaging in different
areas of English language like
grammar, writing
(composition), listening and
speaking (speech work), etc.

1.14 Identify possible misconceptions in your various subject areas.

# and stereotypes, GESI, ICT, 21<sup>st</sup> century skills, etc.

# E.g. (English)

- a) English Language is for learners with high IQ
- b) Females are more fluent in English than males
- c) Girls are good at English and boys are good at Mathematics
- d) English Language is perceived to be a very difficult subject to pass, etc.
- 1.15 Discuss with teachers, possible ways to mitigate these misconceptions and stereotypes in teaching the various subjects.

#### E.g.

- a) In English Language, you may invite role models/resource persons that have overcome these stereotypes and have achieved successes in the study of English Language to give a talk on such misconceptions and stereotypes
- b) Organize orientations to sensitize all learners on the benefits of the study of English Language by all categories of learners
- c) Organize English Language remediation for learners and professional development training to make English Language teachers more effective in classrooms, etc.
- 1.16 In mixed gender groupings (where possible), ask teachers to list at least four 21<sup>st</sup> century skills related to community of practice.

#### E.g.

- a) Critical thinking
- b) Research skills
- c) Digital citizenship
- d) Communication skills

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1.16 In mixed gender groupings (where possible), list at least four 21<sup>st</sup> century skills related to community of practice.

- a) Critical thinking
- b) Research skills
- c) Digital citizenship
- d) Communication skills

- e) Collaboration skills
- f) Observation and enquiry skills
- g) Digital literacy
- h) Creativity skills, etc.
- 1.17 Ask teachers to identify ways of incorporating ICT in their lessons.

- a) Employ computer assisted approaches such as surfing Open Educational Resources (OERs), Encarta Encyclopedia, Google classroom, etc., in teaching English Language
- b) Employ computer software such as Sunflower, Microsoft office, AnswerGarden, BrainPOP, Mathkids, etc., in teaching Mathematics and Science related subjects
- c) Explore and adopt the use of various teaching and learning research links to plan and deliver lessons in various subject areas e.g. academia.edu, ai.google, data-gov.in, etc.
- 1.18 Ask teachers to mention and discuss their lists of 21<sup>st</sup> century skills (from 1.16 above) and how they can support community of practice.

E.g.

- a) Critical thinking:

  Teamwork, assigning
  tasks, brainstorming,
  etc.
- b) Research skills:
  Google search, group
  work and other research
  tools, etc.
- c) Digital Citizenship:

  Use of mobile phones,

  computers, being IT

  compliant and use it to

e) Collaboration skills

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1.18 Mention and Discuss your lists of 21<sup>st</sup> century Skills (from 1.16 above) and how they can support community of practice.

- a) Critical thinking:
  Teamwork, assigning
  tasks, brainstorming,
  etc.
- b) Research skills:
  Google search, group
  work and other
  research tools, etc.

	work with others in teaching and learning, etc.  1.19 Ask teachers to discuss possible activities they would adopt to develop the 21st century skills in their learners.  E.g.	1.19 Discuss possible activities you would adopt to develop the 21 <sup>st</sup> century skills in their learners.  E.g.	
	Communication skills, collaboration, observation and enquiry skills, digital literacy, creativity, personal development skills, etc., can be developed in learners using the following activities;	Communication skills, collaboration, observation and enquiry skills, digital literacy, creativity, personal development skills, etc., can be developed in learners using the following activities;	
	<ul> <li>a) group discussion</li> <li>b) project/research work</li> <li>c) role-play</li> <li>d) hands-on activities</li> <li>e) extended learning</li> <li>f) presentation</li> <li>g) drama</li> <li>h) field Trips</li> <li>i) debates</li> </ul>	<ul><li>a) group discussion</li><li>b) project/research work</li><li>c) role-play</li><li>d) hands-on activities, etc.</li></ul>	
	i) debates j) quizzes, etc.		
2. Planning for teaching,	2.1 Ask teachers to discuss samples of their lesson plans in	2.1 Discuss samples of your lesson plans in your various	20 mins
learning and	their various subject areas and	subject areas and link them to the NTS, particularly to	
assessment activities for	link them to the NTS, particularly to community of practice (NTS	community of practice (NTS 1d,	
the lesson/s	1d, 1e, 1f and 1g).	1e, 1f and 1g).	
making links			
to secondary	An example of an outline of a	An example of an outline of	
school curriculum	Lesson Plan based on the 2010 Senior High School Syllabus in	Lesson Plan based on the 2010 Senior High School Syllabus in	
Carriculani	English Language *	English Language *	
	<ul> <li>a) Aspect: Writing</li> <li>b) Topic: Debate writing</li> <li>c) Sub-topic: Format of debate writing</li> <li>d) Objectives:  By the end of the lesson, the learner will be able to;  i. explain the term debate</li> <li>ii. list the features of a debate</li> </ul>	a) Aspect: Writing b) Topic: Debate writing c) Sub-topic: Format of debate writing d) Objectives: By the end of the lesson, the learner will be able to; i. explain the term debate ii. list the features of a debate	

- iii. write a good debate using the features
- iv. present a debate
- e) **RPK:** Learners argue on issues of interest.
- f) Introduction/pre-writing stage: Introduce the lesson by asking learners to;
  - i. brainstorm (in two mixed gender groups), on which of these two people is more important – a farmer and a teacher
  - ii. share their opinions with the wider class

# g) Tasks/Activities/ Writing Stage:

 In mixed gender groups, let learners brainstorm and come out with the meaning of debate.

#### Note:

A debate is a formal discussion or a process that involves a formal discourse of a particular topic often including a moderator and audience, etc.

Also, it is an organized argument between two opposing sides on a given topic with some agreed modalities.

ii. Through a discussion method, guide learners to identify the features of a debate.

Note:

A debate has three main features.

# Introduction:

(Vocatives, motion and declaration of stand)

**Body**: (Explanation of key terms or words of the motion,

- iii. write a good debate using the features
- iv. present a debate v.
- e) **RPK:** Learners argue on issues of interest.
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A debate has three main features.

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(Vocatives, motion and declaration of stand)

**Body:** (Explanation of key terms or words of the motion,

rebuttal of opponent points, state your main points, etc.)

**Conclusion:** (Summarize main points in the body, call for support, etc.)

- iii. In two groups, introduce a debate topic for learners and guide them to develop a good debate using the features of a debate.
  E.g.
  "Female education is the panacea for the country's underdevelopment"
- iv. Allow the groups to select their members to present their debate in the class.

# h) Core Points:

Writing skills, speaking skills, listening skills, critical thinking, etc.

### i) Closure:

Review the lesson by asking the learners to mention what they have learnt

# j) Evaluation

- i. What is a debate?
- ii. List the features of a debate
- iii. Write a debate for or against the motion: "The extraction of Ghana's mineral resources has caused more harm than good" and submit in the next lesson.

# k) Remarks:

\*Teachers would be guided to tease out the learning outcomes and learning indicators from the lesson. rebuttal of opponent points, state your main points, etc.)

#### **Conclusion:**

(Summarize main points in the body, call for support, etc.)

- iii. In two groups,
   introduce a debate
   topic for learners and
   guide them to develop
   a good debate using
   the features of a
   debate.
   E.g.
   "Female education is
  - "Female education is the panacea for the country's underdevelopment"
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	Tanakina	2.4. A - 1. + 1	2.4.14	20 :
3.	Teaching,	3.1 Ask teachers to identify gaps	3.1 Identify gaps in your sample	30 mins
	learning and	in their sample lesson plans	lesson plans and possible	
	assessment	and discuss possible ways of	ways of addressing same.	
_	D	addressing same.		
>	Reading and	_	_	
	discussion of	E.g.	E.g.	
	the teaching	a) Possible gap: Inadequate	Possible gap:	
	and learning	reading/reference materials	Inadequate	
	activities	on debate topics in English	reading/reference materials	
	noting,	Language, etc.	on debate topics in English	
	addressing,	Possible Solution: Use of a	Language, etc.	
	and	library, Newspapers, Journals,	Possible Solution: Use of a	
	explaining	OERs and other internet	library, Newspapers,	
	areas where	facilities, etc	Journals, OERs and other	
	teachers may		internet facilities, etc.	
	require	b) Possible gap: Not enough		
	clarification	differentiated work to reflect		
		different fluency level of		
>	Noting	learners		
	opportunities	Possible solution: Set		
	for making	differentiated		
	<i>explicit</i> links	activities and allow more		
	to the	time for		
	Secondary	slow learner		
	School			
	Curriculum	3.2 Ask teachers to tease out	3.2 Tease out the learning	
>	Noting	the learning outcomes and	outcomes and learning	
	opportunities	learning indicators from the	indicators from the sample	
	for	sample lesson plan above	lesson plan above.	
	integrating:	and link these to the		
	GESI	objectives of the lesson.		
	responsivenes			
	s and ICT and	LO: Demonstrate knowledge	LO: Demonstrate knowledge	
	21st C skills	and understanding of a debate	and understanding of a debate	
>	Reading,	and its features.	and its features.	
	discussion,	LI 1.1 Explain the term debate	LI 1.1 Explain the term	
	and		debate	
	identification			
	of continuous	LI 1.2 State the features of a	LI 1.2 State the features of a	
	assessment	debate.	debate.	
	opportunities			
	in the lesson.	LI 1.3 Write a debate for or		
	Each lesson	against the motion: "Technology		
	should	has made the world a better		
	include at	place".		
	least two			
	opportunities	E.g		
	to use	The LO 'goes beyond' the		
	continuous	objectives so concentrating only		
	assessment to	of the objectives is not enough		
	support			

	learner
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- er ing
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  - ks to the sting PD emes, ample, ion earch, estionin nd to ner ternal erence terial: erature, web, uTube, vsical ources, power point; how they should be used. Considerati
  - on needs to be given to local availability and guidance on any power point presentatio ns, TLM or other resources which need to be developed to support learning

3.3 Ask teachers to suggest alternative ways of delivering the sample lesson.

E.g.

- a) Use YouTube videos or prerecorded videos on academic and political debates etc.
- b) Demonstration/simulation
- c) Invite resources persons
- d) Peer teaching, etc.
- 3.4 Ask teachers to show how their sample lesson plan can promote GESI responsiveness.

E.g.

- a) Classroom arrangement that facilitates interaction
- b) Putting learners in mixed ability/gender groups
- c) Using positive feedback to learners especially the disadvantaged/marginal ized
- d) Using a local resource person(s) who has/have defied stereotyping to succeed in English Language, etc.
- 3.5 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices i.e., assessment for learning and assessment as learning.

E.g.

- a) Use assessment to diagnose learners' needs (for)
- b) Use assessment to review learners' progress (for)
- c) Use assessment to give quidance about opportunities through feedback (for)

3.3 Suggest alternative ways of delivering the sample lesson.

E.g.

- a) Use YouTube videos or prerecorded videos on academic and political debates etc.
- b) Demonstration/simulation
- 3.4 Review the sample lesson plans to identify activities that promote GESI responsiveness.

E.g.

- a) Using classroom arrangement that facilitates interaction among all learners
- b) Putting learners in mixed ability/gender groups

3.5 Discuss how the session is linked to the use of formative assessment tools and practices i.e., assessment for learning and assessment as learning.

- a) Use assessment to diagnose learners' needs (for)
- b) Use assessment to review learners' progress (for)
- c) Encourage self-assessment (as), etc.

		d) Encourage self-assessment		
		(as), etc.		
		3.6 In groups, ask teachers to suggest other assessment methods that could be used in the sample lesson.	3.6 In groups suggest other authentic assessment methods that could be used in the sample lesson.	
		E.g. a) Self-assessment b) Peer-assessment c) Project d) Role-play e) Portfolio, etc.	E.g. a) Self-assessment b) Peer-assessment	
		3.7 Guide teachers to list and discuss how the session makes use of resources to support relevant activities in the NTS.	3.7 List and discuss how the session makes use of resources to support relevant activities in the NTS.	
		E.g. a) Pre-recorded videos b) Photographs c) OERs/Internet facilities d) Projectors, etc.	E.g. a) Pre-recorded videos b) Photographs c) OERs/Internet facilities, etc.	
		3.8 Ask a teacher to model a teaching activity if the sample lesson plan. (Extension Activity)	3.8 Model a teaching activity in the sample lesson plan. (Extension Activity)	
4.	Evaluation and review of session:	4.1 Ask teachers to reflect and write what they have learnt in the session.	4.1 Reflect and write what you have learnt in the session.	15 mins
>	Identifying and addressing any	4.2 Ask them to share what they have learnt with the larger group.	4.2 Share what they have learnt with the larger group.	
	outstanding issues relating to the lesson/s for clarification	4.3 Remind teachers to identify a critical friend to observe them in teaching their lessons in relation to PLC Session 5 and provide feedback at the next PLC session.	4.3 Identify a critical friend to observe you in teaching your lesson in relation to PLC Session 5 and provide feedback at the next PLC session.	
<b>&gt;</b>	Noting that teachers need to identify critical friends to observe lessons and report at next session	4.4 Remind teachers to read Session 6 from the PLC Handbook in preparation for the next session.	4.4 Read Session 6 from the PLC Handbook in preparation for the next session.	

PLC Session 6: Knowledge of Educational Frameworks and Curriculum			
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
Review of previous session and introduction to new session	1.1 Ask a teacher who observed a lesson of a critical friend to share their findings with the group.	1.1 Share your findings of the lesson you observed your critical friend teach after the last PLC session.	25 mins
NB The guidance for PLC Coordinator should identify, address, and provide explanations for any areas where teachers might require clarification on an aspect of the lesson.	1.2 Ask a teacher to read National Teachers' Standards 2a, 2b, 2c and 2d under Professional Knowledge of the NTS and deduce possible learning outcomes (LOs) and learning indicators (LIs) for the session before reading the LOs and LIs (listed below) for the session.	1.2 Read National Teachers' Standards (NTS 2a, 2b, 2c and 2d) under <i>Professional</i> Knowledge of the NTS and deduce possible learning outcomes (LOs) and learning indicators (LIs) for the session before reading the LOs and LIs (listed below) for the session.	
NB PLC Coordinator should ask teachers to plan for their teaching as they go through the PLC session	Note: LO: Learning Outcome: This is the expected knowledge, understanding, skills, etc., to be acquired at the end of a lesson (Common Core Programme Curriculum).	Note: LO: Learning Outcome: This is the expected knowledge, understanding, skills, etc., to be acquired at the end of a lesson (Common Core Programme Curriculum).	
	LI: Learning Indicator: This is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products (Common Core Programme Curriculum).  LO 1: Exhibit familiarity with the education system and key policies guiding it (NTS 2a, 2b).  LI 1.1 State the similar	LI: Learning Indicator: This is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products (Common Core Programme Curriculum) LO1: Exhibit familiarity with the education system and key policies guiding it (NTS 2a, 2b). LI 1.1 State the similar	
	characteristics of key educational policies  LI 1.2 State two differences in key educational policies	characteristics of key educational policies  LI 1.2 State two differences in key educational policies	
	LI 1.3 Explain expected outcomes of educational curricula	LI 1.3 Explain expected outcomes of educational curricula	

- LI 1.4 Analyse the importance of educational frameworks.
- LO 2: Demonstrate comprehensive knowledge of the official school curriculum, including learning outcomes (NTS 2b, 3o).
- LI 2.1 Discuss issues that surround the implementation of the curriculum for vulnerable groups (NTS 3f, 3g and 3m)
- LI 2.2 Describe how gender inequalities can affect learner outcomes.
- LI 2.3 Outline what learners need to work towards achieving higher examination grades.
- LO 3: Show a command of content knowledge, pedagogical knowledge and pedagogical content knowledge (NTS 2c).
- LI 3.1 State how gaps in subject and pedagogical knowledge of teachers can be identified and addressed
- LI 3.2 Explain how children develop and learn in diverse contexts and apply this in teaching
- LI 3.3 Describe how you will organize learning using teacher and learner centred and gender responsive pedagogies.
- LO4: Demonstrate knowledge of how to teach numeracy and literacy in multi-grade classrooms at the early grade level (NTS 2d).

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- LO 4: Demonstrate knowledge of how
- to teach numeracy and literacy in multi-grade classrooms at the early grade level (NTS 2d).

- LI 4.1 Plan and teach using differentiated instruction
- LI 4.2 Guide learners to perform mathematical operations using manipulatives
- LI 4.3 Guide learners to read and write using an appropriate language teaching tool.
- 1.3 Ask teachers to state the similar characteristics of key educational policies.
- E.g. Each policy has items including the following:
  - a) Preamble
  - b) Policy goal(s)
  - c) Policy objective(s)
  - d) Policy statement(s)
  - e) Policy implementation plan.
- 1.4 In groups, ask teachers to discuss the differences of key educational policies.
- E.g. Content of policy depends on rationale, objectives, outcomes, etc.
- Ask teachers to identify expected outcomes of some educational policies.

- a) The Pre-Tertiary Teacher Professional Development and Management (PTPDM) Policy Expected Outcomes
- b) Provide the framework for developing standards, core values and ethics for the teaching profession.
- c) Develop teachers' ability to adopt reflective

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- E.g. Content of policy depends on rationale, objectives, outcomes, etc.
- 1.5 Identify expected outcomes of some educational policies.

- a) The Pre-Tertiary Teacher Professional Development and Management (PTPDM) Policy Expected Outcomes
- Provide the framework for developing standards, core values and ethics for the teaching profession.
- c) Develop teachers' ability to adopt reflective teaching approaches to enhance the

- teaching approaches to enhance the quality of lesson delivery
- d) Specify principles for teacher management in order to motivate excellence in teacher performance and commitment to lifelong learning
- e) Provide areas for setting regulatory standards to govern teachers' work and living conditions in order to make teaching an attractive and rewarding career
- f) Foster the notion of teaching as a life-long career which is linked to an evidence-based system of career advancement and promotion, etc.
- 1.6 Ask teachers to write some of the expected outcomes of the educational curricula.
  - E.g. The Senior High School mathematics curriculum is aimed at developing individuals to become mathematically literate, good problem solvers, have the ability to think creatively and have both the confidence and competence to participate fully in Ghanaian society as responsible local and global citizens (Mathematics Syllabus for SHS, 2010).
- 1.7 Lead teachers to discuss the benefits of educational frameworks.

quality of lesson delivery, etc.

- 1.6 Write some of the expected outcomes of the educational curricula.
  - E.g. The Senior High School mathematics curriculum is aimed at developing individuals to become mathematically literate, good problem solvers, have the ability to think creatively and have both the confidence and competence to participate fully in Ghanaian society as responsible local and global citizens (Mathematics Syllabus for SHS, 2010).
- 1.7 Discuss the benefits of educational frameworks.

E.g. National Teacher
<b>Education Curriculum</b>
Frameworks

#### Note:

Educational frameworks are informed models for course designed that helps instructors align learning goals with classroom activities, create motivating and inclusive integrate environment, assessment into learning. For example, in demonstrating knowledge of educational frameworks and curriculum, every teacher needs to:

- a) show comprehensive knowledge of the official school curriculum, including learning outcomes
- b) secure content knowledge, pedagogical knowledge and pedagogical content knowledge
- c) demonstrate how curricula are approached and taught at all levels
- d) highlight possible misconceptions and how they can be addressed, etc. (NTS 2a, 2b, 2c and 2d).

E.g. National Teacher Education Curriculum Frameworks

#### Note:

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- secure content knowledge, pedagogical knowledge and pedagogical content knowledge

# Give regard for misconceptions and stereotypes, GESI, ICT, 21<sup>st</sup> century skills, etc.

1.8 Ask teachers to identify possible misconceptions and stereotypes in learning various subjects.

E.g. (Mathematics)

a) If you want to be good at mathematics, you have to memorize lots of facts and formulas

1.8 Identify possible misconceptions and stereotypes in learning various subjects

E.g. (Mathematics)

 a) If you want to be good at mathematics, you have to memorize lots of facts and formulas

- b) Some students don't just have an aptitude for mathematics
- c) There is only one way to solve a problem in mathematics
- d) Girls are less interested in mathematics than boys, etc.
- 1.9 Discuss how these misconceptions about teaching and learning in mathematics

b) Some students don't

for mathematics

just have an aptitude

1.9 Discuss with teachers how these misconceptions about teaching and learning in mathematics classroom can be addressed.

E.g.

- a) Teachers should discover students' systematic errors in mathematics
- b) Teachers should mostly focus on identifying students' misconceptions rather than student errors
- c) Teachers must create conducive learning environment for all learners, etc.
- 1.10 Ask teachers to identify activities that promote GESI responsiveness in the classroom (NTS 3a, 3c).

E.g.

- a) Classroom arrangement that facilitates interaction
- b) Mixed ability/gender groupings
- Using positive feedback to students especially the disadvantaged
- d) Use of gender responsive language (E.g. Head of school), etc.

1.11 Ask teachers to identify ways of incorporating ICT in

misconceptions about teaching and learning in mathematics classroom can be addressed.

E.g.

- Teachers should discover students' systematic errors in mathematics
- b) Teachers should mostly focus on identifying students' misconceptions rather than student errors

1.10 Identify activities that promote
GESI responsiveness in the classroom
(NTS 3a, 3c).

E.g.

- a) Classroom arrangement that facilitates interaction
- b) Mixed ability/gender groupings
- c) Using positive feedback tostudents especially the disadvantaged, etc.

1.11 Identify ways of incorporating ICT into their

their lessons taking into consideration different learning styles (NTS 3i, 3j) lessons taking into consideration different learning styles (NTS 3i, 3j).

#### E.g.

- a) Surfing Open
  Educational Resources
  and other Internet
  sources for information,
  etc.
- b) Teaching using different representation formats including presentations using Microsoft PowerPoint, Microsoft Excel, Microsoft Word, etc.

E.g.
Surfing Open Educational
Resources and other Internet
sources for information, etc.

1.12 Ask teachers to discuss possible activities they would adopt to develop the 21st century skills in their learners (NTS 3a, 3b, 3c and 3d).

1.12 Discuss possible activities you would adopt to develop the 21st century skills in their learners (NTS 3a, 3b, 3c and 3d).

#### Note:

#### **Communication skill**

E.g. group discussion, Roleplay, presentation, etc.

#### **Collaboration**

E.g. group discussion, project/research, Role-play, hands-on activities, etc.

# Observation and enquiry skills

E.g. group discussion, project/research Role-play, hands-on activities, etc.

## Creativity and innovation

E.g. group discussion, project/research, role-play, hands-on activities, presentation, etc.

#### Personal development

**E.g.** group discussion, project/research, role- play,

#### Note:

## **Communication skills**

E.g. group discussion, Role-play, presentation, etc.

#### Collaboration

E.g. group discussion, project/research, Role-play, hands-on activities, etc.

#### Observation and enquiry skills

E.g. group discussion, project/research Role-play, hands-on activities, etc.

## Creativity and innovation

E.g. group discussion, project/research, Role-play, hands-on activities, presentation, etc.

		hands-on activities, extended		
2.	Planning for	learning, presentation, etc.  2.1 Ask teachers to discuss	2.1 Discuss samples of their	20 mins
	teaching,	samples of their lesson plans	lesson plans based on the SHS	20 1111113
	learning and	based on the SHS 2010	2010 syllabuses in your	
	assessment	syllabuses in their respective	respective subjects and link	
	activities for the	subjects and link them to the	them to the NTS (NTS 3a, 3e, 3g	
	lesson/s making links to	NTS (NTS 3a, 3e, 3g and 3j).	and 3j).	
	secondary school	(E.g. Mathematics)	(E.g. Mathematics)	
	curriculum	An example of an outline for	An example of an outline	
		teaching understanding Sets	for teaching understanding	
		and Operations on Sets from	Sets and Operations on Sets	
		the SHS 2010 Mathematics Syllabus*	from the SHS 2010  Mathematics Syllabus*	
		Synabas	Wathematics Syllabas	
		a) <b>Topic:</b> Sets and	a) <b>Topic:</b> Sets and Operations	
		Operations on Sets	on Sets	
		b) <b>Sub-topic</b> : Finding the	b) <b>Sub-topic</b> : Finding the	
		number of subsets in a	number of subsets in a set	
		set with N elements	with N elements	
		c) <b>Objective</b> : Determine and	a) Objective Datarmina and	
		write the number of	c) <b>Objective</b> : Determine and write the number of	
		subsets in a set	subsets in a set	
		d) Relevant previous	d) Relevant previous	
		<b>knowledge</b> : students can describe sets	<b>knowledge</b> : students can describe sets	
			describe sets	
		e) <b>Introduction</b> : Review	e) Introduction: Review with	
		with students the description of sets	students the description of	
		description of sets	sets	
		f) Tasks/activities:	f) Tasks/activities:	
		i. Present instructional	i. Present instructional	
		resources (consider	resources (consider	
		different learning styles in selection) and	different learning styles in selection) and guide	
		guide students to	students to group them	
		group them into	into various sets	
		various sets	ii. Guide learners in a	
		ii. Guide learners in a	discussion to find the	
		discussion to find the number of subsets they	number of subsets they can derive from the set	
		can derive from the set	of objects given	
		of objects given	-,, g	
		iii. In groups, let learners	iii. In groups, let learners	
		discuss to deduce a	discuss to deduce a	
		formula for finding the	formula for finding the	

	number of subsets that	number of subsets that	
	can be derived in a	can be derived in a	
	given set. E.g. The <b>Set</b>	given set. E.g. The	
	{ <b>a</b> } has two subsets	<b>Set</b> $\{a\}$ has two	
	$\{a\}$ and the $\{\ \}$	subsets $\{m{a}\}$ and the $\{\ \}$	
	iv. Guide students to	iv. Guide students to	
	create a table showing	create a table showing	
	the relationship	the relationship	
	between elements in a	between elements in a	
	set and the number of	set and the number of	
	subsets	subsets	
	g) <b>Core Points</b> : The	g) <b>Core Points</b> : The	
	number of subsets in a	number of subsets in a	
	given set is calculated	given set is calculated	
	as $2^n$ where 'n' is the	as $2^n$ where 'n' is the	
	number of elements in	number of elements in	
	the set	the set	
	h) Core Competencies	h) Core Competencies:	
	Collaboration, problem	Collaboration, problem	
	solving, critical thinking,	solving, critical thinking,	
	etc.	etc.	
	i) <b>Closure:</b> Review	i) <b>Closure:</b> Review the	
	the lesson and ask	lesson and ask	
	evaluation questions	evaluation questions	
	j) <b>Evaluation</b> : Find the	j) <b>Evaluation</b> : Find the	
	number of subsets in a	number of subsets in a	
	set with 5 elements.	set with 5 elements.	
	*Teachers would be guided	* Teachers would be guided to	
	to tease out the LOs and the	tease out the LOs and the LIs	
	LIs from the sample lesson	from the sample lesson and	
	and compare with the	compare with the objectives of	
	objectives of the lesson.	the lesson.	
3. Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in their	30 mins
learning and	gaps in their sample lesson	sample lesson plans and	
assessment	plans and discuss possible	discuss possible ways of	
	ways of addressing them (NTS	addressing them (NTS 1a,	
Reading and	1a, 3d, 3e, 3f, 3g and 3m).	3d, 3e, 3f, 3g and 3m).	
discussion of the	E contract of the	E contract on #4	
teaching and	Examples of <i>possible gaps:</i>	Examples of <i>possible gaps:</i>	
learning	a. Inadequate prescribed	a) Inadequate prescribed	
activities noting,	textbooks for	textbooks for	
addressing, and	mathematics	mathematics,	
explaining areas	<b>b.</b> Lack of gender	b) Lack of gender	
where teachers	responsive materials in	responsive materials in	
may require	the classroom, etc.	the classroom, etc.	
clarification			

>	Noting	Possible solutions:	Possible solutions:	
	opportunities for	Use of:	Use of:	
	making <i>explicit</i>	<b>a)</b> a library	a) a library	
	links to the	<b>b)</b> Open Educational	<b>b)</b> Open Educational	
	Secondary	Resources (OERs)	Resources (OERs) and	
	School	and <b>o</b> ther Internet	other Internet facilities	
	Curriculum	facilities		
>	Noting	c) PLC sessions on GESI,		
	opportunities for	etc.		
	integrating: GESI			
	responsiveness	3.2 Ask teachers to tease out	3.2 Tease out the learning	
	and ICT and 21st	the	outcomes	
	C skills	learning outcomes and	and learning indicators from	
>	Reading,	learning	the	
	discussion, and	indicators from the sample	sample lesson plan.	
	identification of	lesson	Sumple lesson plan.	
	continuous	plan.		
	assessment	pian.		
	opportunities in	E.g.	E.g.	
	the lesson. Each	LO: Demonstrate knowledge	LO: Demonstrate knowledge of	
	lesson should	of the subsets in a set.	the subsets in a set.	
	include at least	LI 1. Determine the number of	LI 1. Determine the number of	
	two	subsets in a set	subsets in a set	
	opportunities to	LI 2. Deduce a formula for	Subsets III a set	
	use continuous	calculating the number of		
	assessment to	subsets in a given set.		
	support student	subsets in a given set.		
	teacher learning	3.3 Ask teachers to suggest	3.3 Suggest alternative ways of	
>	Resources:	alternative	delivering the sample lesson.	
	Links to the	ways of delivering the sample	delivering the sample lesson.	
	existing PD	lesson.		
	Themes, for	lesson.		
	example, action	E.g. Use of:	E.g. Use of:	
	research,	a) flipped classroom,	a) flipped classroom,	
	questioning and	b) extended learning	b) extended learning	
	to other external	c) simulation	c) simulation	
	reference	d) real life examples	c) simulation	
	material:	e) using algebra		
	literature, on	f) using Venn diagrams, etc.		
	web, YouTube,	j, asing venin alagrams, etc.		
	physical	3.4 Ask teachers to identify	3.4 Identify activities that	
	resources, power	activities that promote GESI	promote GESI responsiveness in	
	point; how they	responsiveness in their	your sample lesson plans (NTS	
	should be used.	sample lesson plans (NTS 3c,	3c, 3e, 3f and 3g).	
0	Consideration	3e, 3f and 3g).	30, 30, 31 and 38).	
	needs to be	50, 51 and 5g).		
	given to local	E.g.	E.g.	
	availability and	a) Classroom	a) Classroom	
	guidance on any	arrangement that	arrangement that	
	power point	facilitates interaction	facilitates interaction	
	presentations,	jacintates interaction	jacimates interaction	
	presentations,	l		

TLM or other
resources which
need to be
developed to
support learning

- b) Mixed ability/gender groupings
- c) Using positive feedback to students especially the disadvantaged
- d) Use of a local materials
- e) Fair distribution of questions
- f) Using posters that represent male and female students appropriately, etc.
- 3.5 Discuss how the session is linked to the use of formative assessment tools and practices for assessment *for* learning and assessment *as* learning (NTS 3k,

3I and 3m).

- 3.5 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices for example, assessment *for* learning and assessment *as* learning (NTS 3k, 3l and 3m).
- E.g. Self-assessment (as), peerassessment (as/for) Project (for), portfolio (for)
- 3.6 Ask teachers to list and discuss how the sample lesson makes use of resources to support relevant activities in the NTS.

E.g.

- a) Posters on Sets
- b) Charts showing the relationship between operations on sets
- c) Task sheets, etc.
- 3.7 Ask one teacher to model a teaching activity in the sample lesson plan. (Extension Activity)

- b) Mixed ability/gender groupings
- c) Using positive feedback to students especially the disadvantaged, etc.

- E.g. Self-assessment (as), peerassessment (as/for) Project (for),
- 3.6 List and discuss how the sample lesson makes use of resources to support relevant activities in the NTS.

- a) Posters on Sets,
- b) Charts showing the relationship between operations on sets
- 3.7 Model a teaching activity in the sample lesson plan.(Extension Activity)

- 4. Evaluation and review of session:
- Identifying and addressing any outstanding issues relating to the lesson/s for clarification
- Noting that teachers need to identify critical friends to observe lessons and report at next session
- 4.1 Ask teachers to reflect and write what they have learnt in the session using 'Talk-to-the-hand' strategy (Each teacher places the palm on a sheet of paper and trace the fingers out, and in each finger, write one thing learnt. In all, five things will be written.
- 4.2 Ask teachers to share what they have written with the larger group (NTS 1a).
- 4.3 Remind teachers to identify a critical friend to observe them while they teach their lesson in relation to PLC Session 6 and provide feedback at the next PLC session.
- 4.4 Remind teachers read
  Session 7 from the PLC
  Handbook in preparation
  for the next session.

4.1 Reflect and write what you have learnt in the session.
Using the 'Talk-to-the-hand' strategy, write five things learnt.

15 mins

- 4.2 Share what you have written with the larger group (NTS 1a).
- 4.3 Identify a critical friend to observe your lessons in relation to PLC Session 6 and provide feedback at the next PLC session.
- 4.4 Remember to read Session 7 from the PLC Handbook in preparation for the next session.

	PLC Session 7: Knowled	dge of Learners	
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to new session	1.1 Start the session with an ice breaker. E.g. Candy ice, doubledouble.	1.1 Participate in the ice breaker.	25 mins
NB The guidance for PLC Coordinator should identify, address, and provide explanations for any areas where	<ul><li>1.2 Ask a teacher who observed a lesson of a critical friend to share their findings with the group.</li><li>1.3 Ask a teacher to read</li></ul>	1.2 Share your findings of the lesson you observed your critical friend teach after the last PLC session.  1.3 Read Standards 2e and 2f	
teachers might require clarification on an aspect of the	Standards 2e and 2f of the NTS.	the NTS.	
NB PLC Coordinator should ask teachers to plan for their teaching as they go	1.4 Ask a teacher to read the learning outcomes (LOs) and learning indicators (LIs) of the session to set the stage for the session.	1.4 Read the learning outcomes (LOs) and learning indicators (LIs) of the session to set the stage for the session.	
through the PLC session	LO 1: Demonstrate understanding of how students learn in diverse contexts.	LO 1: Demonstrate understanding of how students learn in diverse contexts.	
	LI 1.1 Give examples of different contexts under which learners learn.	LI 1.1 Give examples of different contexts under which learners learn.	
	LI 1.2 Explain how contexts under which learners learn influence how they learn. LO 2: Demonstrate understanding of different learning styles of learners.	LI 1.2 Explain different contexts under which learners learn influence how they learn. LO 2: Demonstrate understanding of different learning styles of learners.	
	LI 2.1 List at least three different learning styles. LI 2.2 Analyse at least three different learning styles of learners.	LI 2.1 List at least three different learning styles. LI 2.2 Analyse at least three different learning styles of learners.	

	IO 2: Domonstrata	IO 2: Domonstrata linguidades	
	LO 3: Demonstrate	LO 3: Demonstrate knowledge	
	knowledge and	and understanding of GESI.	
	understanding of GESI issues.		
	LI 3.1 Mention at least five GESI related issues in learning.	LI 3.1 Mention at least five GESI related issues in learning.	
	LI 3.2 Outline the need for incorporating GESI issues into classroom activities.	LI 3.2 Outline the need for incorporating GESI issues into classroom activities.	
	LO 4: Demonstrate the use of GESI issues in lesson plan preparation and classroom management.	LO 4: Demonstrate the use of GESI issues in lesson plan preparation and classroom management.	
	LI 4.1 Show how GESI issues can be embedded in lesson plan preparation.	LI 4.1 Show how GESI issues can be embedded in lesson plan preparation.	
	LI 4.2 Describe how GESI would be integrated into classroom management.	LI 4.2 Describe how GESI would be integrated into classroom management.	
	1.5 Ask teachers to discuss and relate the concept of knowledge of learners to their various subject domains (NTS 1a, 2e and 3i).	1.5 Discuss and relate the concept of knowledge of learner to your various subject domains (NTS 1a, 2e and 3i).	
	1.6 Ask teachers to identify different learning styles of learners that will enhance teaching of their subjects (NTS 2e, 2f, 3e and 3g). <i>E.g.</i>	1.6 Identify different learning styles of learners that will enhance teaching of your subjects (NTS 2e, 2f, 3e and 3g).	
	a) Auditory learning b) Kinesthetic learning c) Tactile learning d) Visual learning	E.g. a) Auditory learning b) Visual learning	
Give regard for	1.7 Ask teachers to identify	1.7 Identify possible	30 mins
possible	possible misconceptions and	misconceptions and	
misconceptions and	stereotypes about their	stereotypes about your subject	
stereotypes, GESI,	subjects (NTS 3m).	(NTS 3m).	
ICT, 21 <sup>st</sup> century			
skills, etc.	E.g. (Social Studies)	E.g. (Social Studies)	
	a) Social Studies is for	a) Social Studies is for	
	students with very low IQ	students with very low IQ.	
<u> </u>	, ,	, , , , , , , , , , , , , , , , , , , ,	<u>.                                    </u>

- b) Social Studies is easy to pass
- c) Social Studies is mainly Geography, etc.
- 1.8 Ask teachers to discuss possible ways to address these misconceptions and stereotypes in their subject areas in the classroom (NTS 3m).
- E.g. (Social Studies) *Invite a resource person to* draw the attention of teachers and learners to the links between Social Studies and the other subjects. The message could be that Social Studies as a subject supports other subjects and is supported by other subjects. For example, why learners from a particular background cannot access support in English language easily can be explained by Social Studies. Similarly, good numeracy skills (such as calculations) can facilitate map reading in Social Studies.
- 1.9 Ask teachers, in mixed gender groups (where possible), to list some 21<sup>st</sup> century skills that are required to cater for all learners' needs in the classroom (NTS 3f, 3g and 3j).
- E.g. Communication skills, collaboration skills, observation and enquiry skills, digital literacy, creativity, personal development.
- 1.10 Ask teachers to identify ways of incorporating ICT in their lessons to cater for

- b) Social Studies is easy to pass
- 1.8 Discuss possible ways to address these misconceptions and stereotypes in your subject areas in the classroom (NTS 3m).
- E.g. (Social Studies)
  Invite a resource person to
  draw the attention of teachers
  and learners to the links
  between Social Studies and the
  other subjects.

- 1.9 In mixed gender groupings (where possible), list some 21<sup>st</sup> century skills that are required to cater for all learners' needs in the classroom (NTS 3f, 3g and 3j).
- E.g. Communication skills, collaboration skills, etc.
- 1.10 Identify ways of incorporating ICT in your lessons to cater for every learner's needs (NTS 3j).

every learner's needs (NTS 3j).

E.g.

- a) Surfing, Open
   Educational Resources
   (OERs) and other Internet
   sources for teaching and
   learning strategies that
   make use of learners'
   preferred learning styles.
- b) Other sources and tools that can be used to learn more about ICT mediated teaching and learning include:

Office 365 vs G-suite for education, google meet for online teaching, google classroom for online assignment submissions, plagiarism checking software, tools for checking grammar errors online, etc.

1.11 Ask teachers to discuss possible activities they would adopt to develop the 21<sup>st</sup> century skills in their learners (NTS 2c, 3h and 3j).

E.g.

## a) Communication skills:

E.g., group discussion providing opportunities for learners to develop oral presentation skills.

b) Collaboration skills:

E.g. group projects that will make use of the strengths of learners of different backgrounds.

c) Observation and enquiry skill:

E.g., group discussion or project/research work that encourages all learners to experiment with ideas and come up with their own findings.

E.g. Surfing Open Educational Resources and other Internet sources for teaching and learning strategies that make use of learners' preferred learning styles, etc.

1.11 Discuss possible activities you would adopt to develop the 21<sup>st</sup> century skills in your learners (NTS 2c, 3h and 3j).

E.g.

## a) Communication skills:

E.g., group discussion providing opportunities for learners to develop oral presentation skills.

b) Collaboration skills:

E.g., group projects that will make use of the strengths of learners of different backgrounds.

E.g. activities that provide opportunities for learners to create variants of given scenarios using their own experiences e) Personal development skills: E.g. group projects that provide opportunities for learners to take leadership roles irrespective of how they learn  2. Planning for teaching, learning and assessment activities for the lesson/s making links to the secondary school curriculum  E.g. Sample lesson plan in social studies: Refer to Social Studies: Refer to Social Studies: Refer to Social Studies Teaching syllabus 2010 Year 1.  An example of an outline plan for teaching based on the 2010 SHS Social Studies Syllabus*.  a) Topic: National Independence and Self-reliance b) Sub-topic: Political Independence c) Objectives: By the end of the lesson, the learner will be able to; i. explain the term political Independence. ii. state at least two reasons why Ghanaians misconstrued the implications of independence. iii. state at least two reasons why Ghanaians misconstrued the implications of independence. iii. independe			d) Creativity and innovation skills:		
learners to create variants of given scenarios using their own experiences   Personal development skills: £9, group projects that provide opportunities for learners to take leadership roles irrespective of how they learn			1		
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			independence.	independence.	

- d) Relevant Previous Knowledge (RPK):
  - Learners have been taking part in 6<sup>th</sup> March activities.
- e) Introduction: Discuss with learners what 6<sup>th</sup> March reminds them of.

## f) Tasks/activities:

- i. Ask learners to brainstorm the concept of political independence.
- ii. Put learners in mixed ability groups to discuss whether an independent nation should continue to rely on the colonial masters for their survival.
- iii. Ask each group to present their findings to the class using variety of resources.

## g) Core Points:

- i. Political independence means gaining self-rule from a colonial master thus entitling the new nation to govern itself.
- ii. Some people thought independence was an end in itself and was a time to amass wealth.
- iii. Some people believed that political independence was an answer to their economic woes.
- h) Core competencies:

Critical thinking and problem solving, communication and collaboration, personal development and leadership, and digital literacy.

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		:) Classing	i) Clasura.	
		i) Closure:	i) Closure:	
		Use leading questions to	Use leading questions to	
		review the lesson with	review the lesson with	
		learners.	learners.	
		j) Evaluation:	j) Evaluation:	
		a) What is political	a) What is political	
		independence?	independence?	
		b) Explain at least 2	b) Explain at least 2	
		reasons why	reasons why	
		Ghanaians	Ghanaians	
		misconstrued the	misconstrued the	
		implications of	implications of	
		independence.	independence.	
		*Teachers would be guided	*Teachers would be guided to	
		to tease out the learning	tease out the learning	
		outcomes and the learning	outcomes and the learning	
		indicators from the sample	indicators from the sample	
		lesson plan.	lesson plan.	
3.	Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in your sample	30 mins
	learning and	gaps in their sample lesson	lesson plans and discuss	
	assessment	plans and discuss possible	possible ways of addressing	
		ways of addressing same	same (NTS 3a).	
>	Reading and	(NTS 3a).	, ,	
	discussion of the	, ,		
	teaching and	<b>E.g. Possible gap:</b> Inadequate	E.g. <b>Possible gap:</b> Inadequate	
	learning	prescribed textbooks, etc.	prescribed textbooks, etc.	
	activities noting,	,	,	
	addressing, and	<b>Possible Solution:</b> use of a	<b>Possible Solution:</b> use of a	
	explaining areas	library, OERs and other	library, OERs and other Internet	
	where teachers	Internet facilities, etc.	facilities.	
	may require	,		
	clarification	Possible gap: Lack of		
		differentiation in activities		
>	Noting	in the lesson.		
	opportunities for			
	making <i>explicit</i>	<b>Possible solution:</b> Set tasks		
	links to the	taking into account		
	Secondary	learners different learning		
	School	styles		
	Curriculum	<u> </u>		
>	Noting	3.2 Ask teachers to tease out	3.2 Tease out the learning	
	opportunities for	the learning outcomes and	outcomes and the learning	
	integrating: GESI	the learning indicators from	indicators from the sample	
	responsiveness	the sample lesson plan (NTS	lesson plan (NTS 3h).	
	and ICT and 21st	3h).		
	Century skills	,		
>	Reading,	E.g.	E.g.	
	discussion, and	LO: Demonstrate	LO: Demonstrate	
	identification of	understanding of the concept	understanding of the concept	
Щ		a section and of the concept	and the same of the contect	

continuous
assessment
opportunities in
the lesson. Each
lesson should
include at least
two
opportunities to
use continuous
assessment to
support student
teacher learning

> Resources:

0

links to the existing PLC Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration needs to be given to local availability and guidance on any power point presentations, TLM or other resources which need to be developed to support learning

of political independence LI 1 Explain the term political independence.

LI 2 State at least two reasons why Ghanaians misconstrued the implications of independence.

3.3 Ask teachers to identify activities that promote GESI responsiveness in their sample lesson plans (NTS 3c, 3e, 3f and 3g).

of political independence LI 1 Explain the term political independence.

3.3 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3g).

E.g.

- a) Classroom arrangement that facilitates interaction among learners.
- b) Mixed ability/gender grouping that encourage collaboration among learners.
- Using positive feedback to students especially the disadvantaged.
- d) Use of a local resource person who has defied stereotyping / stigma to succeed in Social Studies.
- 3.4 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices, e.g., assessment for learning and assessment as learning (NTS 3k, 3l).
- 3.5 In groups, ask teachers to suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3l and 3p).
- E.g. Self-assessment, peerassessment, portfolio, project, role-play, etc.

- a) Classroom arrangement that facilitates interaction amona learners.
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- 3.5 In groups, suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3l and 3p).
- E.g. Self-assessment, peer-assessment, etc.

		T	T	
		3.6 Guide teachers to list and discuss how the session makes use of resources to support relevant activities in the NTS (NTS 3j).	3.6 List and discuss how the session makes use of resources to support relevant activities in the NTS (NTS 3j).	
		E.g. Pre-recorded videos, posters, photographs, OERs/Internet facilities, projectors, etc.	E.g. Pre-recorded videos, posters, etc.	
		3.7 Ask one teacher to model a teaching activity in the sample lesson plan (NTS 1a, 3a). (Extension Activity)	3.7 Model a teaching activity in the sample lesson plan (NTS 1a, 3a). (Extension Activity)	
4.	<b>Evaluation and</b>	4.1 Ask teachers to reflect	4.1 Reflect and write what you	15 mins
	review of	and write what they have	have learnt in the session.	
	session:	learnt in the session.		
>	Identifying and addressing any outstanding issues relating to	4.2 Ask teachers to share what they have learnt with the larger group.	4.2 Share what you have learnt with the larger group.	
	the lesson/s for	4.3 Remind teachers to	4.3 Identify a critical friend to	
	clarification	identify a critical friend to	observe you in teaching your	
		observe them in teaching	lessons in relation to PLC	
>	Noting that	their lessons in relation to	Session 7 and provide feedback	
	teachers need to	PLC Session 7 and provide	at the next PLC session.	
	identify critical	feedback at the next PLC		
	friends to	session.		
	observe lessons and report at	4.4 Remind teachers to read	4.4 Read Session 8 from the	
	next session	Session 8 from the PLC	PLC Handbook in preparation	
	HEAT SESSION	Handbook in preparation for the next session.	for the next session.	

## PLC Session for Topic 8: Managing the Learning Environment

	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to new session  NB The guidance for PLC	1.1 Ask a teacher who observed a lesson of a critical friend to share their findings with the group (NTS 1a, 1b and 1e).	1.1 Share your findings of the lesson you observed your critical friend teach after the last PLC session (NTS 1a, 1b and 1e).	25 mins
Coordinator should identify, address and provide explanations for any areas where teachers might require clarification on an aspect of the	1.2 Ask a teacher to read Standards 3a, 3b, 3c and 3d under <i>Professional Practice</i> of the NTS and the learning outcomes (LOs) and learning indicators (LIs) of the session to set the stage for the session.	1.2 Read Standards 3a, 3b, 3c and 3d under <i>Professional Practice</i> of the NTS and the learning outcomes (LOs) and learning indicators (LIs) of the session to set the stage for the session.	
lesson.  NB PLC Coordinator should ask teachers to plan for their teaching as they go	LO 1: Demonstrate knowledge and understanding of creating safe and encouraging learning environment (NTS 3c, 3d, 3e and 3f).	LO 1: Demonstrate knowledge and understanding of creating safe and encouraging learning environment (NTS 3c, 3d, 3e and 3f).	
through the PLC session.	LI 1.1 Give examples of how to create a warm, friendly and fair environment for teaching and learning (NTS 3c, 3d, 3e and 3f).	LI 1.1 Give examples of how to create a warm, friendly and fair environment for teaching and learning (NTS 3c, 3d, 3e and 3f).	
	LI 1.2 Give examples of how to create conducive physical learning environment (NTS 3c, 3d, 3e and 3f).	LI 1.2 Give examples of how to create conducive physical learning environment (NTS 3c, 3d, 3e and 3f).	
	LO 2: Demonstrate knowledge, understanding and skills of planning and delivering varied and	LO 2: Demonstrate knowledge, understanding and skills of planning and delivering varied and	

challenging lessons
showing a grasp of the
intended outcomes of
teaching (NTS 3e, 3f, 3g
and 3j).

LI 2.1 Prepare a scheme of learning for the semester bearing in mind GESI (NTS 2b, 2e and 3a).

LI 2.2 Prepare a lesson plan showing cross- cutting issues including GESI (NTS 2d, 2f and 3a).

LI 2.3 Model the delivery of a planned lesson (NTS 3e, 3g, 3k and 3p). (Extension Activity)

LO 3: Demonstrate knowledge, understanding and skills of carrying out action research to improve practices in the learning environment (NTS 3b).

LI 3.1 List learners' learning needs identified in the classroom (NTS 3a, 3b and 3m).

LI 3.2 Design an instrument for data collection (NTS 3n).

LI 3.3 List interventions to solve a problem identified in class (NTS 3a).

LI 3.4 Analyse and interpret data collected on teaching and learners' learning needs (NTS 3n).

challenging lessons showing a grasp of the intended outcomes of teaching (NTS 3e, 3f, 3g and 3j).

LI 2.1 Prepare a scheme of learning for the semester bearing in mind GESI (NTS 2b, 2e and 3a).

LI 2.2 Prepare a lesson plan showing cross-cutting issues and GESI (NTS 2d, 2f and 3a).

LI 2.3 Model the delivery of a planned lesson (NTS 3e, 3g, 3k and 3p). (Extension Activity)

LO 3: Demonstrate knowledge, understanding and skills of carrying out action research to improve practices in the learning environment (NTS 3b).

LI 3.1 List learners' learning needs identified in the classroom (NTS 3a, 3b and 3m).

LI 3.2 Design an instrument for data collection (NTS 3n).

LI 3.3 List interventions to solve a problem identified in class (NTS 3a).

LI 3.4 Analyse and interpret data collected on teaching and learners learning needs (NTS 3n).

	LO 4: Demonstrate knowledge understanding and skills of managing	LO 4: Demonstrate knowledge understanding and skills of managing
	behaviours with small and large class sizes (NTS 3c).	behaviours with small and large class sizes (NTS 3c).
	LI 4.1 Give examples of how to overcome challenges of teaching large class sizes (NTS 3d).	LI 4.1 Give examples of how to overcome challenges of teaching large class sizes (NTS 3d).
	LI 4.2 Give examples of how to manage behaviour in large classes (NTS 3d).	LI 4.2 Give examples of how to manage behaviour in large classes (NTS 3d).
Give regard for GESI, ICT, 21 <sup>s</sup> century skills, etc	1.3 In small groups, ask teachers to discuss acceptable social behaviour that promotes teaching and learning and share with the larger group (NTS 1c, 1d, 1g and 1p).	1.3 Discuss acceptable social behaviour that promotes teaching and learning and share with the larger class (NTS 1c, 1d, 1g and 1p).
	E.g. Obedience, discipline, punctuality, regularity, commitment, respect and hard work, etc.	E.g. Obedience, discipline, punctuality, regularity, hard work, etc.
	1.4 In small groups, ask teachers to discuss how to create a warm and friendly environment for effective teaching and learning and ask group leaders to share their findings with the larger group (NTS 3c, 3d and 3h).	1.4 In small groups, discuss how to create a warm and friendly environment for effective teaching and learning and share your findings with the larger group (NTS 3c, 3d and 3h).
	E.g. a) Teacher being friendly to the learners b) Teacher showing love, affection and empathy to the learners c) Creating classroom rules together with the learners and making	<ul> <li>E.g.</li> <li>a) Teacher being friendly to the learners</li> <li>b) Teacher showing love, affection and empathy to the learners</li> <li>c) Creating classroom rules together with the learners and making sure</li> </ul>

- sure learners obey rules and regulations
- d) Encouraging learner to feel free to approach teacher where necessary
- e) Encourage learners tolerate and cooperate with each other
- f) Teacher being GESI responsive in teaching and learning

1.5 In subject groups, ask teachers to discuss their prepared scheme of learning for the semester to find out if GESI, ICT and 21st century skills have been embedded (NTS 1d, 1f and 3g). (Extension Activity)

E.g. (Science)

- a) In a Science practical lesson, both boys and girls should be encouraged to do dissection of rodents.
- b) Both boys and girls as well as SEN learners should be encouraged to show interest in both biological and physical sciences
- 1.6 In subject groups, ask teachers to suggest ways of addressing gaps identified in learners' learning (NTS 1a, 3l and 3n).

E.g. (Science)

 a) Invite role models/resource persons to give a talk on the learners obey rules and regulations

1.5 In subject groups, discuss your prepared scheme of learning for the semester to find out if GESI, ICT and 21st century skills have been embedded (NTS 1d, 1f and 3g). (Extension Activity)

E.g. (Science)
In a Science practical lesson,
both boys and girls should be
encouraged to do dissection
of rodents.

1.6 In subject groups, suggest ways of addressing gaps identified in learners' learning (NTS 1a, 3l and 3n).

E.g. (Science)

a) Invite role models/resource persons to give a talk on

- application of scientific principles
- b) Organize trips to science fairs
- c) Organize remediation classes for learners who need them.
- 1.7 Ask teachers to discuss, in their subject groups, the teaching and learning resources they will use in their lesson presentation, providing examples (NTS 3j).
- E.g. (Science)
- g) Models
- h) Chemicals
- i) Science equipment
- j) Posters
- k) Pre-recorded videos
- YouTube videos
- m) Photographs
- n) OERs/Internet facilities
- o) Projectors
- p) Calculators
- 1.8 In subject groups, ask teachers to discuss how they will assess their learners, giving examples (NTS 3k, 3l, 3n and 3p).
- E.g. (Science)
- a) Self-assessment
- b) Peer-assessment
- c) Modelling
- d) Portfolio
- e) Project
- f) Practical activities
- g) Quizzes
- 1.9 Using think-pair-share strategy, let teachers come out with various strategies that will be used to manage unacceptable

- the application of scientific principles
- b) Organize trips to science fairs
- 1.7 Discuss in subject groups the teaching and learning resources you will use in your lesson presentation, providing examples (NTS 3j).
- E.g. (Science)
- a) Models
- b) Chemicals
- c) Science equipment
- d) Posters
- e) Pre-recorded videos
- f) YouTube videos
- 1.8 In your subject groups, discuss how you will assess your learners, giving examples (NTS 3k, 3l, 3n and 3p).
- E.g. (Science)
- a) Self-assessment
- b) Peer-assessment
- c) Modelling
- d) Portfolio
- e) Project
- 1.9 Using think-pair-share strategy, come out with various strategies that will be used to manage

behaviours in large classes (NTS 3d, 3g and 3m).

E.g. Disruption avoidance Strategies

- a) Organising classroom environment to suit the learning context, e.g. rearranging desks for groupwork
- b) Getting appropriate and adequate teaching learning resources
- c) Ensuring gender
  equity during
  teaching and
  learning. For
  example, male and
  female learners
  including SEN be
  given equal
  opportunities during
  Science practical
  lesson

**Anticipation Strategies** 

- a) Assigning roles to learners who have tendency of disturbing during teaching and learning
- b) Teachers should use hands-onactivities and task setting

Response Strategies

- a) Use of rewards such as gifts, awarding of extra marks to well behaved students or groups
- b) Use of positive reinforcement such as

unacceptable behaviours in large classes (NTS 3d, 3g and 3m).

E.g. Disruption avoidance Strategies

- a) Organising classroom environment to suit the learning context, e.g. rearranging desks for groupwork
- b) Getting appropriate and adequate teaching learning resources

Anticipation Strategies
a) Assigning roles to
learners who have
tendency of disturbing
during teaching and
learning
b) Teachers should use
hands-on-activities and
task setting

Response Strategies
Use of rewards such as gifts,
awarding of extra marks to
well behaved students or
groups

	counseling and encouragement		
Planning for teaching, learning and assessment activities for the lesson/s	2.1 In small groups ask teachers to brainstorm the meaning of learning needs and share with the larger group (NTS 1e, 2c).	2.1 In small groups, brainstorm the meaning of learning needs and share with the larger group (NTS 1e, 2c).	20 mins
making links to the secondary school curriculum	E.g. Learning need is the gap between the learner's present knowledge and skills levels and the knowledge and skills levels required to perform an activity	E.g. Learning need is the gap between the learner's present knowledge and skills levels and the knowledge and skills levels required to perform an activity	
	2.2 Still in the small groups, ask teachers to list examples of learners' learning needs they can identify in their subject area (NTS 1e, 2c).	2.2 List examples of learners' learning needs you can identify in your subject area; for example, teaching and learning of science (NTS 1e, 2c).	
	E.g. (Science)  a) Learners' inability to plot graph with coordinates obtained from pendulum experiment	E.g. (Science)  a) Learners' inability to plot graph with coordinates obtained from pendulum experiment	
	<ul> <li>b) Learners' inability to differentiate between diffusion and osmosis</li> <li>c) Learners' inability to understand the concept photosynthesis.</li> <li>d) Learners' inability to differentiate between plant cell and animal cell.</li> </ul>	b) Learners' inability to differentiate between diffusion and osmosis	
	2.3 Using think-pair-share, ask teachers to identify instruments they can design to collect data to justify or otherwise, an intervention for the problem they have	2.3 Using think-pair-share, identify instruments that can be designed to collect data to justify or otherwise, an intervention for the problem you have identified in the classroom during teaching	

identified in the classroom during teaching and learning sessions (NTS 3b, 3n). and learning sessions (NTS 3b, 3n).

E.g.

- a) Interview guide
- b) Observation guide checklist
- c) Questionnaire
- d) Analysis of marked exercises/tests/and terminal reports

E.g.

- a) Interview guide
- b) Observation guide checklist
- 2.4 Using talks for learning strategies (eg. concept cartoons), ask teachers to list the appropriate interventions to solve the problem they have identified (NTS 3e).

2.4 List the appropriate interventions to solve the problem you have identified (NTS 3e).

E,g, (Science)

- a) Problem: Learners' inability to plot graph with coordinates obtained from pendulum experiment Intervention: Remediation classes
- E,g, (Science)
- c) Problem: Learners'
  inability to plot graph
  with coordinates
  obtained from pendulum
  experiment
  Intervention: Remediation
  classes
- b) Problem: Learners' inability to differentiate between plant cell and animal cell.

Intervention: Aided research on plant cell and animal cell

- 2.5 Ask teachers to prepare a lesson plan for an intervention. This should be based on the 2010 Senior High School Syllabus (NTS 3a, 3j and 3l). (Extension Activity)
- 2.5 Prepare a lesson plan for an intervention. This should be based on the 2010 Senior High School Syllabus (NTS 3a, 3j and 3l). (Extension Activity)

An example of an outline of a lesson plan for an intervention based on the 2010 SHS Integrated Science Syllabus\*

**Learning need**: learners' inability to differentiate between plant cell and animal cell correctly.

**Intervention**: Re-teaching content

a) Topic: Cells

**b) Sub-topic**: Differences between Plant Cell and Animal Cell

## c) Objectives

By the end of the lesson, the student will be able to:

i. Describe the structure of the plant cell.

ii. Describe the structure of the animal cell.

iii. Differentiate
between the plant cell
and the animal cell.

## d) Relevant Previous Knowledge:

Learners can explain what a cell is.

## e) Introduction:

Elicit from the learners the meaning of cells using brainstorming.

Prepare the learners' mind to watch a documentary on plant cell and animal cell.

## f) Tasks/activities:

i. Let learners watch a documentary on plant cell and note salient points on the structure of the plant cell for discussion. An example of an outline of a lesson plan for an intervention based on the 2010 SHS Integrated Science Syllabus\*

**Learning need**: learners' inability to differentiate between plant cell and animal cell correctly.

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## f) Tasks/activities:

i. Let learners watch a documentary on plant cell and note salient points on the structure of the plant cell for discussion.

- ii. Show them a chart of a well labelled diagram of the structure of a plant cell for a discussion.
- iii. Let learners watch a documentary on animal cell and note salient points on the structure of the animal cell for a discussion.
- iv. Show them a chart of a well labelled diagram of the structure of Animal cell for a discussion.
- v. Using small group discussion, let the learners discuss and write the differences they have discovered between plant cell and animal cell.

Remind the learners to appoint group leaders and secretaries and let the leaders share the group's work with the larger class.

## g) Closure:

Close the lesson by asking learners to reflect on the following questions:

- a. What new things have you learnt from today's lesson?
- b. How will today's lesson help you in your daily life activities?

## h) Evaluation

- i. Draw a plant cell and animal cell and label them.
- ii. State 4 differences between plant cell and animal cell.

- ii. Show them a chart of a well labelled diagram of the structure of a plant cell for a discussion.
- iii. Let learners watch a documentary on animal cell and note salient points on the structure of the animal cell for a discussion.
- iv. Show them a chart of a well labelled diagram of the structure of Animal cell for a discussion.
  v. Using small group discussion, let the learners discuss and write the differences they have discovered between plant cell and animal cell.

Remind the learners to appoint group leaders and secretaries and let the leaders share the group's work with the larger class.

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- a. What new things have you learnt from today's lesson?
- b. How will today's lesson help you in your daily life activities?

## h) Evaluation

- i. Draw a plant cell and animal cell and label them.
- ii. State 4 differences between plant cell and animal cell.

## i) Content:

Cells are the basic units of life or the building blocks of life. Examples are plant cell and animal cell.

The differences between plant cell and animal cell include the following:

- i. Plant cell is surrounded by a rigid cell wall but animal cell does not have a cell wall.
- ii. Plant cell is larger in size but animal cell is smaller in size.
- iii. While plant cell has a large vacuole animal cell has small vacuole.
- iv. Plant cell has plastids but animal cell does not have plastids.
- v. Plant cell does not have cilia however, animal cell has cilia.
- vi. Lysosomes are very rare in plant cell but abundant in animal cell.
- vii. Plant cell does not have centrosome but animal cell has centrosome.

## j) Core competencies

- i. Leadership
- ii. Communication
- iii. Collaboration
- iv. Critical thinking
- v. Creativity and innovation

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## j) Core competencies

- i. Leadership
- ii. Communication
- iii. Collaboration
- iv. Critical thinking
- v. Creativity and innovation

	T		ı
	2.6. Ask teachers, in groups, to do a presentation on the prepared lesson plan whilst their colleagues critique it (NTS 3a). (Extension Activity)	2.6. In groups, do a presentation on the prepared lesson plan whilst your colleagues critique it (NTS 3a). (Extension Activity)	
	* Teachers will be guided to tease out the learning outcomes and the learning indicators from the sample lesson plan.	*Teachers will be guided to tease out the learning outcomes and the learning indicators from the sample lesson plan.	
3. Teaching, learning and assessment.	3.1 Ask teachers to tease out the learning outcomes and the learning indicators from the sample lesson plan and use them in a post intervention activity. (Extension Activity)	3.1 Tease out the learning outcomes and the learning indicators from the sample lesson plan and use them in a post intervention activity. (Extension Activity)	30 mins
	E.g. LO: Demonstrate sound knowledge and understanding of plant cell and animal cell.	E.g. LO: Demonstrate sound knowledge and understanding of plant cell and animal cell.	
	LI 1.1 Describe the structure of the plant cell.	LI 1.1 Describe the structure of the plant cell.	
	LI 1.2 Describe the structure of the animal cell.	LI 1.2 Describe the structure of the animal cell.	
	LI 1.3 Differentiate between the plant cell and the animal cell.		
	3.2 Ask teachers to discuss how they will collect post intervention data and share their discussion with the larger group (NTS 1e, 3n).	3.2 Discuss how you will collect post intervention data and share with the larger group data (NTS 1e, 3n).	
	E.g. Marked tests, class exercises, project works, etc.	E.g. Marked tests, class exercises, project works, etc.	

- 3.3 In plenary, ask teachers to describe how they will analyze the post intervention data and interpret it (NTS 3b).
- 3.3 Describe how you will analyze the post intervention data and interpret it (NTS 3b).
- E.g. Using tables of test scores to compare the pre and the post-intervention test scores to identify areas of progress and give conclusion and recommendations.
- E.g. Using tables of test scores to compare the post and the pre-intervention test scores to identify areas of progress and give conclusion and recommendations.
- 3.4 In groups, let teachers identify and discuss ways of overcoming challenges in teaching large class size and share with the larger group for further discussion (NTS 3d).
- 3.4 In groups, identify and discuss ways of overcoming challenges in teaching large class size and share with the larger group for further discussion (NTS 3d).
- E.g.
  a) Use of group and pair
  work in large classrooms
- E.g.
  a) Use of group and pair
  work in large classrooms
- b) Altering seating plans so that female and male learners are mixed c) Managing resources such that all learners get access to resources d) Involving learners as monitors e)Using peer teaching to improve learning
- b) Altering seating plans so that female and males are mixed
- c) Managing resources such that all learners get access to resources
- 3.5 Ask groups to present their work for feedback from the larger group
- 3.5 Present your work for feedback from the larger group

	Evaluation and view of session:  Identifying and addressing any	4.1 Ask teachers to reflect and write what they have learnt in the session (NTS 1a, 3l and 3n).	4.1 Reflect and write what you have learnt in the session (NTS 1a, 3l and 3n).	15 mins
	outstanding issues relating to the lesson/s for clarification	4.2 Ask teachers to share what they have written with the larger group.	4.2 Share what you have written with the larger group.	
<b>A</b>	Noting that teachers need to identify critical friends to observe lessons and report at next session	4.3 Remind teachers to identify a critical friend to observe them in teaching their lessons in relation to PLC Session 8 and provide feedback at the next PLC session.6	4.3 Identify a critical friend to observe you in teaching your lessons in relation to PLC Session 8 and provide feedback at the next PLC Session.	
		4.4 Remind teachers to read Session 9 from the PLC Handbook in preparation for the next session.	4.4 Remember to read Session 9 from the PLC Handbook in preparation for the next session.	

PLC Session 9: Teaching and Learning			
	Guidance notes on Guidance Notes on Teacher		
	Leading the session. What	Activity during the PLC	session
	the PLC Coordinator will	Session. What teachers will	
	have to say during each	do during each stage of the	
	stage of the session	session	
1. Review of	1.1 Ask a teacher who	1.1 Share your findings of	25 mins
previous session	observed a lesson of a	the lesson you observed	
and introduction	critical friend to share their	with your critical friend	
to new session	findings with the group.	after the last PLC session.	
NB The guidance	1.2 Ask a teacher to read	1.2 Ask a teacher to read	
for PLC	standard 3e, 3f, 3g, 3h, 3i,	standard 3e, 3f, 3g, 3h, 3i, 3j,	
Coordinator	3j, 3k and 3l under	3k and 3l under <i>Professional</i>	
should identify,	Professional Practice of the	Practice of the NTS and the	
address, and	NTS and the learning	learning outcomes (LOs) and	
provide	outcomes (LOs) and	learning indicators (LIs) of	
explanations for	learning indicators (LIs) of	the session to set the stage	
any areas where	the session to set the stage	for the session.	
-	for the session.	for the session.	
teachers might	for the session.		
require	LO 1. Dovolon a variety of	LO 1. Davidon a variaty of	
clarification on	LO 1: Develop a variety of	LO 1: Develop a variety of	
an aspect of the	instructional strategies	instructional strategies that	
lesson.	that encourage learners'	encourage learners'	
ND DIC	participation and critical	participation and critical	
NB PLC Coordinator	thinking (NTS 3e).	thinking (NTS 3e).	
should ask	LI 1.1 Mention at least	III 1 1 Mantion at least three	
		LI 1.1 Mention at least three	
teachers to plan for their	three instructional	instructional strategies that	
101 4.10	strategies that encourage	encourage learners'	
teaching as they	learners' participation in class.	participation in class.	
go through the	Class.		
PLC session	LI 1.2 Mention at least	LI 1.2 Mention at least three	
	three instructional		
		instructional strategies that	
	strategies that encourage	encourage learners' critical	
	learners' critical thinking.	thinking.	
	LO 2: Employ Gender	LO 2: Employ Gender	
	Equality and Social	<b>Equality and Social Inclusive</b>	
	Inclusive (GESI) responsive	(GESI) responsive activities	
	activities during teaching	during teaching and learning	
	and learning (NTS 3f).	(NTS 3f).	
	LI 2.1 State at least four	LI 2.1 State at least four	
	measures a teacher can	measures a teacher can	
		adopt to be GESI responsive.	

adopt to be GESI responsive.

LI 2.2 Identify and mention at least three categories of learners that require GESI responsive support approaches in teaching and learning the most.

LO 3: Employ instructional strategies appropriate for mixed ability, multilingual, and multi-age classes of learners (NTS 3g).

LI 3.1 State at least three instructional strategies that support the teaching of learners from diverse backgrounds.

LI 3.2 Identify at least four teaching and learning resources that can be used in teaching learners from different ability groups.

LO 4: Discuss meaningful tasks that encourage learner collaboration and lead to purposeful learning (NTS 3h).

LI 4.1 List at least four classroom activities that will encourage learners to collaborate during teaching and learning.

LI 4.2 List at least three classroom activities that will lead to purposeful learning.

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LI 4.1 List at least four classroom activities that will encourage learners to collaborate during teaching and learning.

LI 4.2 List at least three classroom activities that will lead to purposeful learning.

- LO 5: Explain concepts clearly using examples familiar to learners.
- LI 5.1 Mention at least three strategies teachers can adopt to explain key concepts in their lessons (NTS 3i).
- LI 5.2 Discuss at least two strategies teachers can adopt to explain key concepts in their lessons.
- LO 6: Discuss the production and uses of a variety of teaching and learning resources that enhance learning, including Information and Communications
  Technology (ICT) tools (NTS 3j).
- LI 6.1 List and discuss at least three ways in which teaching and learning resources can be produced using local resources.
- LI 6.2 State at least three ways in which teaching and learning resources can be produced using ICT.
- 1.3 Ask teachers to share with the group, various teaching strategies they have been using to deliver their lessons (NTS 3e).

E.g.

- a) Role-play
- b) Demonstrations
- c) Group discussions
- d) Project work

- LO 5: Explain concepts clearly using examples familiar to learners.
- LI 5.1 Mention at least three strategies teachers can adopt to explain key concepts in the lessons (NTS 3i).
- LI 5.2 Discuss at least two strategies teachers can adopt to explain key concepts in their lessons.
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- LI 6.1 List and discuss at least three ways in which teaching and learning resources can be produced using local resources.
- LI 6.2 State at least three ways in which teaching and learning resources can be produced using ICT.
- 1.3 Share with the group, various teaching strategies you have been using to deliver your lessons (NTS 3e).

- a) Role-play
- b) Demonstrations
- c) Group discussions, etc.

- e) Flipped classroom, etc.
- 1.4. Lead teachers to discuss at least four teaching strategies that encourage learners' critical thinking and participation (NTS 3e, 3g).

1.4. Discuss at least four teaching strategies that encourage learners' critical thinking and participation (NTS 3e, 3g).

## E.g.

- a) Whole-class dialogue
- b) Questioning/probing
- c) Group/peer work
- d) Demonstration
- e) Project/enquiry base learning
- f) Story-telling, etc.
- 1.5 Ask teachers to state at least four measures that they can adopt to be GESI responsive (NTS 3f).

## E.g.

- a) Classroom arrangement
- b) Even distribution of questions
- c) Provide learning aids appropriate to learners' needs (hearing aids, braille, etc.)
- d) Differentiated teaching, etc.
- 1.6 Ask teachers to identify and mention at least three categories of learners that require GESI responsive support approaches in teaching and learning the most (NTS 3g).

## E.g.

- a) Hearing impaired
- b) Visually impaired

## E.g.

- a) Whole-class dialogue
- b) Questioning/probing
- c) Group/peer work, etc.
- 1.5. State at least four measures that you can adopt to be GESI responsive (NTS 3f).

#### E.g.

- a) Classroom arrangement
- b) Even distribution of questions, etc.

1.6 Identify and mention at least three categories of learners that require GESI responsive support approaches in teaching and learning the most (NTS 3g).

- a) Hearing impaired
- b) Visually impaired, etc.

- c) Learners with cerebral palsy
- d) Other vulnerable groups, etc.
- 1.7 Ask teachers to state at least four instructional strategies that support the teaching of learners from diverse backgrounds (NTS 3e, 3g).

1.7 State at least four instructional strategies that support the teaching of learners from diverse backgrounds (NTS 3e, 3g).

#### E.g.

Organize the classroom to support multi-grade learning through:

- a) Seating arrangement
- b) Same or mixed grade groups
- c) Individual self-directed work
- d) Differentiated teaching
- e) The use of diagrams, charts and other displays, etc.
- 1.8 Ask teachers to identify at least four teaching and learning resources that can be used in teaching learners from different ability groups (NTS 3i).

#### E.g.

- a) Audio-visual material
- b) Posters
- c) Videos
- d) Braille
- e) Projector
- f) Flash cards, etc.
- 1.9 Ask teachers to identify teaching and learning resources that will further enhance lesson delivery in the classroom (NTS 3i).

#### E.g.

Organize the classroom to support multi-grade learning through:

- a) Seating arrangement
- b) Same or mixed grade groups
- c) Individual self-directed work, etc.
- 1.8 Identify at least four teaching and learning resources that can be used in teaching learners from different ability groups (NTS 3i).

- a) Audio-visual material
- b) Braille
- c) Videos, etc.
- 1.9 Identify teaching and learning resources that will further enhance lessons delivery in the classroom (NTS 3i).

F	a
ᆫ	ч

- a) Simple story books
- b) Charts
- c) Bottle tops
- d) Stones
- e) Pens
- f) Sticks
- g) Textbooks
- h) Clay letters and numbers
- i) Displays
- j) ICT tools computers, scanners, projectors, phones, etc.
- 1.10 Ask teachers to list at least four classroom activities that will encourage learners to collaborate during teaching and learning (NTS 3h).

#### E.g.

- a) Peer learning/teaching
- b) Talk and debate
- Assigning leadership roles to females and males equally
- d) Skillful intervention during learning, etc.
- 1.11 Ask teachers to list at least three classroom activities that will lead to purposeful learning (NTS 3h).

#### E.g.

- a) Mixed ability group tasks
- b) Demonstration
- c) Role-play
- d) Story-telling
- e) Differentiated teaching, etc.

#### E.g.

- a) Simple story books
- b) Charts
- c) Bottle tops
- d) Stones
- e) Pens, etc.

1.10 List at least four classroom activities that will encourage learners to collaborate during teaching and learning (NTS 3h).

#### E.g.

- a) Peer learning/teaching
- b) Talk and debate, etc.

1.11 List at least three classroom activities that will lead to purposeful learning (NTS 3h).

- a) Mixed ability grouping
- b) Demonstration, etc.

1.12 Ask teachers to mention at least three strategies they can adopt or adapt to explain key concepts in their lessons (NTS 3i).

1.12 Mention at least three strategies you can adopt or adapt to explain key concepts in your lessons (NTS 3i).

E.g.

- a) Imaginative use of drawings, diagrams, charts, etc.
- b) Demonstrations
- c) Use of ICT tools
- d) Analogy, etc.

1.13 Ask teachers to discuss at least two key strategies they can use to explain key concepts in their lessons (NTS 3i).

E.g.

Using diagrams, drawing, demonstration, and other teaching and learning resources to explain key concepts in a lesson.

1.14 Ask teachers to list and discuss at least three ways in which teaching and learning resources can be produced using local resources (NTS 3j).

E.g.

- a) Draw on cardboards
- b) Create pictures, charts, flash cards, etc.
- c) Use stones, sticks and bottle tops
- d) Mold clay letters and numbers, etc.

E.g.

- a) Imaginative use of drawings, diagrams, charts, etc.
- b) Demonstrations, etc.

1.13 Discuss at least two key strategies you can use to explain key concepts in your lessons (NTS 3i).

E.g.

Using diagrams, drawing, demonstration, and other teaching and learning resources to explain key concepts in a lesson.

1.14 List and discuss at least three ways in which teaching and learning resources can be produced using local resources (NTS 3j).

- a) Draw on cardboards
- b) Create pictures, charts, flash cards, etc.

		T
	1.15 Ask teachers to state at least three ways in	1.15 State at least three ways in which teaching and
	which teaching and	learning resources can be
	learning resources can be	produced using ICT tools
	produced using ICT tools	(NTS 3j).
	(NTS 3j).	(
	(1413 3)).	
	E.g.	E.g.
	Use computers to produce:	Use computers to produce:
	a) Charts	a) Charts
	b) Maps	b) Maps, etc.
	c) Images	
	d) Diagrams	
	e) Videos	
	f) PowerPoint	
	presentations, etc.	
Give regard for	1.15 Ask teachers to	1.15 Identify possible
possible	identify possible	misconceptions and
misconceptions	misconceptions and	stereotypes in teaching and
and stereotypes,	stereotypes in teaching	learning.
GESI, ICT, 21st	and learning.	
century skills,	_	
etc.	E. <i>g</i> .	E.g.
	a) Female teachers can	a) Female teachers can
	teach lower-level	teach lower-level classes
	classes better than	better than male
	male teachers	teachers
	b) Male teachers	b) Male teachers
	understand lesson	understand lesson
	delivery better than	delivery better than
	female teachers	female teachers
	c) Some female teachers	c) Some female teachers
	feel that having a	feel that having a special
	special needs child in	needs child in their class
	their class may lead to	may lead to them giving
	them giving birth to	birth to such children
	such children	birtir to such crimaren
	d) Some think ICT is	
	meant for males and	
	not for females	
	e) ICT tools are difficult to	
	1 -	
	apply in teaching and	
	learning, etc.	
	1.16 Discuss with teachers,	1.16 Discuss possible ways
	possible ways to mitigate	to mitigate these
	these misconceptions in	misconceptions in teaching
	chese imscorrecptions in	mosomocptions in teaching

teaching and learning in their various subjects.

E.g.

- a) Teaching is a profession which requires training irrespective of gender
- b) Invite female and male professionals and experts who have overcome some of these misconceptions to deliver a talk on them
- c) Engage the services of professional psychologists and counsellors to counsel female teachers who may harbour the fear of having children with disability because they teach such children
- d) Invite female ICT
  experts to have a
  discussion or
  engagement with
  teachers to clear such
  ICT related
  misconceptions
- e) Organize orientation programmes for teachers on the use of ICT tools in lesson delivery, etc.
- 1.17 In mixed gender groupings (where possible), ask teachers to list at least three 21<sup>st</sup> century skills related to teaching and learning.

E.q.

- a) Communication skills
- b) Collaboration skills

and learning in your various subjects.

E.g.

- a) Teaching is a profession which requires training irrespective of gender
- b) Invite female and male professionals and experts who have overcome some of these misconceptions to deliver a talk on them
- c) Engage the services of professional psychologists and counsellors to counsel female teachers who may harbour the fear of having children with disability because they teach such children, etc.

1.17 In mixed gender groupings (where possible), list at least three 21<sup>st</sup> century skills related to teaching and learning.

- a) Communication skills
- b) Collaboration skills

- c) Observation and enquiry skills
- d) Digital literacy
- e) Creativity skills
- f) Personal development skills
- g) Presentation skills, etc.

1.18 Ask teachers to discuss their list of 21<sup>st</sup> century skills (from 1.18) and how they can support teaching and learning.

1.18 Discuss your list of 21<sup>st</sup> century skills (from 1.18) and how they can support teaching and learning.

c) Observation and enquiry

skills, etc.

E.q.

#### a) Communication skills:

Group discussion, role-play, presentation, debate, etc.

b) Collaboration skills:

Group discussion, project/research, role-play, hands-on activities, drama, etc.

c) Observation and enquiry skills:

Group discussion, project/research, role-play, hands-on activities, etc.

1.19 Ask teachers to identify ways of incorporating ICT in their lessons.

E.g.

Employ ICT tools and applications in teaching and learning:

- a) Surf Open Educational Resources (OERs)
- b) Use google classroom

E.g.

#### a) Communication skills:

Group discussion, role-play, presentation, debate, etc.

b) Collaboration skills:

Group discussion, project/research, role-play, hands-on activities, drama, etc.

1.19 Identify ways of incorporating ICT in your lessons.

E.g.

Employ ICT tools and applications in teaching and learning:

- a) Surf Open Educational Resources (OERs)
- b) Use google classroom

	c) Use of Microsoft Office Suite (Word, PowerPoint, Excel, etc.) d) Use of online search engines (Mozila firefox, google chrome, microsoft edge, etc.) e) Use of smartphones projectors, laptops, scanners, calculators, etc. f) Use of other applications such as plagiarism checking software, tools for checking grammar errors online, etc.	c) Use of Microsoft Office Suite (Word, PowerPoint, Excel, etc.) d) Use of online search engines (Mozila firefox, google chrome, microsoft edge, etc.), etc.	
	1.20 Ask teachers to discuss possible activities they would adopt to develop the following 21st century skills in their learners.	1.20 Discuss possible activities you would adopt to develop the following 21 <sup>st</sup> century skills in your learners.	
	E.g. Communication skills, collaboration, observation and enquiry skills, digital literacy, creativity, personal development skills, etc., can be developed in learners using the following activities; a) group discussion b) project/research c) role-play d) hands-on activities e) extended learning f) presentation g) drama h) field trips i) debates j) quizzes, etc.	E.g. Communication skills, collaboration, observation and enquiry skills, digital literacy, creativity, personal development skills, etc., can be developed in learners using the following activities; a) group discussion b) project/research c) role-play d) hands-on activities, etc.	
2. Planning for teaching, learning and	2.1 Ask teachers to discuss samples of their lesson plans in their various	2.1 Discuss samples of your lesson plans in your various subject areas and link them	20 mins
icariiiig ailu	pians in their various	Subject areas and fills thefill	

assessment
activities for the
lesson/s making
links to the
secondary
school
curriculum

subject areas and link them to the NTS, particularly to teaching and learning (NTS 3e, 3f, 3g, 3h, 3i, 3j, 3k and 3l).

An example of an outline of a Lesson Plan based on the 2010 Senior High School Syllabus in Geography\*

- a) **Topic**: Rocks
- b) **Sub-topic:** Types of rocks
- c) **Objectives:** By the end of the lesson, the learner will be able to:
  - i. Explain the term "rock"
  - ii. State three types of rocks
  - iii. Give at least two examples each of the types of rocks
- d) **RPK:** learners have seen rocks, stones and sand in their environment
- e) Introduction:

Introduce the lesson by giving samples of rocks, stones and sand for learners to observe and come out with their differences and similarities.

#### f) Task/Activities:

 With the aid of pictures, drawings of rocks on cardboard, etc., quide learners to to the NTS, particularly to teaching and learning (NTS 3e, 3f, 3g, 3h, 3i, 3j, 3k and 3l).

An example of an outline of a Lesson Plan based on the 2010 Senior High School Syllabus in Geography\*

- a) Topic: Rocks
- b) **Sub-topic:** Types of rocks
- c) **Objectives:** By the end of the lesson, learners will be able to:
  - Explain the term rock
  - ii. State the types of rocks
  - iii. Give at least two examples each of the types of rocks
- a) RPK: learners have seen rocks, stones and sand in their environment
- e) Introduction:
  Introduce the lesson by
  giving samples of rocks,
  stones and sand for learners
  to observe and come out
  with their differences and
  similarities.

#### f) Task/Activities:

 With the aid of pictures, drawings of rocks on cardboard, etc., quide learners to

- brainstorm the meaning of rock
- ii. Using samples of the sand, stones, and rocks, guide learners to identify their differences and similarities and come out with the types of rocks
- iii. Guide learners
  group the rocks
  according to their
  types i.e. igneous
  rocks (basalt,
  granite, gabbro),
  sedimentary rocks
  (chalk, shale,
  sandstone) and
  metamorphic rocks
  (slate, marble,
  gneiss)

#### g) Core Points:

Meaning of rock:
Rocks are aggregates of
a solid mineral matter
that constitute a
significant part of the
earth crust or a mass of
a stone projecting out
of the ground
Types of rocks and their
examples:

- i. Igneous rocks e.g. basalt, granite, gabbro,
- ii. Sedimentary rocks e.g. chalk, shale, sandstone
- iii. Metamorphic rocks e.g. slate, marble, gneiss

### h) Core Competencies:

identification skills, imagination skills,

- brainstorm the meaning of rock
- ii. Using samples of the sand, stones, and rocks, guide learners to identify their differences and similarities and come out with the types of rocks
- iii. Guide learners
  group the rocks
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  types i.e. igneous
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#### q) Core Points:

Meaning of rock:
Rocks are aggregates of a solid mineral matter that constitute a significant part of the earth crust or a mass of a stone projecting out of the ground Types of rocks and their examples:

- i. Igneous rocks e.g. basalt, granite, gabbro,
- ii. Sedimentary rockse.g. chalk, shale,sandstone
- iii. Metamorphic rocks e.g. slate, marble, gneiss

#### h) Core Competencies:

identification skills, imagination skills,

	observation skills	observation skills	
	observation skills,	observation skills,	
	collaboration skills,	collaboration skills,	
	communication skills	communication skills	
	i) Closure:	i) Closure:	
	Review the lesson with	Review the lesson with	
	learners and allow them to	learners and allow them to	
	ask for clarification if any	ask for clarification if any	
	i) Fundamentian	j <b>) Evaluation:</b> i. Describe what rocks	
	j) Evaluation:		
	i. Describe what	are.	
	rocks are.	ii. Mention at least two	
	ii. Mention at least	types of rocks.	
	two types of rocks.  iii. State at least two	iii. State at least two	
		examples each of the	
	examples each of	various types of	
	the various types of	rocks.	
	rocks.	I) Barrada	
		k) Remarks:	
	k) Remarks:	<u> </u>	
	<b>*-</b>	*Teachers would be guided	
	*Teachers would be guided	to tease out the learning	
	to tease out the learning	outcomes and learning	
	outcomes and learning	indicators from the lesson.	
	indicators from the lesson.	0.4.1	20 :
3. Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in your	30 mins
learning and	gaps in their sample lesson	sample lesson plans and	
assessment	plans and discuss possible	possible ways of addressing	
> Reading and	ways of addressing same.	same.	
discussion of	5.	<b>.</b>	
the teaching	E.g.	E.g.	
and learning	a) <b>Possible gaps:</b> Lack of	a) <b>Possible gaps:</b> Lack of	
activities	differentiation for	differentiation for learner	
noting,	learner diversity	diversity	
addressing,	Possible solution: Use		
and	different teaching		
explaining	methods and resources		
areas where	to cater for different		
teachers may	learner needs, etc.	h) Besible selection (1)	
require	b) Possible gaps:	b) Possible solution: Use	
clarification	Inadequate real-life	different teaching	
> Noting	resources	methods and resources	
opportunitie	i Danith a Lit	to cater for different	
s for making	i. Possible solution:	learner needs, etc.	
<i>explicit</i> links	Use computer		
to the	simulation/pre-		
Secondary			

	School	recorded videos /	
		recorded videos/	
_	Curriculum	YouTube videos	
	Noting	2 2 4 -1 1 1 - 1 - 1	2 2 4 -1 1 1 - 1 1
	opportunitie	3.2 Ask teachers to tease	3.2 Ask teachers to tease out
	s for	out the learning	the learning outcomes
	integrating:	outcomes and learning	and learning indicators
	GESI	indicators from the	from the sample lesson
	responsiven	sample lesson plan and	plan and compare their
	ess and ICT	compare their work.	work.
	and 21st C		
	skills	E.g.	E.g.
	Reading,	LO: Demonstrate	LO: Demonstrate knowledge
	discussion,	knowledge and	and understanding of the
	and	understanding of the	various types of rocks.
	identificatio	various types of rocks.	
	n of		
	continuous	LI 1.1 Explain the term	LI 1.1 Explain the term rock'.
	assessment	'rock'.	
	opportunitie		
	s in the	LI 1.2 Mention at least two	LI 1.2 Mention at least two
	lesson. Each	types of rocks.	types of rocks.
	lesson	-	
	should	LI 1.3 Give three examples	
	include at	of igneous rocks.	
	least two	, ,	
	opportunitie	3.3 Ask teachers to	3.3 Ask teachers to suggest
	s to use	suggest alternative ways	alternative ways of
	continuous	of delivering the sample	delivering the sample lesson.
	assessment	lesson.	
	to support	E.g.	E.g.
	learner	a) Field trips	a) Small group work
	teacher	b) Small group work	b) Field trips
	learning	c) Learner presentations	c) Learner presentations
>	Resources:	d) Use of YouTube/pre-	d) Use of YouTube/pre-
0	Links to the	recorded videos	recorded videos, etc.
	existing PLC	e) Flipped classroom	
	Themes, for	f) Individual tasks, etc.	
	example,	,,	
	action	3.4 Ask teachers to review	3.4 Review your sample
	research,	their sample lesson plans	lesson plans to identify
	questioning	to identify activities that	activities that promote GESI
	and to	promote GESI	responsiveness.
	other	responsiveness.	
	external		
	reference.	E.g.	E.g.
0	Material:	a) Plan for differences in	a) Plan for differences in
	literature,	learner needs	learner needs
	interature,	ieurner neeus	ובעווובו וופבעט

- on web, YouTube, physical resources, power point; how they should be used.
- Considerati on needs to be given to local availability and guidance on any power point presentatio ns, TLM or other resources which need to be developed to support learning
- b) Use individual tasks reflecting different learning styles
- c) Use mixed gender groups to encourage collaboration between male and female learners
- d) Make reasonable adjustment for SEN learners, etc.
- 3.5 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices i.e. assessment *for* learning and assessment as learning. *E.g.*
- a) Use assessment to diagnose learners' needs (for)
  - i. Use assessment to review learners' progress (for)
- ii. Use assessment to give guidance about opportunities through feedback (for)
- iii. Encourage selfassessment (as), etc.
- 3.6 In groups, ask teachers to suggest other assessment methods that could be used in the sample lesson.

E.g.

- a) Self-assessment
- b) Peer-assessment
- c) Portfolio
- d) Observation
- e) Quizzes
- f) Tests
- g) Assignment

- b) Use individual tasks reflecting different learning styles
- c) Use mixed gender groups to encourage collaboration between male and female learners, etc.
- 3.5 Discuss how the session is linked to the use of formative assessment tools and practices i.e. assessment *for learning* and assessment as learning.

E.g.

- a) Use assessment to diagnose learners' needs (for)
- b) Use assessment to review learners' progress (for)
- c) Encourage Selfassessment (as), etc.

3.6 In groups suggest other assessment methods that could be used in the sample lesson.

- a) Self-assessment
- b) Peer-assessment
- c) Quizzes
- d) Test
- e) Project work, etc.

		T	I	T
		h) Project work, etc.		
		3.7 Guide teachers to list resources and discuss how the lesson can make use of these to support relevant activities (NTS 3j). E.g. a) Photographs b) YouTube/Pre-recorded videos. c) Projectors d) OERs/Internet facilities e) Smartphones f) Textbooks, newspapers, magazines, handouts, worksheets, etc.	3.7 List resources and discuss how the lesson can make use of these to support relevant activities (NTS 3j). E.g. a) Photographs b) YouTube/Pre-recorded videos. c) Projectors d) OERs/Internet facilities, etc.	
		3.8 Ask a teacher to model a teaching activity in the sample lesson plan.  (Extension Activity)	3.8 Model a teaching activity in the sample lesson plan (Extension Activity)	
4.	Evaluation	4.1 Ask teachers to reflect	4.1 Reflect and write what	15 mins
	d review of	and write what they have	you have learnt in the	
se	ssion:	learnt in the session (NTS	session (NTS 3e, 3f, 3g, 3h,	
		3e, 3f, 3g, 3h, 3i, 3g and	3i, 3g and 3k).	
>	Identifying	3k).		
	and	4.2 Ask them to share	4.2 Share what you have	
	addressing	what they have written	written with the larger	
	any	with the larger group.	group.	
	outstanding			
	issues	4.3 Remind teachers to	4.3 Identify a critical friend	
	relating to	identify a critical friend to	to observe you in teaching	
	the lesson/s	observe them in teaching	your lessons in relation to	
	for	their lessons in relation to	PLC Session 9 and provide	
	clarification	PLC Session 9 and provide	feedback at the next PLC	
>	Noting that	feedback at the next PLC	session.	
	teachers	session.		
	need to	4.4 Remind teachers to	4.4 Remember to read	
	identify	read Session 10 from the	Session 10 from the PLC	
	critical	PLC Handbook in	Handbook in preparation for	
	friends to	preparation for the next	the next session.	
	observe	session.		
	lessons and			
	report at			
	next session			

PLC Session for Topic 10: Assessment			
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to new session	1.1Ask a teacher who observed a critical friend teach, to share their findings with the group.	1.1 Share the findings of the lesson you observed your critical friend teach after the last PLC session.	25 mins
NB: The guidance for PLC Coordinator should identify, address, and provide explanations for any areas where teachers might require	1.2 Introduce Session 10 and ask a teacher to read NTS 3k, 3l, 3m, 3n, 3o and 3p the under <i>Professional Practice</i> of the NTS and the learning outcomes (LOs) and learning indicators (LIs) of the session to set the stage for the session.	1.2 Read NTS 3k, 3l, 3m, 3n, 3o and 3p the under <i>Professional Practice</i> of the NTS and the learning outcomes (LOs) and learning indicators (LIs) of the session to set the stage for the session.	
clarification on an aspect of the lesson.  NB PLC	LO 1: Show an understanding of assessment and how teachers can assess learners inside and outside the classroom (NTS 3k).	LO 1: Show an understanding of assessment and how teachers can assess learners inside and outside the classroom (NTS 3k).	
Coordinator should ask teachers to plan for their teaching	LI 1.1 Briefly state the meaning of assessment.	LI.1.1 Briefly state the meaning of assessment.	
as they go through the PLC session	LI 1.2 State at least three characteristics of continuous assessment. LO 2: Demonstrate understanding of the modes of assessment (assessment for learning, assessment as learning, and assessment of learning) (NTS 3k, 3l, 3m, 3n, 3o and 3p).	LI 1.2 State at least three characteristics of continuous assessment. LO 2: Demonstrate understanding of the modes of assessment (assessment for, assessment as and assessment of learning) (NTS 3k, 3l, 3m, 3n, 3o and 3p).	
	LI 2.1 State how assessment modes are incorporated in teaching and learning. LI 2.2 Describe how the assessment of learners' academic attainment relates to the NTS (NTS 3k, 3l, 3m, 3n, 3o and 3p). LI 2.3 Discuss ways in which continuous assessment can be improved.	LI 2.1 State how assessment modes are incorporated in teaching and learning. LI 2.2 Describe how the assessment of learners' academic attainment relates to the NTS (NTS 3k, 3l, 3m, 3n, 3o and 3p). LI 2.3 Discuss ways in which continuous assessment can be improved.	

1.3 Ask teachers to brainstorm the meaning of assessment.

Assessment is a variety of procedures used to obtain information about learner performance. It involves the measurement and evaluation of learners/learners' traits', potential and actual performance. (Linn & Miller, 2005).

1.4 Through the use of thinkpair-share, guide teachers to state the characteristics of continuous assessment (NTS 3k).

E.g. It is cumulative, comprehensive, diagnostic, formative, guidance-oriented, systematic, etc.

1.5 Ask teachers to discuss in groups how assessment modes are incorporated in teaching and learning (NTS 3k).

E.g.

Assessment "for" learning is the process of seeking and interpreting evidence for use by learners and teachers to decide where the learners are in their learning Assessment "as" learning is where learners are able to learn by themselves and become aware of how they learn. They reflect on their work on a regular basis usually through self and peer assessment and decide what their next learning will be "of" learning Assessment occurs when teachers use evidence of learners' learning to make judgement learners' achievements against goals and standards (Deluca et al., 2019).

1.3 Brainstorm the meaning of assessment.

Assessment is a variety of procedures used to obtain information about learner performance. It involves the measurement and evaluation of learners/learners' traits', potential and actual performance. (Linn & Miller, 2005)

1.4 Think-pair-share the characteristics of continuous assessment (NTS 3k).

E.g. It is cumulative, comprehensive, diagnostic, etc.

1.5 Discuss in groups how assessment modes are incorporated in teaching and learning (NTS 3k).

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Assessment "for" learning is the process of seeking and interpreting evidence for use by learners and teachers to decide where the learners are in their learning Assessment "as" learning is

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1.6 In mixed groups, explain ways in which continuous assessment could be improved (NTS 3b, 3h, 3k, 3l and 3n).  Continuous assessment can be improved through:  a) in-service training on how to keep records b) group assessment tasks to reduce workload resulting from large class sizes c) organizing workshops for teachers on test administration d) regular checks on assessment for learning, assessment as learning and assessment of learning in their various classrooms. E.g.  a) Class exercise to check understanding (for) b) Asking learners to reflect on their work and indicate the
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b) Asking learners to reflect on their work reflect on their work and indicate the and indicate the progress they have
reflect on their work and indicate the and indicate the progress they have
and indicate the progress they have
progress they have made (as)
made (as) c) Giving a test and
c) Giving a test and recording the marks as
recording the marks part of assessment for
as part of assessment West African Senior
for West African School Certificate
Senior School (WASSCE) (of)
Certificate (WASSCE)
(of)
d) Question and answer
session to identify
learner needs (for),
etc.
Give regard for 1.8 Ask teachers to state the 1.8 State the misconceptions
possible         misconceptions surrounding         surrounding the different types
misconceptions the different types of of classroom assessments (NTS
related to GESI, classroom assessments (NTS 3m).
3m).

## ICT, 21<sup>st</sup> century skills, etc.

#### E.g.

- a) Oral assessment calls for open response
- b) Boys perform better than girls in classroom assessment
- c) Multiple-choice type test is easy to construct
- d) Assessing learners always means testing them
- e) Only teachers can assess learners
- f) Assessment always results in learners obtaining marks or grades, etc.
- 1.9 Discuss with teachers, possible ways to mitigate these misconceptions and stereotypes in assessment (NTS 3m).

#### E.g.

- a) Organise orientation to sensitise teachers on the various assessment mode
- b) Ask teachers to construct multiple-choice test items
- c) Provide research data on tests where females have done better than males, etc.
- 1.10 Discuss with teachers what they do to ensure equal participation of male and female learners in classroom assessment (NTS 3e).

#### E.g.

- a) Provide opportunities for self-assessment
- b) Distribute questions in the classroom fairly
- c) Make adjustment in assessments for SEN

#### E.g.

- a) Oral assessment calls for open response
- b) Boys perform better than girls in classroom assessment
- c) Multiple-Choice type test is easy to construct, etc.

1.9 Discuss possible ways to mitigate these misconceptions and stereotypes in assessment (NTS 3m).

#### E.g.

- a) Organise orientation to sensitise teachers on the various assessment modes
- b) Ask teachers to construct multiple test items
- 1.10 Discuss what to do to ensure equal participation of male and female learners in classroom assessment (NTS 3e).

- a) Provide opportunities for self-assessment
- b) Distribute questions in the classroom fairly, etc.

learners such as using bigger font sizes and allowing more time for completion of tasks, etc.

1.11 Ask teachers to identify ways of incorporating ICT in their lesson (NTS 3j).

1.11 Identify ways of incorporating ICT in lessons (NTS 3j).

E.g.

- a) Use Open
  Educational
  Resources (OERs) and
  other Internet
  sources for
  information
- b) Use PowerPoint for presentation
- c) Use of Excel spreadsheet for teaching graphing, etc.
- 1.12 Ask teachers to discuss possible activities they would adopt to develop the 21<sup>st</sup> century skills in learners through assessment.

E.g. :

- a) **Research skills**E.g. Google search,
  group work, etc.
- b) Critical thinking and problem solving
  E.g. enquiry, project, etc.
- Innovation
  E.g. role-play,
  dramatization, etc.

c) Creativity and

d) Communication and collaboration

E.g. group discussions, debates, etc.

E.g.

- a) Use Open Educational Resources (OERs) and other Internet sources for information
- b) Use PowerPoint for presentation, etc.

1.12 Discuss possible activities they would adopt to develop the 21<sup>st</sup> century skills in learners through assessment.

- a) Research skills
  E.g. Google search,
  group work etc.
- b) Critical thinking and problem Solving
  E.g. enquiry, project, etc.
- c) Creativity and Innovation E.g. role-play, dramatization, etc.
- d) Communication and collaboration
  E.g. group discussions, debates, etc.

	1	,	
	e) Personal development and leadership E.g. presentations, group work, etc.  f) Digital literacy E.g. use of mobile phones, computers, be IT compliant and use it to work with others in teaching and learning, etc.		
2. Planning for teaching, learning and assessment activities for the lesson/s making Links to the secondary school	2.1 Ask teachers to discuss samples of their lesson plans based on the SHS 2010 syllabuses in their respective subjects and link them to the NTS (NTS 3a, 3e, 3g and 3j).	2.1 Discuss samples of lesson plans based on the SHS 2010 syllabuses in respective subjects and link them to the NTS (NTS 3a, 3e, 3g and 3j).	20 mins
secondary school curriculum	An example of an outline for teaching simultaneous linear equations from the SHS 2010 Mathematics Syllabus*  a) Topic: Simultaneous Linear Equations  b) Sub-topic: Graphical Method for solving Linear Equations in two variables  c) Objectives: Learners will be able to:     i. Plot points for given linear equation ii. Draw graphs for given linear equation iii. Determine the point of intersection as the solution for two given linear equations.  d) Relevant previous knowledge: Learners can plot points and draw straight lines on a	An example of an outline for teaching simultaneous linear equations from the SHS 2010 Mathematics Syllabus*  a) Topic: Simultaneous Linear Equations  b) Sub-topic: Graphical Method for solving Linear Equations in two variables  c) Objectives: Learners will be able to: i. Plot points for given linear equations ii. Draw graphs for given linear equation iii. Determine the point of intersection as the solution for two given linear equations.  d) Relevant previous knowledge: Learners can plot points and draw straight lines on a	
	graph.	graph.	

e) Introduction: Ask
learners to come to the
board to plot given
points on a graph
(Ensure males and
females including SEN
learners)

#### f) Tasks/activities:

- Guide learners to plot points for given linear equations
- ii. In pairs, let learners draw graphs for given linear equations. Move round the tables to observe the learners' activities and provide support where necessary
- iii. Guide learners to determine the point of intersection as the solution set for the two given linear equations
- iv. Lead learners to brainstorm the application of the concept in everyday life.

#### g) Core Points:

- i. Two equations are said to be simultaneous equations in x and y if there exist a set of values for x and y which can satisfy the two equations at the same time
- ii. The point of intersection is where the two lines meet and that gives the solution set.

#### *h)* Core Competences:

i. Collaboration

e) Introduction: Ask
learners to come to the
board to plot given
points on a graph
(Ensure males and
females including SEN
learners)

#### f) Tasks/activities:

- i. Guide learners to plot points for given linear equations.
- ii. In pairs, let learners draw graphs for given linear equations. Move round the tables to observe the learners' activities and provide support where necessary
- iii. Guide learners to determine the point of intersection as the solution set for the two given linear equations
- iv. Lead learners to brainstorm the application of the concept in everyday life.

#### *q)* Core Points:

- i. Two equations are said to be simultaneous equations in x and y if there exist a values for x and y which can satisfy the two equations at the same time
- ii. The point of intersection is where the two lines meet and that gives the solution set.

#### h) Core Competences:

- i. Collaboration
- ii. Observation and

	ii. Observation and enquiry skills iii. Critical thinking and problem solving iv. Personal development, etc.  i) Closure: Recap the lesson by asking the various groups to come out with what they have learned from the	enquiry skills  iii. Critical Thinking and problem solving  iv. Personal development, etc.  i) Closure: Recap the lesson by asking the various groups to come out with what they have learned from the lesson.	
	lesson.  j) Evaluation:  Draw graphs for 3x+2y=8  and 4x-3y =5 and use the  graph to find the solution  set of the two equations.  *Teachers would be guided  to tease out the LOs and the  LIs from the sample lesson.	j) Evaluation: Draw graphs for 3x+2y=8 and 4x-3y =5 and use the graph to find the solution set of the two equations. *Teachers would be guided to tease out the LOs and the LIs from the sample lesson.	
3.Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in your sample	
learning and	gaps in their sample lesson	lesson plans and discuss	
assessment	plans and discuss possible	possible ways of addressing	
assessificit	1 -	1 -	
<b>D</b> = 4!	ways of addressing them (NTS	them (NTS 1a, 3d, 3e, 3f, 3g and	
Reading and	1a, 3d, 3e, 3f, 3g and 3m).	3m).	
discussion of			
the teaching	Possible gaps:	Possible gaps:	
	l		
and learning	a) inadequate	a) inadequate prescribed	
_	<u> </u>		
and learning activities	prescribed textbooks	textbooks for	
and learning activities noting,	prescribed textbooks for mathematics	textbooks for mathematics	
and learning activities noting, addressing,	prescribed textbooks for mathematics b) inadequate teaching	textbooks for mathematics b) inadequate teaching	
and learning activities noting, addressing, and explaining	prescribed textbooks for mathematics b) inadequate teaching learning resources	textbooks for mathematics b) inadequate teaching learning resource	
and learning activities noting, addressing, and explaining areas where	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive	
and learning activities noting, addressing, and explaining areas where teachers may	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive	textbooks for mathematics b) inadequate teaching learning resource	
and learning activities noting, addressing, and explaining areas where teachers may require	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive	
and learning activities noting, addressing, and explaining areas where teachers may require clarification	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions:	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions:	
and learning activities noting, addressing, and explaining areas where teachers may require clarification Noting opportunities for making	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of:	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of:	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links to the	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links to the Secondary	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other Internet facilities	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links to the Secondary School	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other Internet facilities c) PLC sessions on GESI	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links to the Secondary School Curriculum	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other Internet facilities c) PLC sessions on GESI and assessment	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links to the Secondary School Curriculum Noting	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other Internet facilities c) PLC sessions on GESI and assessment d) self and peer	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other	
and learning activities noting, addressing, and explaining areas where teachers may require clarification  Noting opportunities for making explicit links to the Secondary School Curriculum Noting opportunities	prescribed textbooks for mathematics b) inadequate teaching learning resources c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other Internet facilities c) PLC sessions on GESI and assessment d) self and peer assessment	textbooks for mathematics b) inadequate teaching learning resource c) lack of GESI responsive assessment methods.  Possible solutions: E.g. Use of: a) a library b) OERs and other	
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GESI

responsivenes s and ICT and 21st C skills Reading, discussion, and identification of continuous assessment opportunities in the lesson. **Each lesson** should include at least two opportunities to use continuous assessment to support learner teacher learning Links to the

- 3.2 Ask teachers to tease out the learning outcomes and learning indicators from the sample lesson plan.
- 3.2 Tease out the learning outcomes and learning indicators from the sample lesson plan.

E.g.

- E.g.
- LO: Demonstrate understanding of Graphical Method for solving Linear Equations in two variables LI 1. Plot points for given linear equations.
- LO: Demonstrate understanding of Graphical Method for solving Linear Equations in two variables LI 1. Plot points for given linear equations.
- LI 2. Draw graphs for given linear equations.
- LI 2. Draw graphs for given linear equations.
- LI 3. Determine the point of intersection as the solution for two given linear
- LI 3. Determine the point of intersection as the solution for two given linear equations.
- 3.3 Ask teachers to suggest alternative ways of delivering the sample
- 3.3 Suggest alternative ways of delivering the sample lesson plan (NTS 2e).

> Resources:

existing PLC

Themes, for

example,

research,

external

web,

reference material:

YouTube,

physical resources,

questioning

and to other

literature, on

power point;

how they

should be

used.

action

E.g. Use of:

equations.

lesson

plan (NTS 2e).

- a) flipped classroom, i.e. form of blended learning requiring readings at home and work on live problem solving during class time
- E.g. Use of:

- b) demonstration
- a) flipped classroom, i.e. form of blended learning requiring readings at home and work on live problem solving during class time
- c) simulation d) application of simultaneous linear equation in real life.
- b) demonstration

c) simulation.

- 3.4 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness (NTS 2e).
- 3.4 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 2e).

Consideration needs to be given to local availabilitygui dance on any power point

presentations

- E.g.
  - a) Classroom arrangement that
- E.g.
- facilitates interaction
- a) Classroom arrangement that facilitates interaction
- b) Mixed ability/gender groupings
- b) Mixed ability/gender grouping

, TLM or other
resources
which need to
be developed
to support
learning

- c) Giving positive feedback to learners especially the disadvantaged.
- d) Using gender and Special Education Need (SEN) sensitive language and examples, etc.
- 3.5 Ask teachers to discuss how the session is linked to the use of assessment tools and practices, i.e. assessment for learning, assessment as learning and assessment of learning (NTS 3k).

E.g.

- a) Question and answer method promotes assessment for learning
- b) Marking own work is an example of assessment as learning
- c) Getting peers to mark work promotes assessment for learning
- d) Presentation of the assessment for grading towards WASSCE is an example of assessment of learning, etc.
- 3.6 In groups, ask teachers to suggest other authentic assessment methods that could be used in the sample lesson (NTS 30).
- E.g. Observation, simulation, projects (as), Peerassessment (as or for), Differentiated assessment, portfolio (for) etc.

c) Using positive feedback to learners especially the disadvantaged

3.5 Discuss how the session is linked to the use of assessment tools and practices, i.e. assessment for learning, assessment as learning and assessment of learning (NTS 3k).

- a) Question and answer method
- b) promotes assessment for learning
- c) Marking own work promotes assessment as learning

- 3.6 Suggest other authentic assessment methods that could be used in the sample lesson (NTS 3o).
- E.g. Observation, simulation, projects (as), Peer-assessment (as or for), Differentiated assessment, portfolio (for) etc.

				1
		3.7 Ask teachers to list and	3.7 List and discuss how the	
		discuss how the session	session makes use of ICT	
		makes use of ICT resources to	resources to support relevant	
		support relevant activities in	activities in the NTS (NTS 3n).	
		the NTS (NTS 3n).	(Extension Activity)	
		E.g. Pre-recorded videos,	E.g. Pre-recorded videos,	
		charts, posters,	charts, etc.	
		photographs,	3.7.3.7.5.5, 5.5.5.	
		OERs/Internet facilities,		
		mobile phones, etc.		
		mosne phones, etc.		
		3.8 Ask one teacher to model	3.8 Model the sample lesson	
		a teaching activity the sample	for feedback from the group	
		lesson for feedback from the	(NTS 3f, 3p). <b>(Extension</b>	
		group (NTS 3f, 3p).	Activity)	
		(Extension Activity)	,,	
4 E	valuation and	4.1 Ask teachers to reflect	4.1 Reflect and write what you	15 mins
	view of session:	and write what they have	have learnt in the session	
		learnt in the session using	using the "Talk-to-the-hand"	
>	Identifying	the "Talk-to-the-hand"	strategy (teacher place their	
	and	strategy (teacher place their	palm on a sheet of paper and	
	addressing	palm on a sheet of paper and	trace the fingers out, and in	
	_	trace the fingers out, and in	each finger, write the key	
	any			
	outstanding	each finger, write the key	thing they have learnt) (NTS	
	issues relating	thing they have learnt) (NTS	3e).	
	to the	3e).		
	lesson/s for	4.2 Ask them to share their	4.2 Chang your noffeetiens with	
	clarification		4.2 Share your reflections with	
_	Madina Heri	reflections with the larger	the larger group (NTS 1a).	
	Noting that	group (NTS 1a).		
	teachers need	42 Paritalland	4.2.14	
	to identify	4.3 Remind teachers to	4.3 Identify a critical friend who	
	critical friends	identify a critical friend to	observed you teach your lesson	
	to observe	observe them while they	in relation to PLC Session 10	
	lessons and	teach their lesson in relation	and provide feedback at the	
	report at next	to PLC Session 10 and	next PLC session (NTS 3I).	
	session	provide feedback at the next	4.4 Remember to read Session	
		PLC session (NTS 3I).	11 from the PLC Handbook in	
		4.4 Remind teachers to read	preparation of the next session	
		Session 11 of the PLC	(NTS 3a).	
		Handbook in preparation for		
		the next session (NTS 3a).		

PLC	Session for Topic 11: Tra	ining needs of teachers	
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to new session  NB The guidance	1.1 Start the session with an ice breaker. E.g. bowl of questions, riddles, double-double game, etc.	1.1 Participate in ice breaker.	25 mins
for PLC Coordinator should identify, address, and provide	1.2 Ask teachers to write one thing they have learnt in PLC Session 10 and share with the group.	1.2 Write one thing you have learnt in PLC Session 10 and share with the group.	
explanations for any areas where teachers might require clarification on an aspect of the lesson.	1.3 Ask a teacher to read the learning outcomes (LOs) and learning indicators (LIs) below to set the stage for the session.	1.3 Read the learning outcomes (LOs) and learning indicators (LIs) below to set the stage for the session.	
NB PLC Coordinator should ask teachers to plan for their	LO 1: Demonstrate knowledge in Professional Portfolio (PP) development and action research in the classroom.	LO 1: Demonstrate knowledge in Professional Portfolio (PP) development and action research in the classroom.	
teaching as they go through the PLC session	LI 1.1 Identify items to be included in the PP. LI 1.2 Give examples of the issues in the classroom that need action research to address.	LI 1.1 Identify items to be included in the PP. LI 1.2 Give examples of the issues in the classroom that need action research to address.	
	LO 2: Demonstrate knowledge and skills required for implementing equity and inclusion policies in schoolwork.	LO 2: Demonstrate knowledge and skills required for implementing equity and inclusion policies in schoolwork.	
	LI 2.1 Identify skills required for implementing	LI 2.1 Identify skills required for implementing equity and	

equity and inclusion
policies in schoolwork.
LI 2.2 Show how inclusive
issues can be addressed.

LI 2.3 Give examples of how equity and inclusion policies improve teaching and learning in schools.

LO 3: Demonstrate knowledge in ICT integration in teaching and learning.

LI 3.1 State how to integrate ICT in teaching and learning.

LI 3.2 Explain how integration of ICT improves teaching and learning in schools.

LI 3.3 Identify three challenges associated with integrating ICT in teaching and learning.

LI 3.4 Analyse ways to address the challenges of integrating ICT in teaching and learning. LO 5: Demonstrate knowledge and

understanding of the key GES policies.

LI 5.1 State at least three policies of GES.

LI 5.2 Analyse at the relevance of at least three key GES policies.

inclusion policies in schoolwork.

LI 2.2 Show how inclusive issues can be addressed.

LI 2.3 Give examples of how equity and inclusion policies improve teaching and learning in schools.

LO 3: Demonstrate knowledge in ICT integration in teaching and learning.

LI 3.1 State how to integrate ICT in teaching and learning.

L1 3.2 Explain how integration of ICT improves teaching and learning in schools.

LI 3.3 Identify three challenges associated with integrating ICT in teaching and learning.

LI 3.4 Analyse ways to address the challenges of integrating ICT in teaching and learning.

LO 5: Demonstrate knowledge and understanding of the key GES policies.

LI 5.1 State at least three policies of GES.

LI 5.2 Analyse at the relevance of at least three key GES policies.

LO 6: Demonstrate knowledge and understanding of	LO 6: Demonstrate knowledge and understanding of leadership	
leadership for learning.  LI 6.1 State at least three qualities of a good leader.	for learning.  LI 6.1 State at least three qualities of a good leader.	
LI 6.2 Analyse at least three leadership styles.	LI 6.2 Analyse at least three leadership styles.	
1.4 In six groups, ask teachers to discuss the various ranks in the GES listed in the NTS for general discussion.	1.4 Discuss the various ranks in the GES listed in the NTS for general discussion.	
E.g. Rank 1, Rank 2, Rank 3, Rank 4, Rank 5 and Rank 6.	E.g. Rank 1, Rank 2, Rank 3, Rank 4, Rank 5 and Rank 6.	
1.5 In their groups, ask teachers to present on training needs of teachers in the rank they discussed under Activity 1.4.	1.5 In your groups, present on the training needs of teachers at the rank you discussed under Activity 1.4.	
1.6 Ask teachers to identify and discuss items in the portfolio at Rank 1 of the GES (NTS 1b).	1.6 Identify and discuss items in the portfolio at Rank 1 of the GES (NTS 1b).	
E.g. assignments, reflective practice, lesson notes, teaching philosophy, photographs, etc.	E.g. assignments, reflective practice, lesson notes, etc.	
1.7 Ask teachers to write some of the issues in the classroom that trigger action research (NTS 3b,3c).	1.7 Write some of the issues in the classroom that trigger action research (NTS 3b, 3c).	
E.g. Absenteeism, indiscipline, poor performance in a	E.g. Absenteeism, indiscipline, etc.	

particular subject, weak

teaching strategies, lateness, etc.

1.8 In groups, ask teachers to list four skills required for implementing equity and inclusion policies in schoolwork (NTS 3f, 3g). 1.8 List four skills required for implementing equity and inclusion policies in schoolwork (NTS 3f, 3g).

E.g. ICT skills, communication skills, identifying learning needs of learners, using different assessment strategies, being dynamic with class space, , accommodating learning styles and disabilities, being able to integrate technology in teaching and learning, be aware of religious diversity, etc.

E.g. ICT skills, communication skills, identifying learning needs of learners, using different assessment strategies, etc.

1.9 Ask teachers to identify and write how inclusive issues in schools can be addressed (NTS 3f, 3g) 1.9 Identify and write how inclusive issues in schools can be addressed (NTS 3f, 3g).

E.g.

- a) Using mixed groupings of students with different learning abilities.
- b) Giving students with Special Education Needs (SEN) equal opportunity to learn
- c) Eliminating gender and ethnic barriers to learning.

1.10 Using think-pairshare, ask teachers to discuss how equity and inclusion policies affect teaching and learning. E.g.
Using mixed groupings of students with different learning abilities.

1.10 Discuss how equity and inclusion policies affect teaching and learning.

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- a) Prevent exploitation of vulnerable groups
- b) Provide learning opportunities for disadvantaged groups
- c) Lead to equitable distribution of learning resources
- 1.11 Ask teachers, in groups, to identify training activities for teachers at the various GES ranks, as indicated in the NTS, that can support teaching and learning in secondary schools.

#### E.g.

#### Rank 1

- a) Portfolio writing/development
- b) Action research in classroom teaching and learning

#### Rank 2

- a) Mentoring and coaching skills
- b) Leadership for learning skills

#### Rank 3

- a) Examination item writing and management
- b) School curriculum and policy development and reviews

#### Rank 4

- a) Integrating ICT and other technologies in school administration and governance
- b) Leadership for learning

#### E.g.

- a) Prevent exploitation of vulnerable groups
- b) Provide learning opportunities for disadvantaged groups

1.11 Identify training activities for teachers at the various GES ranks, as indicated in the NTS, that can support teaching and learning in secondary schools

#### E.g.

## Rank 1 Portfolio

writing/development

#### Rank 2

Mentoring and coaching skills

#### Rank 3

Examination item writing and management

# Rank 4 Integrating ICT and other

technologies in school
administration and
governance

#### Rank 5

- a) Knowledge of procurement laws
- b) Knowledge of GES and MoE organograms and working principles

## Rank 6

- a) Strategic planning and management in education
- b) Communication skills (oral and written) for dealing with policy makers and writing policy document and memoranda
- 1.12 Ask teachers, in groups of different areas of specialization (making sure female and male teachers are appropriately represented in each group, where applicable), to identify specific Standards of the NTS that seek to address the training needs of teachers in various ranks of the GES.

#### Note:

See the training needs listed in the appendix of the NTS and identify the Standards that can address them.

1.13 Ask teachers to write at least four qualities of a good leader that are capable of helping to address the training needs of teachers in the various ranks of the GES (NTS 1c, 1f and 1g).

#### Rank 5

a) Knowledge of procurement laws

Rank 6
Strategic planning and
management in education

1.12 Identify specific Standards of NTS that seek to address the training needs of teachers in various ranks of the GES.

#### Note:

See the training needs listed in the appendix of the NTS and identify the Standards that can address them.

1.13 Write at least four qualities of a good leader that are capable of helping to address the training needs of teachers in the various ranks of the GES (NTS 1c, 1f and 1g).

	E.g. Ranks 2, 3, and 5 of the GES	E.g. Ranks 2, 3, and 5 of the GES	
	1.15 Using think-pair-share, ask teachers to state and discuss the types of leadership styles that can be employed to address the training needs of teachers in the various ranks of the GES Ranks 2, 3, and 5 in the NTS (NTS 1c, 1f and 1g).	1.15 State and discuss the types of leadership styles that can be employed to address the training needs of teachers in the various ranks of the GES Ranks 2, 3, and 5 in the NTS (NTS 1c, 1f and 1g).	
	E.g. a) Authoritarian b) Participative c) Delegative d) Transactional e) Transformational	E.g. a) Authoritarian b) Participative	
2. Planning for	2.1 Ask teachers to discuss	2.1 Discuss samples of your	20mins
teaching,	samples of their lesson	lesson plans in your	
learning and	plans in their respective	respective subject areas and	
assessment	subject areas and link	link them to the NTS (NTS	
activities for the	them to the NTS (NTS 3a,	3a, 3b and 3e).	
lesson/s making	3b and 3e).		
links to secondary	Sample of lesson outline in	Sample of lesson outline in	
school	Social Studies:	Social Studies:	
curriculum	Social Studies.	Social Studies.	
	An example of an outline plan for teaching based on the 2010 SHS Social Studies Syllabus*.	An example of an outline plan for teaching based on the 2010 SHS Social Studies Syllabus*.	
	a) <b>Topic:</b> The role of the individual in a community development	a) <b>Topic:</b> The role of the individual in a community development	
	<b>b) Sub-topic:</b> Levels of community and community development	<b>b) Sub-topic:</b> Levels of community and community development	

- c) Objectives: By the end of the lesson, the learner will be able to;
  - i. identify the levels of community,
  - ii. explain at least four ways by which an individual can contribute to the development of their community.
- d) **RPK:** Learners have been taking part in communal labour.
- e) Introduction: Ask learners to mention things they have observed during communal labour.
- f) Teacher and learner activities:
  - Students undertake a case study of the community development project and present their findings.
  - ii. Students brainstorm to come up with ways an individual can contribute to the development of their community.

#### g) Core points:

i. A community is a group of people living in a locality. The group has common values, interest, enduring ties, frequent interactions and a sense of closeness.

- c) Objectives: By the end of the lesson, the learner will be able to;
  - identify the levels of community,
  - ii. explain at least four ways by which an individual can contribute to the development of their community.
- d) **RPK:** Learners have been taking part in communal labour.
- e) Introduction: Ask learners to mention things they have observed during communal labour.

# f) Teacher and learner activities:

- Students undertake

   a case study of the
   community
   development project
   and present their
   findings.
- ii. Students brainstorm to come up with ways an individual can contribute to the development of their community.

#### q) Core points:

i. A community is a group of people living in a locality. The group has common values, interest, enduring ties, frequent interactions and a sense of closeness.

- ii. The levels of community include: neighbourhood, village, town, district/municipal/metropolitan, regional and national.
- iii. How to contribute to community development
  - 1. Attending community meetings
  - 2. Volunteer to help at a local event hosted by the community
  - 3. Volunteer time for a committee that helps with community development, etc.
- *h)* Core competencies:
  - i. Personal development and leadership
  - ii. Communication and collaboration
  - iii. Critical thinking and problem solving
- i) Conclusion: Elicit responses from learners about what they have learnt from lesson through questioning and answering technique.
- i) Evaluation:
  - i. What is community?
  - ii. State 3 ways an individual can contribute to the

- ii. The levels of community include: neighbourhood, village, town, district/municipal/me tropolitan, regional and national.
- iii. How to contribute to community development
  - Attending community meetings
  - 2. Volunteer to help at a local event hosted by the community
  - 3. Volunteer time for a committee that helps with community development, etc.
- *h)* Core competencies:
  - i. Personal development and leadership
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  - iii. Critical thinking and problem solving
- i) Conclusion: Elicit
   responses from learners
   about what they have
   learnt from lesson through
   questioning and
   answering technique.
- j) Evaluation:
  - iii. What is community?
  - iv. State 3 ways an individual can contribute to the

				T
		development of his/	development of his/	
		her community.	her community.	
		*Teachers would be	*Teachers would be guided	
		guided to tease out the	to tease out the learning	
		learning outcomes and	outcomes and learning	
		learning indicators from	indicators from the lesson.	
		the lesson.		
	Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in your	30 mins
lea	rning and	gaps in their sample lesson	sample lesson plans and	
ass	sessment	plans and discuss possible	discuss possible ways of	
		ways of addressing same	addressing same (NTS 3a).	
>	Reading and	(NTS 3a).		
	discussion of			
	the teaching	E.g.	E.g.	
	and learning	a) Possible gaps:	<b>Possible gaps:</b> Inadequate	
	activities	Inadequate teaching	teaching and learning	
	noting,	and learning resources.	resources.	
	addressing,	Possible Solution:	Possible Solution:	
	and		Online search for resources	
	-	Online search for	Online search for resources	
	explaining	resources.		
	areas where			
	teachers	b) <b>Possible gaps:</b> Not		
	may require	integrating technology		
	clarification	in the enactment of the		
	Noting	plan.		
	opportunitie	Possible Solution:		
	s for making	Use videos and		
	<i>explicit</i> links	PowerPoint slides as		
	to the	appropriate		
	Secondary			
	School	3.2 Ask teachers to tease	3.2 Tease out the learning	
	Curriculum	out the learning outcomes	outcomes and the learning	
>	Noting	and the learning indicators	indicators from the sample	
	opportunitie	from the sample lesson	lesson plan and compare	
	s for	plan and compare these	these with the objectives	
	integrating:	with the objectives (NTS	(NTS 3h).	
	GESI	3h).	(11.0 0).	
	responsiven	J,.		
	ess and ICT	E.g.	E.g.	
	and 21st C	LO: Demonstrate		
	skills		LO: Demonstrate knowledge	
_		knowledge and	and understanding in the	
	Reading,	understanding in the levels	levels of community and	
	discussion,	of community and	community development.	
	and	community development.		
	identificatio			

	n of	LI 1.1 Identify the levels of	LI 1.1 Identify the levels of	
	continuous	community.	community.	
	assessment	LI 1.2 Explain at least four	community.	
	opportunitie	ways by which an		
	s in the	individual can contribute to		
	lesson. Each	the development of their		
	lesson	community.		
	should			
	include at	3.3 Ask teachers to identify	3.3 Identify and discuss ways	
	least two	and discuss ways the	the lessons could be taught	
	opportunitie	lessons could be taught	using creative approaches	
	s to use	using creative approaches	and making the lesson ICT	
	continuous	and making the lesson ICT	mediated and GESI	
	assessment	mediated and GESI	responsive.	
	to support	responsive.		
	student			
	teacher	E.g.	E.g.	
	learning	a) teach using PowerPoint	a) teach using PowerPoint	
		b) providing opportunities	b) providing opportunities	
•	Resources:	for both male and female	for both male and female	
>	Links to the	students to participate	students to participate fully	
	existing PLC	fully in the lesson	in the lesson	
	Themes, for	c) making reasonable		
	example,	adjustment so that		
	action	disadvantaged learners		
	research,	can benefit from the lesson		
	questioning			
	and to other	3.4 Ask teachers to write	3.4 Write how the NTS will	
	external	how the NTS will help to	help to promote the delivery	
	reference	promote the delivery of	of lessons in the secondary	
	material:	lessons in the secondary	school curriculum (NTS 2b,	
	literature,	school curriculum (NTS 2b,	2d).	
	on web,	2d).	,	
	YouTube,	,		
	physical			
	resources,			
	power point;	E.g.	E.g.	
	how they	a) By highlighting the way	By highlighting the way in	
	should be	in which lessons are to	which lessons are to be	
	used.	be delivered effectively	delivered effectively	
>		b) By indicating the	a survey of the	
	Consideratio	training needs of		
	n needs to	teachers at the lower		
	be given to	ranks of the GES where		
	local	classroom teaching is		
	availability	the teacher's main		
	-			
	and	work		

guidanaa an	2 E Ack toachara to state	2 E State alternative wave of
guidance on	3.5 Ask teachers to state	3.5 State alternative ways of
any power	alternative	delivering the sample
point	ways of delivering the	lessons plan (NTS 3a, 3e and
presentation	sample	3g).
s, TLRs or	lesson plan (NTS 3a, 3e and	
other	3g).	
resources		
which need	E.g.	E.g.
to be	Use of	Use of
developed	a) flipped classroom,	a) flipped classroom,
to support	b) extended learning,	b) extended learning, etc.
learning	c)demonstration,	3,
	d) field trips/community	
	walk,	
	e) work-based learning,	
	etc.	
	3.6 Ask teachers to discuss	3.6 Discuss how the session
	how the session is linked	is linked to the use of
	to the use of formative	formative assessment tools
	assessment tools and	and practices (NTS 3k, 3l).
	practices (NTS 3k, 3l).	
	E.g.	E.g.
	a) Assessment for	Assessment for learning and
	learning and	assessment as learning
	assessment as learning	should be encouraged
	should be encouraged	
	b) Use of well-constructed	
	marking schemes	
	3.7 Ask teachers to	
	brainstorm the sources of	
	support and resources	
	teachers need to enable	
	them to improve their	
	teaching.	
	E.g.	3.8 Brainstorm the sources
	a) Professional Learning	of support and resources
	Community sessions	teachers need to enable
	b) Posters	them to improve their
	c) Pictures	teaching.
	d) Further reading	
	e) Online support (e.g.	E.g.
	YouTube lessons)	a) Professional Learning
	·	
	f) Further studies, etc.	Community sessions

	3.9 Ask one teacher to model a teaching activity in the sample lesson plan (NTS 1a, 3a). (Extension Activity)	b) Further reading, etc.  3.9 Model a teaching activity in the sample lesson plan (NTS 1a, 3a). (Extension Activity)	
4. Evaluation and review of session: a. Teachers need to identify	4.1 Ask teachers to reflect and write what they have learned in the session.	4.1 Reflect and write what you have learned in the session.	15 mins
critical friends to observe lessons and report at next session b. Identifying	4.2 Ask teachers to share what they have learned in the session with the larger group.	4.2 Share what you have learned in the session with the larger group.	
and addressing any outstanding issues relating to the lesson/s for clarification	4.3 Ask teachers to reflect and write what they have learned from PLC Session 1 to Session 10	4.3 Reflect and write what you have learned from PLC Session 1 to Session 10	
	4.4 Remind teachers to identify a critical friend to observe them in teaching their lessons in relation to PLC Session 11 and provide feedback to them.	4.4 Remember to identify a critical friend to observe you in teaching your lessons in relation to PLC Session 11 and provide feedback to you.	

### **TVET PLC Session 4: Professional Development**

#### **TVET Domain:**

- 1. Agricultural Science
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
Review of previous session and	1.1 Ice breaker activity: Either use:	1.1 Ice breaker activity:  Either use:	25 mins
introduction of new	The Allegory of the Tailless Monkey	The Allegory of the Tailless Monkey	
session	There lived a happy community of monkeys in	There lived a happy community of monkeys in the <i>Nunya</i>	
for PLC Coordinator should identify, address, and provide explanations for any areas where teachers might require clarification on an aspect of the lesson.  NB PLC Coordinator should ask teachers to plan for their teaching as they go	middle-aged sanguine monkey called <i>Blekpo</i> ventured out of the forest into a large farm. To his joyful surprise, he saw many new things he had never seen before. The air was fresh and the land was flat with very few trees. There was a lot of space to run and jump as much as he could. He sighed with excitement, 'what a freedom! 'At last I am free. I can do whatever I like without the disruption from those old clumpy folks who think they have seen it all. When I get back and tell my experience, the old fools will	sanguine monkey called <i>Blekpo</i> ventured out of the forest into a large farm. To his joyful surprise, he saw many new things he had never seen before. The air was fresh and the land was flat with very few trees. There was a lot of space to run and jump as much as he could. He sighed with excitement, 'what a freedom! 'At last I am free. I can do whatever I like without the disruption from those old clumpy folks who think they have seen it all. When I get back and tell my experience, the old fools will keep quiet because they will know that	
through the PLC session	keep quiet because they will know that they do not have monopoly over experience'. Soon he was all over the place, jumping and climbing the yam poles from one yam mound to another.  Unfortunately, he got his head trapped in the farmer's trap. Seeing that he was	they do not have monopoly over experience'. Soon he was all over the place, jumping and climbing the yam poles from one yam mound to another.  Unfortunately, he got his head trapped in the farmer's trap. Seeing that he was going to die,	

going to die, he managed to exchange his tail with his head, Having lost his tail in the process, he sneaked back into the forest shamefully. He began to feel odd and lonely because he was the only one without a tail. Cunningly, he decided to trick other monkeys also to cut off their tails so they can become equal. As a good orator his ideas began to gain grounds and many young monkeys were willing to cut off their tails as he suggested. Abrewaa the oldest female monkey in the Nunya forest who herself had survived many disasters saw everything that happened to troublesome monkey, Blekpo, that faithful day. She was on her own lookout for her naughty grandson who also went on adventure in the forest that day. She called a meeting of all the monkeys and narrated all that had happened to the tailless monkey. He explained that, every monkey's agility to climb is in its tail, hence the tail cannot be a nuisance as Blekpo was making it look like. She warned that monkeys will be unable to escape as fast as they need should they chop off their tails. Having shared many experiences, Abrewaa succeeded in persuading the younger monkeys from cutting off their tails.

- a) What lesson have you learnt from this story?
- b) What saved the other monkeys that were going

he managed to exchange his tail with his head, Having lost his tail in the process, he sneaked back into the forest shamefully. He began to feel odd and lonely because he was the only one without a tail. Cunningly, he decided to trick other monkeys also to cut off their tails so they can become equal. As a good orator his ideas began to gain grounds and many young monkeys were willing to cut off their tails as he suggested. Abrewaa the oldest female monkey in the Nunya forest who herself had survived many disasters saw everything that happened to troublesome monkey, Blekpo, that faithful day. She was on her own lookout for her naughty grandson who also went on adventure in the forest that day. She called a meeting of all the monkeys and narrated all that had happened to the tailless monkey. He explained that, every monkey's agility to climb is in its tail, hence the tail cannot be a nuisance as Blekpo was making it look like. She warned that monkeys will be unable to escape as fast as they need should they chop off their tails. Having shared many experiences, Abrewaa succeeded in persuading the younger monkeys from cutting off their tails.

- a) What lesson have you learnt from this story?
- b) What saved the other monkeys that were going to

- to chop off their tails as a result of the deception?
- c) How can you relate this story to the PLC sessions? Or

Begin the session by asking teachers to mention what they know about the National Teachers' Standards (NTS)

- 1.2 Ask a teacher who observed a lesson of a critical friend to share their findings with the group (NTS 1a, 1e).
- 1.3 Ask a teacher to read NTS

  1a, 1b, and 1c and tease
  out the learning
  outcomes (LOs) and
  learning indicators (LIs)
  of the session and
  compare with the LOs
  and LIs listed below.
- LO 1: Demonstrate ability to critically and collectively improve teaching and learning.
- LI 1.1 Reflect on one's own practice.
- LI 1.2 Reflect and critique one's own and peers' practice using lesson notes, reflective log, reflective journals, portfolios, etc.
- LO 2: Demonstrate knowledge, skill and willingness to improve personal and professional development through lifelong learning and continuous professional development.

- chop off their tails as a result of the deception?
- c) How can you relate this story to the PLC sessions?

Begin the session by asking teachers to mention what they know about the National Teachers' Standards (NTS)

- 1.2 Share your findings of the lesson you observed your critical friend teach after the last PLC session (NTS 1a. 1e).
- 1.3 Read NTS 1a, 1b, and 1c and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session. and compare with the LOs and LIs listed below.
- LO 1: Demonstrate ability to critically and collectively improve teaching and learning.
- LI 1.1 Reflect on one's own practice.
- LI 1.2 Reflect and critique one's own and peers' practice using lesson notes, reflective log, reflective journals, portfolios, etc.
- LO 2: Demonstrate knowledge skill and willingness to improve personal and professional development through lifelong learning and continuous professional development.

- LI 2.1 Identify gaps in knowledge that can impede personal development.
- LI 2.2 Identify gaps in knowledge that can impede professional development.
- LO 3: Demonstrate skill in effective leadership both in the classroom and wider school community.
- LI 3.1 Model GESI compliant qualities in the classroom and beyond.
- LI 3.2 Show high quality of attendance and punctuality to class and meetings.
- LI 3.3 Delegate roles to all learners equally irrespective of gender or ability.
- LI 3.4 Attend and contribute meaningfully to school, Parent-Teacher Association/Parent Association and other relevant community meetings.
- LI 3.5 Avoid exploiting the vulnerability of both male and female learners including SEN.
- LI 3.6 Comply with Ministry of Education (MoE) and Ghana Education Service (GES) Ethical Codes.
- LI 3.7 Volunteer to perform roles that will lead to the growth and

- LI 2.1 Identify gaps in knowledge that can impede personal development.
- LI 2.2 Identify gaps in knowledge that can impede professional development.
- LO 3: Demonstrate skill in effective leadership both in the classroom and wider school community.
- LI 3.1 Model GESI compliant qualities in the classroom and beyond.
- LI 3.2 Show high quality of attendance and punctuality to class and meetings.
- LI 3.3 Delegate roles to all learners equally irrespective of gender or ability.
- LI3.4 Attend and contribute meaningfully to school, Parent-Teacher Association/Parent Association and other relevant community meetings.
- LI 3.5 Avoid exploiting the vulnerability of both male and female learners including SEN.
- LI 3.6 Comply with Ministry of Education (MoE) and Ghana Education Service (GES) Ethical Codes.
- LI 3.7 Volunteer to perform roles that will lead to the growth and development

development of learners, the school and the wider community.

1.4 Ask teachers to discuss the relationship between the LOs and the LIs.

# of learners, the school and the wider community.

1.4 Discuss the relationship between the LOs and the LIs.

#### Note:

LO is the expected knowledge, understanding, skills, etc. to be acquired at the end of a lesson,

LI is the practical evidence that learning has taken place. It may include verbal responses, practical activity or products.

1.5 Ask teachers to discuss and relate the concept of Professional Development to their various TVET domains.

E.g.

Professional
development refers to
continuing education
and career training
after a person has
entered the workforce
in order to help them
develop new skills, stay
up-to-date on current
trends and advance
their career (NTS 2c,
3j).

Ref. <a href="https://www.webce.com">https://www.webce.com</a> (retrieved 24/03/2022)

1.6 Ask teachers to identify further areas of professional development that will enhance their teaching.

E.g. Short courses such as cake making, exterior

#### Note:

LO is the expected knowledge, understanding, skills, etc. to be acquired at the end of a lesson,

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1.5 Discuss and relate the concept of Professional Development to their various TVET domains.

E.g.

Professional development refers to continuing education and career training after a person has entered the workforce in order to help them develop new skills, stay up-to-date on current trends and advance their career (NTS 2c, 3j).

Ref. <u>https://www.webce.com</u> (retrieved 24/03/2022)

1.6 Identify further areas of professional development that will enhance your teaching.

E.g.

Short courses such as cake making, exterior and

			T
	and interior decoration,	interior decoration,	
	exhibitions, training in	exhibitions, fish	
	the use of	farming, art association	
	agrochemicals, fish	meetings, courses in ICT,	
	farming, art association	etc., (NTS 1b, 3m).	
	meetings, courses in ICT,		
	etc., (NTS 1b, 3m).		
Give regard for	1.7 Ask teachers to identify	1.7 Identify possible	20 mins
misconceptions	possible misconceptions	misconceptions and	
and stereotypes,	and stereotypes in TVET.	stereotypes in TVET.	
GESI, ICT, 21st			
century skills, etc.	E.g.	E.g.	
	a) TVET is for learners with	a) TVET is for learners with low	
	low IQ.	IQ.	
	b) Some TVET domains are	b) Some TVET domains are	
	gender specific, e.g,.	gender specific, e.g,.	
	Agriculture for males	Agriculture for males,	
	Home Economics for	Home Economics for	
	females, Technical and	females, Technical and	
	Visual Art, etc.	Visual Art, etc.	
	c) TVET is not suitable for	c) TVET is not suitable for SEN	
	SEN student.	student,	
	d) iv. TVET is expensive,	NTS 2f, 3f and 3m).	
	(NTS 2f, 3f and 3m).	,	
	,		
	1.8 Ask teachers to discuss	1.8 Discuss possible ways of	
	the possible ways of	mitigating these	
	mitigating these	misconceptions and	
	misconceptions and	stereotypes in TVET in the	
	stereotypes in TVET in	classroom and elsewhere.	
	the classroom and		
	elsewhere.		
	E.g.	E.g.	
	a) <i>Invite role</i>	a) <i>Invite role</i>	
	models/resource	models/resource	
	persons that have	persons that have	
	overcome these	overcome these	
	stereotypes and have	stereotypes and have	
	achieve successes in	achieve successes in the	
	the TVET domains in	TVET domains in the	
	the society to interact	society to interact with	
	with learners	learners	
	<ul><li>b) Use a pre-recorded</li></ul>	b) Use a pre-recorded	
	videos of persons who	videos of persons who	
	have defied these	have defied these	
	stereotypes and have	stereotypes and have	
	achieve successes in	achieve successes in	
		I	i
	the society to inspire	the society to inspire	

- c. Do community walk to expose learners to the contribution of TVET to society.
- d. Take learners on an educational trip to industry to see at first-hand how people of diverse backgrounds and abilities including people with SEN are playing divers roles in real life and industry (NTS 1a, 2f, 3a, 3e, 3g, and 3j).
- c. Do community walk to expose learners to the contribution of TVET to society (NTS 2f, 3a, 3e, 3g and 3j).

- 1.9 In mixed gender grouping, ask teachers to list (where possible) some 21<sup>st</sup> century skills.
  - nixed gender
    g, ask
    s to list
    possible)

    1.9 In mixed gender
    groupings (where possible)
    list some 21st century skills.
- E.g. Communication skills, collaboration, observation and enquiry skills, digital literacy, creativity, innovative skills, life-long learning skills (NTS 2c, 3a).
- E.g. Communication skills, collaboration, observation and enquiry skills, digital literacy, creativity, etc., (NTS 2c, 3a).
- 1.10 Ask teachers to identify ways of incorporating ICT in their lesson.
- 1.10 Identify ways of incorporating ICT in your lesson.

E.g.

- a) surfing Open
  Educational
  Resources (OERs) and
  other internet sources
  for information
- E.g.

- b) teach using PowerPoint
- a) surfing Open
  Educational Resources
  (OERs) and other
  internet sources for
  information
  b) teach using PowerPoint
- c) employ computer software such as AutoCAD, Photoshop, Coral Draw, Paint, in teaching and learning, etc.
- c) employ computer software such as AutoCAD in teaching and learning, Photoshop, Coral Draw,

Paint, etc. (NTS 1a, 3j).

d) interact with learners via the Internet

_		1	I	
		e) create, use and		
		encourage learners to		
		use e-portfolios, etc.,		
		(NTS 1a, 3j).		
		1.11 Ask teachers to discuss	1.11 Discuss possible	
		possible activities they	activities you would adopt	
		would adopt to develop	to develop the 21 <sup>st</sup> century	
		21 <sup>st</sup> century skills such as	skills such communication	
		communication skills,	skills, collaboration,	
		collaboration,	observation and enquiry	
		observation and enquiry	skills, digital literacy,	
		skills, digital literacy,	creativity, personal	
		creativity, personal	development in your	
		development, in their	learners.	
		learners.		
		E.g.	E.g.	
		a) group discussion	a) group discussion	
		b) project	b) project	
		c) research	c) research	
		d) role play	d) role play	
		e) hands-on activities	e) hands-on activities	
		f) extended learning	(NTS 3e, 3h and 3j).	
		g) PowerPoint		
		(NTS 3e, 3h and 3j).		
2	Planning for	2.1 Ask teachers to discuss	2.1 Discuss samples of their	20 mins
	teaching,	samples of their lesson	lesson plans in their various	
	learning and	plans in their various	TVET domains based on the	
	assessment	TVET domains based on	2010 SHS Syllabus and link	
	activities for	the 2010 SHS Syllabus	them to the concepts of LOs	
	the lesson/s	and link them to the	and Lls*	
	making links	concepts of LOs and LIs*		
	to the TVET			
	curriculum	Sample Lesson Topic in the	Sample Lesson Topic in the	
		TVET: Introduction to	TVET: Introduction to	
		Agriculture, Home	Agriculture, Home Economics,	
		Economics, Technical Skills,	Technical Skills, Visual Art.	
		Visual Art.		
		Agricultural Science	Agricultural Science	
		Topic: Introduction to	Topic: Introduction to	
		Agriculture	Agriculture	
		Sub-topic: Importance of	Sub-topic: Importance of	
		Agriculture (to the national	Agriculture (to the national	
		economy).	economy).	
		Home Economics	Home Economics	
		Topic: Introduction to	Topic: Introduction to Nutrition	
		Nutrition	Sub-topic: Importance of	
			1	
			Nutrition.	

Sub-topic: Importance of Nutrition.

#### **Technical Skills**

Topic: Introduction to Technical Drawing. Sub-topic: Importance of Technical Drawing.

#### Visual Art

Topic: Introduction to Picture Making Sub-topic: Importance of Picture Making.

#### a) Objectives

By the end of the lesson, learners will be able to:

- List the components of Agriculture, Nutrition, Technical Drawing and Picture making.
- ii. Discuss the components of Agriculture, Nutrition, Technical Drawing and Picture making.
- iii. List and discuss five products of Agriculture, Nutrition, Technical Drawing and Picture making.
- iv. Discuss the importance of Agriculture, Nutrition, Technical Drawing and Picture making to the economy of Ghana.

#### b) Core activities

 i. Guide learners in groups to list the components of Agriculture, Nutrition, Technical Drawing and Picture making

#### **Technical Skills**

Topic: Introduction to Technical Drawing.
Sub-topic: Importance of

Sub-topic: Importance of Technical Drawing.

#### Visual Art

Topic: Introduction to Picture Making Sub-topic: Importance of Picture Making.

#### a) Objectives

By the end of the lesson, learners will be able to:

- List the components of Agriculture, Nutrition, Technical Drawing and Picture making.
- ii. Discuss the components of Agriculture, Nutrition, Technical Drawing and Picture making.
- iii. List and discuss products of Agriculture, Nutrition, Technical Drawing and Picture making.
- iv. Discuss the importance of Agriculture, Nutrition, Technical Drawing and Picture making to the economy of Ghana.

#### b) Core activities

 Guide learners in groups to list the components of Agriculture, Nutrition, Technical Drawing and Picture making

- ii. Guide learners to surf
  OERs and other
  sources on the
  Internet to find more
  information to
  discuss the
  components of
  Agriculture,
  Nutrition, Technical
  Drawing and Picture
  making.
- iii. Guide learners to list and discuss five products of Agriculture, Nutrition, Technical Drawing and Picture making.
- v. Put learners in mixed ability/gender groups (where possible) discuss the importance of Agriculture, Nutrition, Technical Drawing and Picture making to the economy of Ghana.

#### c) Evaluation

Evaluate the lesson by using question and answer method.

- \*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.1 Ask teachers to tease out LOs and LIs from the sample lesson.
- LO: Demonstrate
  understanding of the
  importance of agriculture,
  nutrition, technical
  drawing and picture
  making (to the national
  economy).

- ii. Guide learners to surf
  OERs and other sources
  on the Internet to find
  more information to
  discuss the components
  of Agriculture, Nutrition,
  Technical Drawing and
  Picture making.
- iii. Guide learners to list and discuss five products of Agriculture, Nutrition, Technical Drawing and Picture making.
- vi. Put learners in mixed ability/gender groups (where possible) discuss the importance of Agriculture, Nutrition, Technical Drawing and Picture making to the economy of Ghana.

#### c) Evaluation

Evaluate the lesson by using question and answer method.

- \*Tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.1 Tease out LOs and LIs from the sample lesson.
- LO: Demonstrate understanding of the importance of agriculture, nutrition, technical drawing and picture making (to the national economy).

				,
		LI.1 List the components of	LI.1 List the components of	
		Agriculture, Nutrition,	Agriculture, Nutrition,	
		Technical Drawing and	Technical Drawing and	
		Picture making, etc.	Picture making.	
		LI.2 State the uses of	LI.2 State the importance of	
		Agriculture, Nutrition,	Agriculture, Nutrition,	
		Technical Drawing and	Technical Drawing and	
		Picture making.	Picture making.	
		LI.3 Identify some products of	LI.3 Identify some products of	
		Agriculture, Nutrition,	Agriculture, Nutrition,	
		Technical Drawing and	Technical Drawing and	
		Picture making (NTS 3a).	Picture making (NTS 3a).	
3	Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in your sample	30 mins
	learning and	gaps in their sample lesson	lesson plans and discuss	
	assessment	plans and discuss possible	possible ways of addressing	
		ways of addressing same	same (NTS 1a, 1e and 2c).	
•	Reading and	(NTS 1a, 1e and 2c).		
	discussion of	E.g.	E.g.	
	the teaching	Possible gaps:	Possible gap:	
	and learning	a) inadequate prescribed	Inadequate prescribed	
	activities	textbooks,	textbooks, etc.	
	noting,	b) inadequate model farms,		
	addressing,	workshops, kitchens and		
	and	studios, etc.		
	explaining	c) inadequate tools and		
	areas where	materials		
	teachers may			
	require	Possible Solution:	Possible Solution:	
	clarification	a) use of a library (e-library	a) use of a library (e-library and	
		and physical), Open	physical), Open Educational	
$\triangleright$	Noting	Educational Resources	Resources (OERs) and other	
	opportunities	(OERs) and other Internet	Internet facilities	
	for making	facilities		
	<i>explicit</i> links	b) use work-based learning		
	to the	method of teaching, etc.		
	Secondary	c) adopt local tools and		
	School	materials in the immediate		
	Curriculum	environment.		
	Noting			
	opportunities	3.2 Ask teachers to suggest	3.2 Suggest alternative ways of	
	for	alternative ways of delivering	delivering the sample lessons	
	integrating:	the sample lessons (NTS 3f,	(NTS 3f, 3j).	
	GESI .	3j).		
	responsivenes			
	s and ICT and	E.g. use of:	E.g. use of:	
	21 <sup>st</sup> C skills	a) flipped classroom,	a) flipped classroom,	
>	Reading,	b) extended learning	b) extended learning	
	discussion,	c) demonstration	c) demonstration	
<u> </u>	and	d) simulation	D) simulation	

identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning **Resources:** 

- Links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used.
- needs to be given to local availability guidance on any power point presentations , TLM or other resources which need to be developed

Consideration

e) field trips

- f) community walk
- a) work-based learning, etc.
- 3.3 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3I and 3m).

E.g.

- a) classroom arrangement that facilitates interaction
- b) mixed ability or gender groupings that facilitate collaboration
- c) non-stereotype role play
- d) use of positive feedback to learners, especially, the disadvantaged
- e) use of a local resource person who has defied stereotyping/stigma to succeed in TVET.
- 3.4 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices (NTS 3k, 3l, 3m and 3n).

E.g.

- a) Assessment for learning
- b) Assessment as Learning
- c) Project work
- d) Role play
  - 3.5 Ask teachers in their domain groups to brain-write other possible authentic assessment methods that could be used in the sample lesson and share same with the whole group (NTS 2e, 3k, 3l and 30).

e) field trips, etc.,

3.3 Review their sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3l and 3m).

E.g.

- a) classroom arrangement that facilitates interaction
- b) mixed ability or gender groupings that facilitates collaboration
- c) non-stereotype role play in TVET.

3.4 Discuss how the unit is linked to the use of formative assessment tools and practices (NTS 3k, 3l, 3m and 3n).

- a) Assessment for learning
- b) Assessment as learning
  - 3.5 In your domain groups brain-write other possible authentic assessment methods that could be used in the sample lesson and share same with the whole group (NTS 2e, 3k, 3l and 3o).

	to cupport	Ea	Fa	
	to support	E.g.	E.g.	
	learning	a) Self-assessment	a) Self-assessment	
		b) Peer-assessment c) Jury	b) Peer-assessment c) Jury, etc.	
		d) Appreciation and	C) July, etc.	
		Appraisal		
		e) Portfolio, etc.		
		ej Portjollo, etc.		
		3.6 Guide teachers to list and	3.6 List and discuss how the	
		discuss how the session	session makes use of ICT	
		makes use of ICT	resources to support	
		resources to support	relevant activities in the	
		relevant activities in the	NTS (NTS 3j).	
		NTS (NTS 3j).		
		E.g.	E.g.	
		a) Pre-recorded video	a) Pre-recorded video	
		b) Photographs,	b) Photographs,	
		c) OERs/internet facilities	c) OERs/internet facilities	
		d) Projectors, etc.		
		3.7 Ask one teacher to model	3.7 Ask one teacher to model	
		the sample lesson. (NTS	the sample lesson. (NTS 1f,	
		1f, 1c and 3a). (Extension	1c and 3a). (Extension	
		Activity)	Activity)	
Eval	uation and	4.1 Ask teachers to reflect	4.1 Reflect and brain-write	15 mins
revi	ew of session:	and brain-write what	what you have learnt in the	
		they have learnt in the	session (NTS 1a, 1b and 1f).	
•	Identifying	session (NTS 1a, 1b and		
;	and	1f).		
;	addressing			
	any	4.2 Ask them to share what	4.2 Share with the larger group	
	outstanding	they have learnt with the	(NTS 1e).	
	issues relating	larger group (NTS 1e).		
	to the		4011	
	lesson/s for	4.3 Remind teachers to	4.3 Identify a critical friend to	
'	clarification	identify a critical friend	observe you in teaching	
	Nation that	to observe them in	your lessons in relation to	
	Noting that	teaching their lessons as	PLC session 4 and provide	
	teachers need	they relate to PLC	feedback at the next PLC	
	to identify critical friends	session 4 and provide	session (NTS 1a,1e and 3l)	
	to observe	feedback at the next PLC		
	lessons and	session (NTS 1a, 1e and 3I).		
	report at next	) jij.		
	session	4.4 Remind teachers to read	4.4 Read Session 5 from the	
'	3333311	Session 5 from the PLC	PLC Handbook in	
		Handbook in preparation	preparation for the next	
		for the next session (NTS	session (NTS 3b).	
		3b).	(	
		J. J		

## **TVET PLC Session 5: Community of Practice**

#### **TVET Domains:**

- 1. Agriculture
- 2. Home Economics

3. Technical Skills			
1. Review of previous session and introduction to new lesson	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session  1.1 Ask teachers to share some of the successes and challenges in their lesson delivery after the PLC Session 4.	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.  1.1 Share your successes and challenges in their lesson delivery after the PLC session 4.	Time in session
NB The guidance for PLC Coordinator should identify, address, and provide explanations for any areas where teachers might require clarification on an aspect of the lesson.  NB PLC Coordinator should ask teachers to plan for their teaching as they go through the PLC	1.2 Ask a teacher to read NTS         1d, 1e, 1f and 1g. (Refer         teachers to Appendix B)         and tease out the         learning outcomes (LOs)         and learning indicators         (LIs) of the session with         colleagues (NTS 1d, 1e,         and 1f) and compare         these with the LOs and         LIs listed below.  LO 1: Demonstrate         knowledge and         understanding of the         legal and ethical         codes of conduct for         teachers and how         they guide teacher         behaviour.	<ul> <li>1.2 Read NTS 1d, 1e, 1f and 1g on the Community of Practice and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session for a discussion with colleagues (NTS 1 d, 1e, 1f and 1g) and compare these with the LOs and LIs listed below.</li> <li>LO 1: Demonstrate knowledge and understanding of the legal and ethical codes of conduct for teachers and how they guide teacher behaviour.</li> </ul>	
session	LI 1.1 State the code of ethics for teachers.  LI 1.2 Explain how the code of ethics guides teachers' practice, professional conduct and relationship with stakeholders.  LI 1.3 State the role of the head teacher in	LI 1.1 State the code of ethics for teachers.  LI 1.2 Explain how the code of ethics guides teachers' practice, professional conduct and relationship with stakeholders.  LI 1.3 State the role of the head teacher in enforcing the code of ethics.	

- enforcing the code of ethics.
- LI 1.4 Prepare and deliver a sample lesson reflecting teacher professional ethics, good conduct, and appropriate relationship with all learners within the context of GESI (NTS 1d, 2a).
- LO 2: Demonstrate knowledge and skill of engaging positively with all stakeholders (colleagues, learners, parents, school management committee (SMC), parent association and wider public) as an agent of change in a school's community of practice.
- LI 2.1 Identify at least three stakeholders within the school's community of practice.
- LI 2.2 Explain the role of stake holders in promoting a strong community of practice.
- LI 2.3 Explain the role of the teacher as an agent of change (NTS 1e, 1f and 1g).
- LO 3: Exhibit positive teacher identity by acting as a good role model for learners.
- LI 3.1 Identify at least three characteristics of a good teacher.
- LI 3.2 Explain how the attributes of a good

- LI 1.4 Prepare and deliver a sample lesson reflecting teacher professional ethics, good conduct, and appropriate relationship with all learners within the context of GESI (NTS 1d, 2a).
- LO 2: Demonstrate knowledge and skill of engaging positively with all stakeholders (colleagues, learners, parents, school management committee (SMC), parent association and wider public) as an agent of change in a school's community of practice.
- LI 2.1 Identify at least three stakeholders within the school's community of practice.
- LI 2.2 Explain the role of stake holders in promoting a strong community of practice.
- LI 2.3 Explain the role of the teacher as an agent of change (NTS 1e, 1f and 1g).
- LO 3: Exhibit positive teacher identity by acting as a good role model for learners.
- LI 3.1 Identify at least three characteristics of a good teacher.
- LI3.2 Explain how the attributes of a good teacher

	teacher promote a strong community of practice (NTS 1f, 1g).  1.3 Guide teachers to discuss	promote a strong community of practice (NTS 1f, 1g).  1.3 Discuss and relate the
	and relate the concept of community of practice to their various TVET domains (NTS 3a, 3c and 3e).	concept of community of Practice to the various TVET domains (NTS 3a, 3c and 3e).
	1.4 Ask teachers to identify other areas of community of practice that will enhance their teaching.	1.4 Identify other areas of community of practice that will enhance their teaching.
	E.g. Professional TVET Associations such as: a) Ghana Art Teachers Association (GATA) b) Ghana Home Economics Association (GHEA) c) Agriculture Educators and Trainers Association of Ghana (EATAG) d) Ghana National Association of Teachers (GNAT) e) National Association of Graduate Teachers (NAGRAT) f) Coalition of Concerned Teachers Ghana (CCT-	E.g. Professional TVET Associations such as: a) Ghana Art Teachers Association (GATA) b) Ghana Home Economics Association (GHEA) c) Agriculture Educator and Trainers Association of Ghana (EATAG) d) Ghana National Association of Teachers (GNAT), etc. (NTS 3m, 3n and 3o).
Give regard for misconceptions and stereotypes, GESI, ICT, 21 <sup>st</sup> century skills, etc.	GH), etc. (o). NTS 3m, 3n and 3  1.5 Ask teachers to identify possible misconceptions and stereotypes related to their various TVET lessons for the week (NTS 1a, 2e, 2f and 3m).	1.5 Identify possible misconceptions and stereotypes related to their various TVET lessons for the week (NTS 1a, 2e, 2f and 3m).
	E.g. Lesson topic for the week: Tools and materials Misconceptions a) Females cannot operate tractors and other farm equipment	E.g. Lesson topic for the week: Tools and materials Misconceptions a) Females cannot operate tractors and other farm equipment

- b) Females who operate heavy machinery cannot give birth c) SEN learners cannot operate machines, etc.
- b) SEN learners cannot operate machines, etc.
- 1.7 Guide teachers to discuss possible ways of mitigating these misconceptions and stereotypes in a TVET classroom using the concept of community of practice (NTS 1a, 2c, 2e, 2f, 3e and 3m).
- 1.7 Discuss possible ways of mitigating these misconceptions and stereotypes in a TVET classroom using the concept of community of practice (NTS 1a, 2c, 2e, 2f, 3e and 3m).

- a) Invite a female machine operator or a machine operator with SEN as role models and resource persons to interact with learners to dispel the misconception.
- E.g.

- b) Use pre-recorded videos of persons who have defied these stereotypes and operating various machines successfully in the society
- a) Invite a female machine operator or a machine operator with SEN as role models and resource persons to interact with learners to dispel the misconception.

- c. Take learners on an educational trip to a TVET enterprise to see at first-hand how females and persons with disability have overcome such stereotypes in real life situations, etc.
- b) Take learners on an educational trip to a TVET enterprise to see at first-hand how females and persons with disability have overcome such stereotypes in real life situations, etc.

- 1.8 Ask teachers in mixed gender groups (where possible) to list some 21<sup>st</sup> century skills (NTS 2c, 3e, 3g, 3j and 3k).
- 1.8 In mixed gender groups (if feasible) list some 21<sup>st</sup> century skills (NTS 2c, 3e, 3g, 3j and 3k).

	_	_	1
	E.g. a) Communication skills b) Collaboration c)Observation and enquiry skills d) Digital literacy e) Creativity, etc.	E.g. a) Communication skills b) Collaboration c) Observation and enquiry skills, etc.	
	1.9. Ask teachers to identify ways of incorporating ICT in their lesson (NTS 3j).	1.9. Identify ways of incorporating ICT in their lesson (NTS 3j).	
	E.g. a) Surf open educational resources (OERs) and other sources from the Internet for tools and how they are operated b) Simulate using smartboard and other ICT tools c) Teacher monitors learners in the workshop using CCTV cameras, etc.	E.g. a) Surf open educational resources (OERs) and other sources from the Internet for tools and how they are operated b) Simulate using smartboard and other ICT tools	
	1.10 Ask teachers to discuss possible activities they would adopt to develop the 21st century skills in their learners (NTS 3i, 3I).	1.10 Discuss possible activities you would adopt to develop the 21st century skills in your learners (NTS 3i, 3l).	
	E.g. a) Hands-on activities b) Group discussion c) Role play d) Fieldtrip e) Research/project, etc.	E.g. a) Hands-on actives b) Group discussion c) Role play d) Field trip	
2. Planning for teaching, learning and assessment activities for the lesson/s making links to the TVET	2.1 Ask teachers to discuss samples of their lesson plans in their various TVET domains based on the 2010 SHS Syllabus and link them to the concepts of LOs and Lis*	2.1 Discuss samples of your lesson plans in your various TVET domains based on the 2010 SHS Syllabus and link them to the concepts of LOs and LIs*	20 min
curriculum	Sample Lesson Topic in the TVET: The Production Process in Agriculture, Home Economics, Technical Skills and Visual Art.	Sample Lesson Topics in the TVET: The Production Process in Agriculture, Home Economics, Technical Skills and Visual Art.	

#### **Agricultural Science**

Sub-topic: Tools and Materials in Agriculture.

#### **Home Economics**

Sub-topic: Tools and Materials in Home Economics.

#### **Technical Skills**

Sub-topic: Tools and Materials for Technical Drawing.

#### Visual Art

Sub-topic: **Tools and Materials in Picture Making**(NTS 1a, 1e and 3a).

#### a) Lesson Objectives:

By the end of the lesson learners will be able to;

- list at least five tools and five materials for Agriculture, Home Economics, Technical Skills and Visual Art
- ii. demonstrate the proper use of simple tools in Agriculture, Home Economics, Technical Skills and Visual Art
- iii. describe how basic tools and materials in Agriculture, Home Economics, Technical Skills and Visual Art can be maintained and preserved
- iv. formulate simple
  safety rules in the
  use of tools and
  materials in
  Agriculture, Home
  Economics, Technical
  Skills and Visual Art,
  etc.

#### **Agricultural Science**

Sub-topic: Tools and Materials in Agriculture.

#### **Home Economics**

Sub-topic: Tools and Materials in Home Economics.

#### **Technical Skills**

Sub-topic: Tools and Materials Technical Drawing.

#### Visual Art

Sub-topic: **Tools and Materials** in **Picture Making** (NTS 1a, 1e and 3a).

#### a) Lesson Objectives:

By the end of the lesson learners will be able to;

- List some tools and materials for Agriculture, Home Economics, Technical Skills and Visual Art
- ii. demonstrate the proper use of simple tools in Agriculture, Home Economics, Technical Skills and Visual Art
- iii. describe how basic tools and materials in Agriculture, Home Economics, Technical Skills and Visual Art can be maintained and preserved
- iv. formulate simple safety rules in the use of tools and materials in Agriculture, Home Economics, Technical and Visual Art, etc.

#### b) Core Activities:

- i. Guide learners to list basic tools and materials in Agriculture, Home Economics, Technical Skills and Visual Art
- ii. Demonstrate or simulate the use of basic tools in Agriculture, Home Economics, Technical Skills and Visual Art using hands-on activity, smart board, YouTube videos or pre-recorded videos, etc.
- iii. Assist learners to try
  their hands at
  operating basic tools
  using basic
  instructional guides
  like flowchart,
  spidergram, etc.
- iv. Guide learners to formulate simple safety rules for the use, maintenance and preservation of tools and materials.

#### c) Evaluation:

Use question and answer, concept mapping, etc., to review the lesson.
\*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline.

- 2.2 Ask teachers to tease out the LOs and LIs from their sample lessons and compare them with the objectives.
- LO: Demonstrate the appropriate uses of tools and materials in Agriculture,

#### b) Core Activities:

- i. Guide learners to list basic tools and materials in Agriculture, Home Economics, Technical and Visual Art
- ii. Demonstrate or simulate the use of basic tools in Agriculture, Home Economics, Technical Skills and Visual Art using hands-on activity, smart board, YouTube videos or prerecorded videos, etc.
- iii. Assist learners to try
  their hands at
  operating some basic
  tools using basic
  instructional guides like
  flowchart, spidergram,
  etc.
- iv. Guide learners to formulate simple safety rules for the use, maintenance and preservation of tools and materials.

#### c) Evaluation:

Use question and answer,
concept mapping, etc., to
review the lesson.
\*Tease out the learning
outcomes and the learning
indicators from the sample
lesson plans outline.

- 2.2 Tease out the LOs and LIs from their sample lessons and compare them with the objectives.
- LO: Demonstrate the appropriate use of tools and materials in Agriculture, Home

		T	T	1
		Home Economics Technical	Economics Technical Skills and	
		Skills and Visual Art.	Visual Art.	
		LI 1 List the tools and	LI 1 List the tools and materials	
		materials in Visual Art,	in Visual Art, Technical	
		Technical Skills, Home	Skills, Home Economics,	
		Economics, and	and Agriculture	
		Agriculture		
		LI 2 State the uses of tools	LI 2 State the uses of tools and	
		and materials in Visual	materials in Visual Art,	
		Art, Technical Skills,	Technical Skills, Home	
		Home Economics, and	Economics, and	
		Agriculture	Agriculture	
		LI 3 Discuss ways of caring		
		and maintaining tools		
		and materials in		
		Agriculture, Home		
		Economics Technical		
		Skills and Visual Art		
		(NTS 3g, 3h and 3i).		
3.	Teaching,	3.1 Ask teachers to identify	3.1 Identify gaps in your lesson	30 mins
	learning and	gaps in their lesson	plans.	
	assessment	plans.		
		E.g.	E.g.	
>	Reading and	Possible gaps:	Possible gaps:	
	discussion of	a) Inadequate teaching and	a) Inadequate teaching and	
	the teaching	learning resources.	learning resources.	
	and learning	b) Non availability of	b) Non availability of	
	activities	workshops, model farms,	workshops, model farms,	
	noting,	kitchen, etc.	kitchen, etc.	
	addressing,	c) Inadequate time on the		
	and	school time table for		
	explaining	practical work		
	areas where	d) low morale among TVET		
	teachers may	student		
	require			
	clarification	3.2 Ask teachers to suggest	3.2 Suggest ways you can	
	Noting	ways they can apply	apply the concept of	
	opportunities	the concept of	community of practice to	
	for making	community of practice	resolve the possible gaps	
	explicit links	to resolve the possible	in their lesson plans (NTS	
	to the	gaps in their lesson	3a, 3b, 3c and 3d).	
	Secondary	plans (NTS 3a, 3b, 3c		
	School	and 3d).	Bassible Calutions	
~	Curriculum	Possible Solutions:	Possible Solutions:	
>	Noting	a) field trip to workshops	a) field trip to workshops in	
	opportunities for	in town to observe the	town to observe the real	
	-	real uses of tools and	uses of tools and	
	integrating:	materials.	materials.	

- **GESI** responsivenes s and ICT and 21st C skills
- Reading, discussion, and identification of continuous assessment opportunities in the lesson. **Each lesson** should include at least two opportunities to use continuous assessment to support student teacher learning
- Resources:

Links to the

- existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used.
- Consideration needs to be given to local availability and guidance on any power

- b) use local experts in your community of practice as resource person etc.
- c) use team teaching methods
- 3.3 Ask teachers to suggest alternative ways of delivering the sample lessons (NTS 3e, 3g).
- E.g. Use of:
- a) Pre-recorded video or YouTube videos
- b) Extended learning
- c) Demonstration or simulation
- d) Field trips/community walk
- Work-based learning etc. e)
- 3.4 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness, (NTS 3f, 3m).
- E.g.
- a) Classroom arrangement to facilitate effective learners' interaction
- b) Mixed ability/gender groupings to facilitate collaboration among learners
- c) Non-stereotype role-play to encourage all learners including SEN learners to participate in the learning process.
- d) Using positive feedback to learners especially female and SEN learners to motivate them to put up their best.
- e) Use of a local resource person who has defied stereotyping/stigma to succeed in TVET.

- b) use local experts in your community of practice as resource person etc. (NTS 3a, 3b, 3c and 3d).
- 3.3 Suggest alternative ways of delivering the sample lessons (NTS 3e, 3g).
- E.g. Use of:
- a) Video with discussion,
- b) Extended learning
- Demonstration or simulation etc.
- 3.4 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3m).
- E.g.
- a) Classroom arrangement to facilitate effective learners' interaction
- b) Mixed ability/gender groupings to facilitate collaboration among learners
- c) Non-stereotype role-play to encourage all learners including SEN to participate in the learning process, etc.

point
presentations
, TLM or other
resources
which need to
be developed
to support
learning

- 3.5 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices (NTS 3k, 3p).
- E.g.
- a) Assessment for learning
- b) Assessment as learning
- c) Project work
- d) Portfolio building
- 3.6 In groups, ask teachers to suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3p).
- E.g.
- a) Self-assessment
- b) Peer-assessment
- c) Jury
- d) Appreciation and Appraisal
- e) Portfolio, etc.
- 3.7 Guide teachers to discuss how the lesson makes use of ICT resources to support relevant activities in the sample lesson (NTS 3g, 3j).
  - E.g.
- a) Pre-recorded videos
- b) Photographs,
- c) OERs/internet facilities
- d) Projectors
- e) Smart boards
- f) Internet learning, etc.
- 3.8 Ask one teacher to model a teaching activity in the teaching activity in the sample lesson in any of the TVET domains taking due cognizance of the concept of community of

- 3.5 Discuss how the session is linked to the use of formative assessment tools and practices (NTS 3k, 3p).
- E.g.
- a) Assessment for learning
- b) Assessment as learning
- 3.6 In groups, suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3p).
- E.g.
  - a) Self-assessment
  - b) Peer-assessment
  - c) Jury, etc. (NTS 3k, 3p).
- 3.7 Discuss how the lesson makes use of ICT resources to support relevant activities in the sample lesson (NTS 3g, 3j).
- E.g.
- a) Pre-recorded videos
- b) Photographs
- c) OERs/internet facilities
- d) Projectors
- 3.8 Model a teaching activity sample lesson in any of the TVET domains taking due cognizance of the concept of community of practice (NTS 1d).

		practice (NTS 1d). (Extension Activity)	(Extension Activity)	
4.	Evaluation and review of session:	4.1 Ask teachers to reflect and brain-write what they have learnt in the session (NTS 1a, 1b and 1f).	4.1 Reflect and brain-write what you have learnt in the session (NTS 1a, 1b and 1f).	15 mins
	and addressing any outstanding issues relating		4.2 Share with the larger group (NTS 1e).	
>	to the lesson/s for clarification  Noting that teachers need to identify critical friends	4.3 Remind teachers to identify a critical friend to observe them in teaching their lessons in relation to PLC Session 5 and provide feedback at the next PLC session (NTS 1a, 1e and 3l).	4.3 Identify a critical friend to observe you in teaching your lessons in relation to PLC Session 5 and provide feedback at the next PLC session (NTS 1a, 1e and 3I).	
	to observe lessons and report at next session	4.4 Remind teachers to read Session 6 from the PLC Handbook in preparation for the next session (NTS 3b).	4.4 Read Session 6 from the PLC Handbook in preparation for the next session (NTS 3b).	

## TVET PLC Session 6: Knowledge of Educational Frameworks and Curriculum.

#### **TVET Domains:**

- 1. Agriculture
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Guidance notes on Leading	Guidance Notes on Teacher	Time in
	the session. What the PLC	Activity during the PLC	session
	Coordinator will have to say	Session. What teachers will do	
	during each stage of the	during each stage of the	
	session	session.	
1. Review of	1.1 Either use the story of	1.1 Either use the story of the	25 mins
previous	the 'Friendship of the	'Friendship of the Elephant	
session and	Elephant and the	and the mosquito' as an ice	
introduction	mosquito' as an ice	breaker or give an ice	
to new	breaker or invite a	breaker related to the topic	
session	teacher to give an ice	The friendship of the Elephant	
	breaker related to the	and the Mosquito	
NB The guidance	topic.	Long ago, the elephant and the	
for PLC	The friendship of the	mosquito were very good	
Coordinator	Elephant and the Mosquito	friends. They went to every	
should identify,	Long ago, the elephant and	place together.	
address, and	the mosquito were very good	One hot afternoon, they	
provide	friends. They went to every	decided to go fishing to while	
explanations for	place together.	away the time. After spending	
any areas where	One hot afternoon, they	the whole afternoon without a	
teachers might	decided to go fishing to while	catch, the elephant eventually	
require	away the time. After	had one.	
clarification on an	spending the whole	With great joy and excitement,	
aspect of the	afternoon without a catch,	he shouted out to his friend the	
lesson.	the elephant eventually had	mosquito, 'Ko Mosquito, I have	
	one.	caught a big fish'.	
NB PLC	With great joy and	The mosquito who was then	
Coordinator	excitement, he shouted out	busy chasing some humans for	
should ask	to his friend the mosquito,	a bite, replied his friend the	
teachers to plan	'Ko Mosquito, I have caught a	elephant, 'really?' 'Ko Elephant,	
for their teaching	big fish'.	is your catch as big as my leg'?	
as they go	The mosquito who was then	The elephant was	
through the PLC	busy chasing some humans	dumbfounded and angered at	
session	for a bite, replied his friend	the mosquito's sense of size.	
	the elephant, 'really?' 'Ko	'How could I call a thing as	
	Elephant, is your catch as big	small as your leg, which I can't	
	as my leg'?	even see, as big?' 'What a	
	The elephant was	disgusting description', queried	
	dumbfounded and angered	the Elephant. A hot argument	
	at the mosquito's sense of	then ensued between them	
	size. 'How could I call a thing	which eventually broke their	
	as small as your leg, which I	long-time friendship,	

can't even see, as big?' 'What a disgusting description', queried the Elephant. A hot argument then ensued between them which eventually broke their long-time friendship.

#### Ask teachers to:

- a) Identify the concept of 'big' and small' as was seen by the mosquito and the elephant
- b) Speak to the danger of limiting one's judgement to only one's horizon?
- c) Suggest how the two friends could have learnt from each other?
- d) Relate this story to the ideas behind the PLC concept (NTS 2c, 2d and 3c).
- 1.2 Ask teachers to share some of the successes and challenges they had in their lesson last week (NTS 1a, 1e).
- 1.3 Ask a teacher to read NTS
  2a, 2b, 2c and 2d on the
  Knowledge of
  Educational Frameworks
  and Curriculum in the
  NTS and tease out the
  learning outcomes (LOs)
  and learning indicators
  (LIs) of the session and
  compare these with the
  LOs and LIs listed below.
  - LO 1: Demonstrate knowledge and understanding of the school curriculum and its learning outcomes.

#### Ask teachers to:

- a) Identify the concept of 'big' and small' as was seen by the mosquito and the elephant
- b) Speak to the danger of limiting one's judgement to only one's horizon?
- c) Suggest how the two friends could have learnt from each other?
- 1.2 Share any successes and challenges you had in your last lesson last week (*NTS* 1a, 1e).
- 1.3 Read NTS 2a, 2b, 2c and 2d on the Knowledge of Educational Frameworks and Curriculum and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session and compare these with the LOs and LIs listed below.
  - LO 1: Demonstrate knowledge and understanding of the secondary school curriculum and its learning outcomes.

- LI 1.1 State the pedagogies prescribed for the delivery of the secondary school curriculum.
- LI 1.2 Discuss the implication(s) of the prescribed pedagogies in LI 2.2 on teaching and learning.
- LI 1.3 Give examples of learning outcomes in any subject area.
- LO 2: Exhibit content knowledge, pedagogical knowledge and pedagogical content knowledge for the grade taught.
- LI 2.1Explain the concept of:
- a) Content knowledge (CK)
- b) Pedagogical knowledge (PK)
- c) Pedagogical content knowledge (PCK)
- LI 2.2 Explain the relationship between the three concepts as in a, b, and c.
- LI 2.3 Describe how pedagogical content knowledge will help in lesson preparation and delivery (NTS 2b, 2c)
- 1.4 Ask teachers to identify and discuss how TVET knowledge and skills (as it relates to the various domains) are articulated within the Educational Frameworks and

- LI 1.1 State the pedagogies prescribed for the delivery of the secondary school curriculum.
- LI 1.2 Discuss the implication(s) of the prescribed pedagogies in LI 2.2 on teaching and learning.
- LI 1.3 Give examples of learning outcomes in any subject area.
- LO 2: Exhibit content knowledge, pedagogical knowledge and pedagogical content knowledge for the school and grade taught
- LI 2.1Explain the concept of:
  - a) Content knowledge (CK)
  - b) Pedagogical knowledge (PK)
  - c) Pedagogical content knowledge (PCK)
- LI 2.2 Explain the relationship between the three concepts as in a, b, and c.
- LI 2.3 Describe how pedagogical content knowledge will help in lesson preparation and delivery (NTS 2b, 2c).
- 1.4 Identify and discuss how TVET knowledge and skills (as it relates to the various domains) are articulated within the Educational Frameworks and Curriculum (NTS 1a, 2b and 2d).

Curriculum (NTS 1a, 2b and 2d).

#### E.g.

- a) TVET domains concentrate on hands-on activities
- b) TVET curriculum promotes inter domain activities
- Assessment of TVET activities is based on competencies
- d) TVET curriculum promotes competencybased teaching
- 1.5 Ask teachers to explain the concept of:
  - a) Content knowledge (CK)
  - b) Pedagogical knowledge (PK)
  - c) Pedagogical content knowledge (PCK)

#### E.g.

- a) CK describes knowledge of subject matter
- b) PK describes how the content can be taught
- c) PCK describes subject specific pedagogical knowledge
- 1.6 Ask teachers to describe how pedagogical content knowledge will help in lesson preparation and delivery (NTS 2b, 2c).

#### E.g.

- a) CK helps the teacher to present same aspects of the content in different ways to support differentiation
- b) CK allows the teacher to get learners to work on content before the lesson
- c) CK helps teachers to put learners in ability groups

#### E.g.

- a) TVET domains concentrate on hands-on activities
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  - b) Pedagogical knowledge (PK)
  - c) Pedagogical content knowledge (PCK)

#### E.g.

- a) CK describes knowledge of subject matter
- b) PK describes how the content can be taught
- 1.6 Describe how pedagogical content knowledge will help in lesson preparation and delivery (NTS 2b, 2c).

- d) CK helps the teacher to present same aspects of the content in different ways to support differentiation
- e) CK allows the teacher to get learners to work on content before the lesson

Give regard for misconceptions and stereotypes, GESI, ICT, 21<sup>st</sup> century skills, etc.

- 1.7 Ask teachers to identify possible misconceptions and stereotypes in their various TVET lesson topics for the week (NTS 2f, 3f and 3m).
- 1.7 Identify possible misconceptions and stereotypes in the various TVET lesson topics for the week (NTS 2f, 3f and 3m).

E.g.

Lesson Topic: Career Opportunities in:

- a) Agriculture
- b) Home Economics
- c) Technical Skills
- d) Visual art

E.g. Lesson Topic: Career Opportunities in:

- a) Agriculture
- b) Home Economics
- c) Technical Skills
- d) Visual art

Possible misconceptions and stereotypes

- a) Agriculture careers are not a profession for learned people
- b) Home Economics: career opportunities are reserved for females
- c) Technical Skills: Persons with disability cannot go into Technical Skills careers
- d) Visual Art: some careers in Visual Arts are the preserve of males.
- 1.8 Guide teachers to discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 1a, 2f, 3a, 3g, 2j and 3e).

E.g.

- a) Invite role models or resource persons that have overcome these stereotypes and have achieved successes in the TVET domains in the community
- b) Prepare and use prerecorded videos of persons who have defied

Possible misconceptions and stereotypes

- a) Agriculture careers are not a profession for learned people.
- b) Home Economics: career opportunities are reserved for females
- c) Technical Skills: Persons with disability cannot go into Technical Skills careers.
- 1.8 Discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 1a, 2f, 3a, 3g, 2j and 3e).

- a) Invite role models/resource persons that have overcome these stereotypes and have achieved successes in the TVET domains in the community
- b) Use a pre-recorded videos of persons who have defied these stereotypes and have

- these stereotypes and have achieved successes in the society
- c) Do a community walk to expose learners to the contribution of TVET to the society
- d) Organize field trip to institutions for learners to observe and interact with people in diversity of TVET professions.
- 1.9 In mixed gender groupings (where possible) ask teachers to list some 21<sup>st</sup> century skills and share with the whole group (NTS 2c 3a).
- E.g.

communication skills, collaboration skills, observation and enquiry skills, digital literacy, creativity and personal development.

1.10 Ask teachers to identify ways of incorporating ICT in their lesson (NTS 1a, 3j).

E.g.

- a) Surf Open Educational Resources (OERs) and other Internet sources for information on knowledge of educational frameworks and curriculum.
- b) Teach using PowerPoint presentations
- c) Employ computer software such AutoCAD, Photoshop, Coral Draw, Paint, etc.
- d) Teacher interacts and monitors learners' extended learning via electronic or social media

- achieved successes in the society or
- c) Do a community walk to expose learners to the contribution of TVET to the society
- 1.9 In mixed gender groupings (if feasible) list some 21<sup>st</sup> century skills and share with the whole group (NTS 2c 3a).
- E.g.
  communication skills,
  collaboration, observation
  and enquiry skills, digital
  literacy, creativity and
  personal development.
- 1.10 Identify ways of incorporating ICT in your lesson (NTS 1a, 3j).

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  educational frameworks
  and curriculum.
- b) Teach using PowerPoint presentations
- c) Employ computer software such AutoCAD, Photoshop, Coral Draw, Paint, etc.

		-1.16		
		platforms, e.g., Zoom, etc.		
		e) Learners submit their		
		assignments		
		electronically through		
		E-mails, telegram,		
		WhatsApp, etc.)		
		1.11 Ask teachers to discuss possible activities they would adopt to develop the 21st century skills in their learners such as communication skills, collaboration skills, observation and enquiry skills, digital literacy, creativity and personal development skills (NTS 3e, 3h and 3j).	1.11 Discuss possible activities you would adopt to develop the 21 <sup>st</sup> century skills in their learners such as communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development skills (NTS 3e, 3h and 3j).	
		E.g. a) Learners to do group	E.g. a) Learners to do group	
		PowerPoint presentations to facilitate digital literacy, collaborative skills, etc.	PowerPoint presentations to facilitate digital literacy, collaborative skills, etc.	
		b) Project and research to encourage observation, enquiry skills, personal development skills, etc.	b) Project and research to encourage observation, inquiry skills, personal development skills, etc.	
		c) Role-play to develop leadership skills	c) Role-play to develop leadership	
		d) Hands-on activities to facilitate creativity, etc.	·	
2	Planning for	2.1 Ask teachers to discuss	2.1 Discuss samples of your	20 mins
	teaching,	samples of their lesson	lesson plans in your various	
	learning and	plans in their various	TVET domains based on the	
	assessment	TVET domains based on	2010 SHS syllabus and link	
	activities for	the 2010 SHS syllabus	them to the concept of	
	the lesson/s	and link them to the	Knowledge of Educational	
	making links	concept of Knowledge of	Frameworks and	
	to the TVET	Educational Frameworks	Curriculum*.	
	curriculum	and Curriculum*.		
		Sample Lesson Topics in the TVET domain: Topic: Scope and importance of: Agriculture, Home Economics, Technical Skills	Sample Lesson Topics in the TVET domain: Topic: Scope and importance of: Agriculture, Home Economics, Technical Skills and	
		and Visual Art.	Visual Art.	
L		and visualities	11044171111	<u> </u>

Sub-topic: Career opportunities in Agriculture, Home Economics, Technical Skills and Visual Art.

**a) Objectives for the lesson**: By the end of the lesson, the learner will be able to:

- i. Mention at least five career opportunities in Agriculture, Technical skills, Home Economics, and Visual Art
- ii. List the qualifications needed for entry into the career opportunities mentioned in i. above
- iii. State their career preferences.

#### b) Core Activities

- i. Surf OERs and other sources on the Internet to discover career opportunities in Agriculture, Home Economics, Technical Skills and Visual Art
- ii. Discuss qualifications needed for assessing career opportunities in Agriculture, Home Economics, Technical Skills and Visual Art
- iii. Invite a career expert in TVET to interact with learners
- iv. Discuss the career preferences of learners in relation to their capabilities and desires.

#### c) **Evaluation**:

Use question and answer method to evaluate the lesson

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- iv. Discuss the career preferences of learners in relation to their capabilities and desires.

#### c) **Evaluation**:

Use question and answers to evaluate the lesson

		*Teachers would be guided	*Teachers would be guided to	
		to tease out the learning	tease out the learning	
		outcomes and learning	outcomes and learning	
		indicators from sample lesson	indicators from sample lesson	
		plan	plan	
		2.2 Ask teachers to tease out the LOs and the LIs from their sample lesson plans.	2.8 Tease out the LOs and the LIs from your sample lesson plans.	
		E.g. LO: Demonstrate Knowledge and understanding of the different career opportunities in Agriculture, Technical skills, Home Economics, and Visual Art.	E.g. LO: Demonstrate Knowledge and understanding of the different career opportunities in Agriculture, Technical skills, Home Economics, and Visual Art.	
		LI 1.1 Mention at least five career opportunities in Agriculture, Home Economics, Technical skills and Visual Art.	LI 1.1 Mention at least five career opportunities in Agriculture, Home Economics, Technical skills and Visual Art.	
		LI 1.2 Discuss the requirements that are needed for the various career opportunities in Agriculture, Home Economics, Technical skills and Visual Art.	LI 1.2 Discuss the requirements that are needed for the various career opportunities in Agriculture, Home Economics, Technical skills and Visual Art.	
		LI 1.3 State the benefit of the various career opportunities to the individual and the nation at large (NTS 3a).		
3	Teaching,	3.1 Guide teachers to identify	3.1 Identify gaps in your	30 mins
	learning and	gaps in their lesson plans	lesson plans (if any) and use	
	assessment	(if any) and use their	your knowledge of the	
	Dooding and	knowledge of the	secondary school curriculum	
	Reading and discussion of	secondary school curriculum to resolve	to resolve them (NTS 1a, 1c).	
	the teaching	them (NTS 1a, 1c).		
	and learning	them (WIS 10, 10).		
	activities	E.g.	E.g.	
	noting,	Possible gaps:	Possible gaps:	
	addressing,	a) Unsuitable teaching	a) Unsuitable teaching	
	and	methods.	methods	
	explaining		b) Inadequate teaching and	
	areas where		learning resources, etc.	

- teachers may require clarification
- Noting opportunities for making explicit links to the Secondary School Curriculum
- Noting opportunities for integrating: GESI responsivenes s and ICT and 21st C skills
- Reading, discussion, and identification of continuous assessment opportunities in the lesson. **Each lesson** should include at least two opportunities to use continuous assessment to support student teacher **learning**
- > Resources:
- Links to the existing PD Themes, for example, action research, questioning and to other external reference material:

b) Inadequate teaching and learning resources, etc.

#### Possible Solution:

- a) Make efficient use of pedagogical content knowledge to select appropriate methods of teaching, e.g.
  Drama or role-play, video show to depict various career opportunities
- b) Use field trips to relevant industries in town or beyond to observe the real application of the careers.
- c) Use local experts in the community as resource persons,
- d) Explore other domains of the educational framework and curriculum to adopt and adapt suitable alternatives to resolve the challenge of inadequate resources.
- 3.2 Ask teachers to suggest alternative ways of delivering the sample lessons (NTS 3f, 3j).

#### E.g. use of:

- a) Pre-recorded video to show variety of career opportunities
- b) Library or/and Internet research to read about career opportunities
- b) Field trips to see at first hand career opportunities
- c) Community walk to expose learners to career opportunities in their immediate community

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- c) Community walk to expose learners to career opportunities in their immediate community

- literature, on web, YouTube, physical resources, power point; how they should be used.
- Consideration needs to be given to local availability guidance on any power point presentations , TLM or other resources which need to be developed to support learning
- d) Use of Career mentors to avail the learners' opportunity to interact at first hand and to ask pertinent questions to remove doubt, fear, uncertainty, stereotypes and misconceptions
- e) Use of Career assessment tests to provide scientific bases for the learners preferred careers, etc.
- 3.3 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness (NTS 2f, 3f, 3g and 3h).

E.g.

- a) Classroom arrangement to facilitate better learner to learner interaction as well as easy teacher assess to learners
- b) Mixed ability and/or gender groupings to ensure GESI compliance
- c) Non-stereotype roleplays to overcome limitations placed on learners due to misconceptions and stereotypes
- d) Using positive feedback to learners especially female and SEN learners to encourage them to do their best in all circumstances
- e) Use of local career mentors as resource persons who have defied stereotyping and stigma to succeed in TVET to instil the 'I can do' spirit among learners
- f) Use of a variety of talk for learning techniques such as, think-pair-share,

3.3 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 2f, 3f, 3g and 3h).

- a) Classroom arrangement to facilitate better learner to learner interaction as well as easy teacher assess to learners
  - b) Mixed ability and/or gender groupings to ensure GESI compliance
  - c) Non-stereotype role-plays to overcome limitations placed on learners due to misconceptions and stereotypes
  - d) Using positive feedback to learners especially female and SEN learners to encourage them to do their best in all circumstances.

- brainstorming, reversebrainstorming, brainwriting, discussions, etc. to facilitate healthy communication among all learners irrespective of gender or ability.
- 3.4 Ask teachers to discuss how the session is linked to the use of formative assessment tools and practices.
- a) Learners to self and peer review or assess their work
- Seminar to solicit wider community views and appreciation of learners' concept of TVET career opportunities and their preferred choices
- c) Portfolio and reflective journals for selfassessment to develop intrinsic motivation for self-improvement, etc.
- 3.5 In groups, ask teachers to suggest authentic summative assessment methods that could be used in the sample lesson (NTS 2e, 3k, 3l and 3o).

- a) Develop a check list indicating stages of the activity
- b) Identify skill(s) that must be acquired
- c) Determine scores for each stage depending on the complexity of the skill
- d) Completed artefact must be scored on the following criteria:
  - i. Evidence of Preliminary/idea development process

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- a) Develop a check list indicating stages of the activity
- b) Identify skill(s) that must be acquired
- c) Determine scores for each stage depending on the complexity of the skill
- d) Completed artefact must be scored on the following criteria:
  - i. Evidence of Preliminary/idea

- ii. Appropriate use of tools/material
- iii. Draft/craftsmanship
  (Compositionappropriate use of
  principles and
  elements of design,
  Colour and tone, etc.
  for 2-D works)
- iv. Originality
- 3.6 Ask teachers to discuss how the use of ICT resources supports the delivery of the secondary school TVET curriculum (NTS 3j).

- a) Pre-recorded videos that bring near life experience of career opportunities to learners
- b) Photographs of relevant scenes also provide quite vivid picture of what to expect in real life as far as TVET career opportunities are concerned
- OERs/Internet facilities provide a wider range of possibilities for the learner
- d) Projectors, computers and software facilitate effective and efficient illustrations making learning more meaningful.
- 3.7 Ask one teacher to model a teaching activity in the sample lesson in any of the TVET domains (NTS 1c, 1f and 3a). (Extension Activity)

- development process
- i. Appropriate use of tools/material
- ii. Draft/craftsmanshi
   p (Composition appropriate use of
   principles and
   elements of design,
   Colour and tone,
   etc. for 2-D works)
- iii. Originality
- 3.6 Discuss how the use of ICT resources to support the delivery of the TVET curriculum (NTS 3j).

E.g.

- a) Pre-recorded videos that bring near life experience of career opportunities to learners
- b) Photographs of relevant scenes also provide quite vivid picture of what to expect in real life as far as TVET career opportunities are concerned
- OERs/Internet facilities provide a wider range of possibilities for the learner

3.7 Model a teaching a teaching activity in the sample lesson in any of the TVET domains (NTS 1c, 1f and 3a).
(Extension Activity)

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4	Evaluation	4.1 Ask teachers to brain-	4.1 Brain-write what they have	15 mins
	and review of	write what they have	learnt in the session (NTS	
	session:	learnt in the session (NTS	1a, 1b, 1e and 1f).	
$\triangleright$	Teachers	1a, 1b, 1e and 1f).		
	need to	4.2 Ask them to share what	4.2 What they have written	
	identify	they have written with	with the larger group (NTS 1e).	
	critical friends	the larger group ( <i>NTS</i>		
	to observe	1e).		
	lessons and			
	report at next	4.3 Ask teachers to ask any	4.3 Ask questions on any issue	
	session	further questions for	that need further	
>	Identifying	clarification.	clarification.	
	and			
	addressing	4.4 Remind teachers to	4.4 Identify a critical friend to	
	any	identify a critical friend	observe you in teaching	
	outstanding	to observe them in	your lessons in relation to	
	issues relating	teaching their lessons in	PLC session 6 and provide	
	to the	relation to PLC Session 6	feedback at the next PLC	
	lesson/s for	and provide feedback at	Session (NTS 1a, 1e and 3I).	
	clarification	the next PLC session		
		(NTS 1a, 1e and 3I).		
		4.5 Remind teachers to read	4.5 Read Session 7 from the	
		Session 7 from the PLC	PLC Handbook in	
		Handbook in preparation	preparation for the next	
		for the next session (NTS	session ( <i>NTS 3b).</i>	
		3b).		

# **TVET PLC Session 7: Knowledge of Learners.**

NB. TVET Domains:

- 1. Agriculture
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to	1.1 Invite a teacher to share an ice breaker related to the topic.	1.1 Share an ice breaker related to the topic.	25 mins
new session	1.2. Ask teachers and critical friends to share their	1.2. Share your views on the usefulness of the previous	
NB The guidance for PLC Coordinator should identify, address, and	views on the usefulness of the previous PLC sessions in their lesson delivery.	PLC sessions in your lesson delivery.	
provide explanations for any areas where teachers might require clarification on an aspect of the lesson.  NB PLC Coordinator	1.3 Ask a teacher to read NTS 2 (e and f) on the Knowledge of Learners of the NTS and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session and compare them with the LOs and LIs listed below. (NTS 2d, 2f).	1.3 Read NTS 2 (e and f) on the Knowledge of Learners of the NTS teachers to Appendix E and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session and compare them with the LOs and LIs listed below (NTS 2d, 2f).	
should ask teachers to plan for their teaching as they go through the PLC session	LO 1: Demonstrate the understanding of how learners learn in diverse contexts and apply this in teaching.	LO 1: Demonstrate the understanding of how learners learn in diverse contexts and apply this in teaching	
	LI 1.1 Identify different contexts in which learners learn.	LI 1.1 Identify different contexts in which leaners learn.	
	LI 1.2 Identify and discuss the appropriate methods of teaching learners at different	LI 1.2 Identify and discuss the appropriate methods of teaching learners at	

- developmental stages.
- LO 2: Demonstrate
  knowledge and skills
  in harmonizing and
  directing learners
  varied cultural,
  linguistic, socioeconomic and
  educational
  backgrounds in their
  planning and teaching.
- different developmental stages.
- LO 2: Demonstrate knowledge and skills in harmonizing and directing learners varied cultural, linguistic, socio-economic and educational backgrounds in their planning and teaching.
- LI 2.1 Identify at least four possible cultural and linguistic backgrounds found in Ghanaian Senior High Schools.
- LI 2.1 Identify at least four possible cultural linguistic and backgrounds found in Ghanaian Senior High Schools,
- LI 2.2 Discus at least three learning approaches/styles that facilitates learning among learners from varied cultural, linguistic, socio-economic and educational backgrounds.
- LI 2.2 Discus at least three learning approaches/styles that facilitates learning among learners from varied cultural, linguistic, socio-economic and educational backgrounds.
- LO 3: Demonstrate knowledge and understanding of GESI issues.
- LO 3: Demonstrate knowledge and understanding of GESI issues.
- LI 3.1 Mention at least five GESI related issues in learning.
- LI 3.1 Mention at least five GESI related issues in learning.
- LI 3.2 Outline the need for incorporating GESI issues in classroom.
- LI 3.2 Outline the need for incorporating GESI issues in classroom.
- 1.4 Ask teachers to discuss how they can help learners relate concepts from the varied cultural, linguistic, socioeconomic and
- 1.4 Show you can help learners relate concepts from the varied cultural, linguistic, socio-economic and educational backgrounds to

educational the learning of TVET (NTS backgrounds to the 2f). learning of TVET (NTS 2f). E.g. E.g. a) Incorporating traditional Incorporating traditional symbols into designs symbols into designs b) Identifying possible science behind some indigenous beliefs/taboos c) Incorporate some good indigenous practices into the formal sector. 1.5 Ask teachers to identify 1.5 Ask teachers to identify different learning styles different learning styles of of learners that will learners that will enhance enhance teaching in the teaching of their subjects (NTS 2e, 2f, 3e and 3g). TVET domains (NTS 2e, 2f, 3e and 3g). E.g. E.g. e) Auditory learning a) Tactile learning f) Kinesthetic learning b) Visual learning g) Tactile learning h) Visual learning 1.6 Ask teachers to identify 1.6 Identify other related areas on knowledge of learners other related areas on that will enhance the knowledge of learners that will enhance the delivery of the TVET delivery of the TVET curriculum (NTS 2e, 2f and curriculum (NTS 2e, 2f 3m). and 3m). E.g. E.q. Learner's educational a) Learner's cultural background background b) Learner's educational background c) Learner's socio-economic background, etc. 1.7 Identify at least four 1.7 Identify at least four

possible cultural and

linguistic backgrounds

High Schools that can

found in Ghanaian Senior

possible cultural and

found in Ghanaian

linguistic backgrounds

Senior High Schools that

	can influence the learning of TVET subject	influence the learning of TVET subject	
	E.g.  a) Learners from different cultures are exposed to different artefacts such as those in urban areas using gas stoves for cooking while those in rural areas using wood fir cooking  b) Learners from wealthy home are more fluent in English language than those from poor homes  c) Learners from farming communities are more likely to succeed in the study of agricultural science than those from urban areas	E.g. Learners from different cultures are exposed to different artefacts such as those in urban areas use gas stoves for cooking while those in rural areas use wood for cooking	
Give regard for misconceptions and stereotypes, GESI, ICT, 21st century skills, etc.	1.8 Ask teachers to identify possible misconceptions and stereotypes in their various TVET lesson topics for the week (NTS 3m).	1.8 Identify possible misconceptions and stereotypes in your various TVET lesson topics for the week (NTS 3m).	
	E.g. Lesson Topic: Work ethics in: a) Agriculture b) Home Economics c) Technical Skills d) Visual art	E.g. Lesson Topic: Work ethics in: a) Agriculture b) Home Economics	
	Possible misconceptions and stereotypes  a) TVET is reserved for people with little intellectual endowment hence they can't set targets and attain them  b) TVET does not give learners good work opportunities and social status.  c) TVET is not important because	Possible misconceptions and stereotypes  a) TVET is reserved for people with little intellectual endowment hence they can't set targets and attain them.  b) TVET does not give learners good work opportunities and social status.	

- its contribution to the economy of Ghana is insignificant.
- d) Persons with disability cannot perform well in TVET education.
- 1.9 Guide teachers to discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 3e, 3f and 3m).

1.9 Discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 3e, 3f and 3m).

E.g.

- a) Invite role
  models/resource
  persons that have
  overcome these
  stereotypes and
  have achieved
  successes in their
  respective TVET
  domains within the
  society.
- b) Prepare/Use prerecorded videos of persons who have defied these stereotypes and have achieve successes in the society
- c. Do community walk to expose students to the contribution of TVET to society
- d. Organize field trips to institutions for students to observe diversity in professions.
- e. Launch awareness campaigns
- 1.10 Ask teachers in mixed gender groupings (where possible) to list

E.g.

- a) Invite role models/resource persons that have overcome these stereotypes and have achieved successes in their TVET domains within the society
- b) Use a pre-recorded videos of persons who have defied these stereotypes and have achieve successes in the society
- c. Do community walk to expose students to the contribution of TVET to society

1.10 In mixed gender groupings (if feasible) list

some 21<sup>st</sup> century skills (NTS 3j).

E.g.
communication skills,
collaboration,
observation and enquiry
skills, digital literacy,
creativity and personal
development.

1.11 Ask teachers to identify ways of incorporating ICT in their lesson (NTS 3j).

E.g.

- a) Surf open
  educational
  resources (OERs) and
  other internet
  sources for
  information.
- b) Teach using PowerPoint presentation.
- c) Employ computer software such AutoCAD, Photoshop, Coral Draw, Paint, etc. to teach.
- d) Teacher interacts and monitor students' extended learning via social media platforms
- e) Students submit their assignments through email, etc.
- 1.12 Ask teachers to discuss possible activities they would adopt to develop the 21st century skills in their learners such as communication skills, collaboration, observation and enquiry skills, digital literacy,

some 21<sup>st</sup> century skills (NTS 3j).

E.g.
communication skills,
collaboration, observation
and enquiry skills, digital
literacy, creativity and
personal development.

1.11 Identify ways of incorporating ICT in your lesson (NTS 3j).

E.q.

- a) surf open educational resources (OERs) and other internet sources for information.
- b) teach using PowerPoint presentation
- c) employ computer software such AutoCAD, Photoshop, Coral Draw, Paint, etc. to teach.

1.12 Discuss possible activities you would adopt to develop the 21st century skills in your learners such as communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development (NTS 3a, 3e, 3h and 3j).

				1
		creativity and personal		
		development (NTS 3a,		
		3e, 3h and 3j).		
		E.g.	E.g.	
		a) Learners doing	a) Learners doing PowerPoint	
		PowerPoint	presentations in groups.	
			presentations in groups.	
		presentations in groups.	the Business (see a see	
		b) Project/research	b) Project/research	
		c) Role-play	c) Role-play	
		d) Hands-on activities in		
		TVET paying attention to		
		work ethics		
		e) Panel presentations		
2	Planning for	2.1 Ask teachers to discuss	2.1 Discuss samples of your	20 mins
	teaching,	samples of their lesson	lesson plans in your various	
	learning and	plans in their various	TVET domains based on the	
	assessment	TVET domains based on	2010 SHS Syllabus and link	
	activities for	the 2010 SHS Syllabus	them to the concepts of	
	the lesson/s	and link them to the	LOs and Lis*	
	with links to		LOS and Lis	
		concepts of LOs and		
	the TVET	LIs*		
	curriculum			
		Sample Lesson Topics in the	Sample Lesson Topics in the	
		TVET domain:	TVET domain:	
		Sub-topic: Work ethics in	Sub-topic: Work ethics in	
		Agriculture Home	Agriculture Home Economics,	
		Economics, Technical skills	Technical skills and Visual Art	
		and Visual Art		
		a) Objectives	a) Objectives	
		By the end of the lesson	By the end of the lesson	
		learners will be able to;	learners will be able to;	
		i. Explain the concept	i. Explain the concept	
		work ethics as it	work ethics as it	
		pertains to TVET.	pertains to TVET.	
		ii. State at least four	ii. State at least four work	
		work ethics in	ethics in Agriculture	
		Agriculture Home	Home Economics,	
			Technical skills and	
		Economics,		
		Technical skills and	Visual Art.	
		Visual Art.	iii. Discuss qualities that	
		iii. Discuss qualities	promote good work	
		that promote good	ethics in Agriculture	
		work ethics in	Home Economics,	
		Agriculture Home	Technical skills and	
		Economics,	Visual Art.	
		Technical skills and		
		Visual Art.		

#### b) Core activities

- Guide learners in groups to explain the concept of work ethics.
- ii. Guide learners to identify and discuss in mixed ability/gender groups, what constitutes bad work ethic in TVET.
- iii. Guide learners to discuss the qualities that promote good work ethics in groups.

## c) Evaluation

- Evaluate the lesson by using question and answer method.
- ii. In groups, assign learners to visit any local workshop in the community to observe their work ethics and report.
- \*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline. LO: Demonstrate Knowledge
- and understanding of work ethics in Agriculture, Home Economics, Technical Skills and Visual Art.
- LI 1.1 Explain work ethics in Agriculture, Home Economics, Technical Skills and Visual Art.

E.g.

Work ethics is a set of standards of behaviour and beliefs regarding what is and is not acceptable to do at

#### b) Core activities

- Guide learners in groups to explain the concept of work ethics.
- ii. Guide learners to identify and discuss in mixed ability/gender groups, what constitutes bad work ethic in TVET.
- iii. Guide learners to discuss the qualities that promote good work ethics in groups.

## c) Evaluation

- i. Evaluate the lesson by using question and answer method.
- ii. In groups, assign
  learners to visit any
  local workshop in the
  community to observe
  their work ethics and
  report.
- \* Tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- LO: Demonstrate Knowledge and understanding of work ethics in Agriculture, Home Economics, Technical Skills and Visual Art.
- LI 1.1 Explain work ethics in Visual Agriculture, Home Economics, Technical Skills and Visual Art
- LI 1.2 Identify and discuss qualities that promote good work ethics in Agriculture, Home Economics, Technical Skills and Visual Art.

				1
		work as it relates to		
		the various TVET		
		domains.		
		Ref.		
		https://www.valamis.c		
		om		
		LI 1.2 Identify and discuss		
		qualities that promote		
		good work ethics in		
		_		
		Agriculture, Home		
		Economics, Technical		
		Skills and Visual Art.		
3	Teaching,	3.1 Guide teachers to	3.1 Identify gaps in your lesson	30 mins
	learning and	identify gaps in their	plans (if any) and use your	
	assessment	lesson plans (if any) and	knowledge of educational	
		use their knowledge of	framework and curriculum	
>	Reading and	learners' varied	to resolve them (NTS 1a, 2c,	
	discussion of	background to resolve	2e and 2f).	
	the teaching	them (NTS 1a, 2c, 2e and		
	and learning	2f).		
	activities	E.g.	E.g.	
	noting,	Possible gaps:	Possible gaps:	
	addressing,	a) absence of	a) absence of differentiated	
	and explaining	differentiated	teaching/learning	
	areas where	teaching/learning	methods	
	teachers may	methods	b) inadequate teaching and	
	require	b) inadequate teaching	learning resources, etc.	
	clarification	and learning	learning resources, etc.	
>		<u> </u>		
	Noting	resources, etc.	Passible Solution	
	opportunities	Possible Solution:	Possible Solution:	
	for making	a) Teachers' lesson plan	a) Teachers' lesson plan	
	explicit links to	should show variety of		
	the Secondary	teaching and learning	teaching and learning	
	School	strategies appropriate	strategies appropriate	
	Curriculum	for learners with	for learners with	
>	Noting	different abilities.	different abilities.	
	opportunities	b) improvisation (use of	b) improvisation (use of	
	for integrating:	available local tools	available local tools and	
	GESI	and	materials), etc.	
	responsiveness	materials), etc.		
	and ICT and			
	21st C skills	3.2 Ask teachers to suggest	3.2 Suggest alternative ways of	
>	Reading,	alternative ways of	delivering the sample	
	discussion, and	delivering the sample	lessons (NTS 3e, 3g and 3i).	
	identification	lessons. (NTS 3e, 3g and		
	of continuous	3i)		
	assessment	<u> </u>		
	opportunities	E.g.	E.g.	
	in the lesson.	a) Use extended learning	a) Use extended learning	
	Each lesson	b) Work-based learning	b) Portfolio building, etc.	
<u> </u>	Lucii (C33011	b) Work bused learning	by Torgono bunding, etc.	

should include at least two opportunities to use continuous assessment to support student teacher learning

- Resources:
- Links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used.
- Consideration needs to be given to local availability guidance on any power point presentations, TLM or other resources which need to be developed to support learning

- c) Portfolio building, etc
- 3.3 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3I and 3m).

E.g.

- a) Give opportunities for leadership roles to all learners irrespective of their gender, background or ability
- b) deliberately give attention and support to learners with learning difficulty
- c) Give positive feedback to all students especially those with learning difficulty
- 3.4 Ask teachers to discuss how the lesson is linked to the use of formative assessment tools and practices (NTS 3k, 3l, 3m and 3n).

E.g.

- a) Observation
- b) Scrap book/albums,
- c) Reflective journals,
- d) Peer and Selfassessment,
- e) Portfolio\*\*

#### \*\*Note:

Building a TVET subject based portfolio involves the following steps:

- i. Identify the variety of items that can go into a TVET portfolio
  - Sketches
  - Finished 2D/3D works
  - Scrap book

3.3 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3I and 3m).

E.g.

- a) Give opportunities for leadership roles to all learners irrespective of their gender, background or ability
- b) deliberately giving attention and support to learners with learners' difficulty
- c) Give positive feedback to all students especially those with learning difficulty
- 3.4 Discuss how the unit is linked to the use of formative assessment tools and practices (NTS 3k, 3l, 3m and 3n).

E.g.

- a) Observation
- b) Scrap book/albums,
- c) Reflective journal
- d) Portfolio\*\*

#### \*\*Note:

Building a TVET subject based portfolio involves the following steps:

- i. Identify the variety of items that can go into a TVET portfolio
  - Sketches
  - Finished 2D/3D works
- Scrap book
- Cut-out articles from

- Cut-out articles from magazines/newspa pers, etc.
- Written projects/assignment s
- Downloads from the internet
- Power point presentations
- > Written Reports
- Photographs/videos , etc.
- ii. Decide the appropriate
   form of the
   portfolio. Portfolios
   can be either soft as
   in e-portfolios or
   hard portfolios.
- iii. Portfolios should not
  exist only for
  assessment. They
  constitute a private
  library for the
  learner, now and
  the future
- iv. For Visual Art, it is a
  necessary
  requirement for the
  scoring of any
  practical project
  work
- 3.5 In groups ask teachers to suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3l, 3m and 3n).

- a) Observation
- b) Question & Answer,
- c) Reflective journals,
- d) Portfolio
- e) Peer and Selfassessment, etc
- 3.6 Guide teachers to discuss how the lesson can make use of ICT resources to support

- magazines/newspapers , etc.
- Written projects/assignments
- Downloads from the internet
- Power point presentations
- Written Reports
- Photographs/videos, etc.
- ii. Decide the appropriate form of the portfolio. Portfolios can be either soft as in e-portfolios or hard portfolios.
- iii. Portfolios should not exist only for assessment. They constitute a private library for the learner, now and the future
- iv. For Visual Art, it is a necessary requirement for the scoring of any practical project work
- 3.5 Suggest other authentic assessment methods that could be used in the sample lesson. (NTS 3k, 3l, 3m and 3n).

- a) Observation
- b) Question and Answer
- c) Reflective journals,
- 3.6 Discuss how the lesson can make use of ICT resources to support relevant

relevant activities in the NTS (NTS 3j).  E.g. a) Pre-recorded videos on work ethics b) Photographs of some professionals working c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics projectors, etc.	
E.g. a) Pre-recorded videos on work ethics b) Photographs of some professionals working c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	
a) Pre-recorded videos on work ethics photographs of some professionals working c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	
a) Pre-recorded videos on work ethics photographs of some professionals working c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	
work ethics b) Photographs of some professionals working c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	
b) Photographs of some professionals, OERs/internet facilities, projectors, etc.  c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	Ì
professionals working c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	
c) OERs/Internet search on work ethics d) PowerPoint presentation on work ethics	
work ethics d) PowerPoint presentation on work ethics	
d) PowerPoint presentation on work ethics	
on work ethics	
projectors, etc.	
3.7 Ask one teacher to 3.7 Model a teaching activity in	
model a teaching the sample lesson in any of the	
activity in the sample TVET using ICT. (Extension	
lesson in any of the Activity)	
TVET using ICT.	
(Extension Activity)	
4 Evaluation and 4.1 Ask teachers to brain- 4.1 Brain write two key ideas 15 mins	
review of write two key ideas you are taking away from	
session: they are taking away the lesson.	
from the lesson.	
> <b>Teachers need</b> 4.2 Ask them to share it with 4.2 Share with the larger group	
to identify the larger group.	
critical friends 4.3 Ask teachers if there are 4.3 Raise any unresolved issues	
to observe any unresolved issues for clarification	
lessons and for clarification.	
report at next 4.4 Remind teachers to 4.4 Identify a critical friend to	
session identify a critical friend observe you in teaching	
> Identifying and to observe them in your lessons in relation to	
addressing any teaching their lessons in PLC Session 7 and provide	
outstanding relation to PLC Session feedback at the next PLC	
issues relating 7 and provide feedback session.	
to the lesson/s at the next PLC session.	
for clarification 4.5 Remind teachers to read 4.5 Read Session 8 from the	
Session 8 from the PLC PLC Handbook in	
Handbook in preparation for the next	
preparation for the next session.	
session.	

## **TVET PLC Session 8: Managing the Learning Environment**

NB. TVET Domain:

- 1. Agriculture
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Cuidones notes es	Cuidanas Natas au Tarabau	Time a !:-
	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to new session  NB The guidance for PLC Coordinator should identify, address, and provide explanations for any areas where teachers might require clarification on an aspect of the lesson.	1.1 Give an ice breaker to prepare the teachers for the session, e.g. read this: yy u are. yy u be. I ci, u are yy 4 me.  Answer: Too wise you are. Too wise you be, I see, you are too wise for me.  1.2. Ask teachers to reflect and share two successes and one challenge they had in their last week lesson	<ul> <li>1.1 Participate in the ice breaker activities by reading this:</li> <li>yy u are, yy u be. I ci, u are yy 4 me.</li> <li>1.2 Reflect and share your successes and challenge you had in your last week lesson delivery.</li> </ul>	25 mins
NB PLC Coordinator should ask teachers to plan for their teaching as they go through the PLC session	delivery.  1.3 Ask a teacher to read NTS 3a, 3b and 3c and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session for a discussion of the relationship between the LOs and the LI with colleagues (NTS 3a, 3b and 3c).  LO 1: Demonstrate the ability to plan and deliver (varied and challenging) lessons that achieved the intended learning outcomes.  LI 1.1 Exhibit a sample plan or forecast that	<ul> <li>1.3 Read NTS 3a, 3b and 3c of and tease out the learning outcomes (LOs) and learning indicators (LIs) of the session for a discussion of the relationship between the LOs and the LI with colleagues (NTS 3a, 3b and 3c).</li> <li>LO 1: Demonstrate the ability to plan and deliver (varied and challenging) lessons that achieved the intended learning outcomes.</li> </ul>	

- indicate a long-term and short-term (termly, weekly and daily) plans showing clearly how learners are to progress within the context of the prescribed Senior High School curriculum and its expected learning outcomes.
- LI 1.2 Describe how varied teaching and assessment strategies as well as ICT and GESI issues can be integrated in the teaching and learning process in the Senior High Schools.
- LO 2: Demonstrate use of reflective practice and small-scale action research findings to improve teaching and learning.
- LI 2.1 Identify at least one area to improve on each term.
- LI 2.2 Provide a gender responsive action plan to guide practice.
- LI 2.3 Exhibit reflective journal showing the benefits of conducting lesson evaluation by teachers and learners.
- LO 3: Exhibit the ability to creat a safe, encouraging learning environment.

- LI 1.1 Exhibit a sample plan or forecast that indicate a long-term and short-term (termly, weekly and daily) plans showing clearly how learners are to progress within the context of the prescribed Senior High School curriculum and its expected learning outcomes.
- LI 1.2 Describe how varied teaching and assessment strategies as well as ICT and GESI issues can be integrated in the teaching and learning process in the Senior High Schools.
- LO 2: Demonstrate use of reflective practice and small-scale action research findings to improve teaching and learning.
- LI 2.1 Identify at least one area to improve on each term.
- LI 2.2 Provide a gender responsive action plan to guide practice,
- LI 2.3 Exhibit of a reflective journal showing the benefits of conducting lesson evaluation by teachers and learners.
- LO 3: Exhibit the ability to create a safe, encouraging learning environment.

	1121 Idon+ify+ho	1121 Identify the elements of a	
	LI 3.1 Identify the elements of a safe	LI 3.1 Identify the elements of a	
		safe and encouraging	
	and encouraging	learning environment.	
	learning		
	environment.		
	LI 3.2 Establish clear	LI 3.2 Establish clear classroom	
	classroom rules and	rules and routine to	
	routine to promote	promote positive	
	positive behaviour	behaviour among	
	among learners,	learners.	
	1.4 Lead teachers to	1.4 Discuss how TVET concepts	
	discuss how TVET	can be employed in	
	concepts can be	managing the learning	
	employed in	environment.	
	managing the		
	learning		
	environment.		
	E.g.	E.g.	
	Adaptation of safety	Adaptation of safety	
	rules as in the studios,	rules as in the studios,	
	workshops, farms and	workshops, farms and	
	in the laboratories into	in the laboratories into	
	all learning	all learning	
	environment	environment	
	1.5 Ask teachers to	1.5 identify other related areas	
	identify other	of managing the learning	
	related areas of	environment that will	
	managing the	enhance the teaching and	
	learning	learning of TVET.	
	environment that		
	will enhance the		
	teaching and		
	learning of TVET.		
	E.g.	E.g.	
	Organizing:	Organizing:	
	a. jury sessions to	a. jury sessions to	
	encourage peer	encourage peer	
	assessment	assessment	
	b. exhibition to promote	b. exhibition to promote	
	self-assessment among	self-assessment	
	learners	among learners	
	c. work-based learning to		
	enhance skills training		
Give regard for	1.6 In the TVET domain	1.6 In your TVET domain groups	
misconceptions,	groups ask teachers	identify possible	
stereotypes, GESI,	to identify possible	misconceptions and	
	misconceptions and		

#### ICT, 21st century stereotypes in their stereotypes in your various skills, etc. various lesson topics lesson topics for the week. for the week. E.g. E.g. Lesson Topic: Lesson Topic: a) Agriculture: (General a) Agriculture: (General Management Practices of a Management Practices of a Farm Farm (Plant/animal), (Plant/animal), Machinery and Implements) Machinery and b) Home Economics: Kitchen Implements) Safety and Sanitation b) Home Economics: c) Technical Skills: Health Safety Kitchen Safety and and Protection d) Visual art: Studio Sanitation c) Technical Skills: Health Maintenance Safety and Protection d) Visual art: Studio Maintenance Possible misconceptions and Possible misconceptions and stereotypes stereotypes Agriculture: care i. Agriculture: care for for agricultural agricultural tools, tools, implements, implements, animals animals and and plants are for males plants are for and difficult for females. males and difficult ii. Home Economics: for females. cleaning and care for ii. Home Economics: the Kitchen is for cleaning and care females not males for the Kitchen is iii. Technical skills: wearing for females and of boots and other not males protective gears are for iii. Technical skills: males and not suitable wearing of boots and appropriate for and other learners with SEN. Visual Art: Visual art protective gears iv. learners are dirty, etc. are for able bodied persons and not suitable and appropriate for learners with SEN. iν. Visual Art: Visual

1.7 Discuss possible ways to mitigate these

art learners are dirty, etc.

discuss possible ways

to mitigate these

1.7 Guide teachers to

misconceptions and stereotypes in TVET.

E.g.

- a) Invite a role model who has achieved success in their respective fields of TVET (either female, male or/and person with SEN) as resource persons to interact with learners as a way of helping learners to overcome these stereotypes in Agriculture, Home Economics, and Visual Art
- b. Prepare and use pre-recorded videos of persons who have defied these stereotypes and have achieve successes in various TVET production activities within the local community and beyond
- c. Do community
  walk or undertake
  a field trip to
  expose learners to
  clean studios,
  kitchens and
  workshops in
  TVET.
- 1.8 Ask teachers to sit in mixed ability/gender groups (where possible) and discuss the 21st century skills that could be developed

misconceptions and stereotypes in TVET.

E.g.

- a) Invite a role model who has achieved success in their respective fields of TVET (either female, male or/and person with SEN) as resource persons to interact with learners as a way of helping learners to overcome these stereotypes in Agriculture, Home Economics, and Visual Art
- b. Prepare and use prerecorded videos of
  persons who have defied
  these stereotypes and
  have achieve successes
  in various TVET
  production activities
  within the local
  community and beyond

1.8 In mixed ability/gender groups (where possible) discuss the 21<sup>st</sup> century skills that could be developed among learners in relation to their lessons for the week.

among learners in relation to their lessons for the week.

E.g. communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development.

1.9 Ask teachers to brainstorm ways of incorporating ICT into their lesson.

E.g.

- a. Video show of some workshops/studios /kitchens and farms
- b. Surf open
  educational
  resources (OERs)
  and other internet
  sources for
  information on
  safety rules in
  workshops,
  studios, kitchens
  and farms
- c. Use of PowerPoint presentation to facilitate the teaching and lessons of the topic.
- d. Employ electronic gadgets such as CCTV cameras to monitor and review learners' safety behaviour in the workshops, studios, kitchens and farms for reflection.
- 1.10 Ask teachers to discuss possible

- E.g. communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development.
- 1.9 Brainstorm ways of incorporating ICT into your lesson.

E.g.

- a. Video show of some workshops/studios/kitch ens and farms
- b. Surf open educational resources (OERs) and other internet sources for information on safety rules in workshops, studios, kitchens and farms
- c. Use of PowerPoint presentation to facilitate the teaching and lessons of the topic.

1.10 Discuss possible activities you would adopt to develop

		activities they would	21 <sup>st</sup> century skills in their	
		adopt to develop 21 <sup>st</sup>	learners such as creativity,	
		<u> </u>	• 1	
		century skills in their	communication skills,	
		learners such as	collaboration, observation	
		creativity,	and enquiry skills, digital	
		communication skills,	literacy and personal	
		collaboration,	development skills.	
		observation and		
		enquiry skills, digital		
		literacy and personal		
		development skills.		
		E.g.	E.g.	
		a) Group learners	a) Group learners into	
		into mixed ability	mixed ability groups to	
		groups to clean	clean workshops,	
		workshops,	studios, kitchens and	
		studios, kitchens	farms	
		and farms	b) engage technology to	
		b) engage	monitor learners'	
		technology to	behaviour in the	
		monitor learners'	workshops, studios,	
		behaviour in the	kitchens and farms, etc.	
		workshops,	kiteriens and jarins, etc.	
		studios, kitchens		
		and farms		
		c) give equal		
		opportunity to all		
		learners to play		
		leadership roles,		
		etc.		
		d) give opportunity		
		to learners to		
		innovate new		
		ways of keeping		
		workshops,		
		studios, kitchens		
		and farms safe		
		and clean.		
2.	Planning for	2.1 In their TVET domain	2.1 In your TVET domain groups	20 mins
	teaching,	groups ask teachers to	discuss your sample lesson	
	learning and	discuss their sample	plans based on the 2010	
	assessment	lesson plans based on the	SHS Syllabus and link them	
	activities for the	2010 SHS Syllabus and link	to the concepts of LOs and	
	lesson/s making	them to any of the LOs	Lis*	
	links to the TVET	and LIs of the PLC session*		
	curriculum			
		Sample Lesson Topics in	Sample Lesson Topics in the	
		the TVET domains for the	TVET domains for the week:	
		week:		
		I	1	I

Lesson Topic:

- a) Agriculture: (General Management Practices of a Farm (Plant/animal/Machin ery and Implements).
- b) Home Economics: Kitchen Safety and Sanitation.
- c) Technical Skills: Health Safety and Protection.
- d) Visual art: Studio Maintenance

### a) Objectives:

By the end of the lesson, learners will be able to:

i. State how to ensure safety and protection practices on the farm (as regards plant and animal machinery and implements), kitchen, laboratories, workshops and studios before, during and after work, E.a.

#### Before work:

Clean workshops, laboratories. Studios, etc. before the start of work making sure the environment is free of accident causing items such as water, oil, cutting and piecing object on the floor etc.

#### **During Work:**

Use appropriate tools in the right way(s)

### After work:

I. Clean floors and tools, pack and cover equipment, tools and materials at their appropriate places, switch off machines and electrical

Lesson Topic:

- a) Agriculture: (General Management Practices of a Farm (Plant/animal/Machinery and Implements)
- b) Home Economics: Kitchen Safety and Sanitation)
- c) Technical Skills: Health Safety and Protection
- d) Visual art: Studio Maintenance

#### d) Objectives:

By the end of the lesson, learners will be able to:

 State how to ensure safety and protection practices on the farm (as regards plant and animal machinery and implements), kitchen, laboratories, workshops and studios before, during and after work,

## E.g.

#### Before work:

Clean workshops, laboratories. Studios, etc. before the start of work making sure the environment is free of accident causing items such as water, oil, cutting and piecing object on the floor etc.

#### **During Work:**

Use appropriate tools in the right way(s)

### After work:

 Clean floors and tools, pack and cover equipment, tools and materials at their appropriate places, switch off machines and electrical gadgets, close windows, doors and cabinets, etc.

- gadgets, close windows, doors and cabinets, etc.
- ii. Demonstrate through ii. hands-on activity safety and protection practices on the farms, kitchens, laboratories, workshops and studios,
- iii. Develop at least five safety rules on the farms, kitchens, laboratories, workshops and studios, etc.

#### b) Core activities:

- i. Guide learners to state five safety rules on the farm, kitchen, laboratories, workshops and studios,
- ii. Demonstrate
  through
  simulation/demon
  stration basic
  safety and
  protection
  practices on the
  farms kitchens,
  laboratories,
  workshops and
  studios for
  learners to
  observe.
- iii. Guide learners to surf OERs and other sources on the Internet to discover other safety and protection practices elsewhere.
- iv. Guide learners to try their hands on basic safety and protection

- Demonstrate through hands-on activity safety and protection practices on the farms, kitchens, laboratories, workshops and studios,
- iii. Develop at least five safety rules on the farms, kitchens, laboratories, workshops and studios, etc.

#### b) Core activities:

- I. Guide learners to state five safety rules on the farm, kitchen, laboratories, workshops and studios,
- II. Demonstrate through simulation/demonstratio n basic safety and protection practices on the farms kitchens, laboratories, workshops and studios for learners to observe.
- III. Guide learners to surf
  OERs and other sources
  on the Internet to
  discover other safety and
  protection practices
  elsewhere.
- IV. Guide learners to try their hands on basic safety and protection practices on the farms, kitchens,

- practices on the farms, kitchens, laboratories, workshops and studios
- v. Put learners in mixed ability/gender groups (where possible) to formulate simple safety and protection rules for the farms, kitchens, laboratories, workshops and studios.
- laboratories, workshops and studios
- V. Put learners in mixed ability/gender groups (where possible) to formulate simple safety and protection rules for the farms, kitchens, laboratories, workshops and studios.

## c) Evaluation:

- i. Evaluate learners progress by providing check lists for learners to use to re-enact basic safety and protection practices on farms, kitchens, laboratories, workshops and studios, etc.
- ii. Organise a jury session for learners to assess themselves and their peers' work.
- \*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.2 Ask teachers to tease out the LOs and Lis from the sample lesson.
- LO: Demonstrate Knowledge and

#### **Evaluation:**

- I. Evaluate learners progress by providing check lists for learners to use to re-enact basic safety and protection practices on farms, kitchens, laboratories, workshops and studios, etc.
- II. Organise a jury session for learners to assess themselves and their peers' work.
- \* Tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.2 Tease out the Los and Lis from the sample lesson.
- LO: Demonstrate Knowledge and understanding of the

	de veteve die ex ef the	different les mais es annies auto	
	understanding of the	different learning environments	
	different learning	in the respective TVET domains	
	environments in the		
	respective TVET domains.		
	_		
	LI 1.1 State at least 2	LI 1.1 State at least 2 learning	
	learning	environments in your	
	environments in	TVET domain,	
	your TVET domain,		
	LI 1.2: Discuss how to	LI 1.2: Discuss how to enforce	
	enforce safety rules	safety rules in the	
	in the different	different learning	
	learning	environments.	
	environments.		
	LI 1.3 Discuss at least 5		
	ways of ensuring		
	safety precautions		
	before, during and		
	after production in		
	Visual Art, Technical		
	Skills, Home		
	Economics, and		
	Agriculture,		
3. Teaching,	3.1 Ask teachers to discuss	3.1 Discuss how the NTS 3a, 3b	30 mins
learning and	how the NTS 3a, 3b	and 3c) i.e. Managing the	
assessment	and 3c) i.e. Managing	Learning Environment will	
Reading and	the Learning	help to promote teaching	
discussion of the	Environment will help	and learning of TVET in the	
teaching and	to promote teaching	Senior High Schools.	
learning activities	and learning of TVET	8 3 3 3	
noting, addressing,	in the Senior High		
and explaining areas	Schools.		
where teachers may	E.g.	E.g.	
require clarification	a) ensure safety of all	a) ensure safety of all	
	learners	learners	
Noting	b) promote responsible	b) promote responsible	
opportunities for	behaviour among	behaviour among	
making <i>explicit</i>	teachers and learners	teachers and learners	
links to the	in the learning	in the learning	
Secondary	environment	environment	
School	c) facilitate inclusivity and		
Curriculum	tolerance of all		
Noting	learners and their	c) facilitate inclusivity and	
opportunities for	peculiarities during	tolerance of all	
integrating: GESI	the learning process,	learners and their	
responsiveness	etc.	peculiarities during the	
and ICT and 21st		learning process, etc.	
C skills	3.2 Guide teachers to	3.2 Identify gaps in your lesson	
	identify gaps in their	plans (if any) and use their	
	1 0 pp 111 circu		<u> </u>

- Reading,
  discussion, and
  identification of
  continuous
  assessment
  opportunities in
  the lesson. Each
  lesson should
  include at least
  two
  opportunities to
  use continuous
  assessment to
  support student
  teacher learning
- Resources:
- Links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration
- needs to be
  given to local
  availability
  guidance on any
  power point
  presentations,
  TLM or other
  resources which
  need to be
  developed to
  support learning

lesson plans (if any) and use their knowledge of managing the learning environment to resolve them.

E.g.

## Possible gaps:

- a) Lack of regulations to guide learners and teachers' activities in the studios, kitchens, workshops or in the farms
- b) Absence of attendants at the studios, kitchens, workshops and in the farms to assist the teacher
- c) Inadequate studios, kitchens, workshops and model farms

#### Possible Solution:

- a) Develop safety rules in the studios, kitchens, workshops or in the farms together with learners
- b) Train learners to assist you in the studios, kitchens, workshops or in the farms where it will be feasible
- c) Make good use of available spaces in the school and keep them clean
- 3.3 Ask teachers to suggest alternative ways of delivering the sample lessons.
- E.g. use of:
  - a) work-based learning to provides opportunity for

knowledge of educational framework and curriculum to resolve them.

E.g.

## Possible gaps:

- a) Lack of regulations to guide learners and teachers' activities in the studios, kitchens, workshops or in the farms
- b) Absence of attendants at the studios, kitchens, workshops and in the farms to assist the teacher

#### Possible Solution:

- a) Develop safety rules in the studios, kitchens, workshops or in the farms together with learners
- b) Train learners to assist you in the studios, kitchens, workshops or in the farms where it will be feasible

3.3 Suggest alternative ways of delivering the sample lessons.

#### E.g. use of:

 a) work-based learning to provides opportunity for learners to engage in Hands-on-activities in

learners to engage
in Hands-on-
activities in
maintain and
cleaning the
studios, kitchens,
workshops or the
farms

- b) pre-recorded video to show how variety of TVET studios, kitchens, workshops or farms safety rules apply
- c) library/internet resources and mass media discussions on safety practices in the studios, kitchens, workshops and the farms
- d) field trip/
  community walks
  to observe best
  practices in
  studios, kitchens,
  workshops or in
  the farms
  elsewhere.
- e) use of resource persons to organize demonstration lessons
- 3.4 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness.

a) classroom
arrangement to
promote group
and teamwork
among learners of
different socio-

- maintain and cleaning the studios, kitchens, workshops or in the farms
- b) pre-recorded video to show how variety of TVET studios, kitchens, workshops or farms safety rules apply
- c) library/internet resources and mass media discussions on safety practices in the studios, kitchens, workshops and the farms

3.4 Review your sample lesson plans to identify activities that promote GESI responsiveness,

E.g.

a) classroom arrangement to promote group and teamwork among learners of different socio-economic and religious background.

- economic and religious background.
- b) mixed
  ability/gender
  groupings to
  facilitate the
  development of
  collaborative skills
- c) non-stereotype role-play to dispel social stereotyping among learning
- d) using positive language to give feedback to encourage active involvement of learners especially female and SEN learners.
- e) engage learners to set up classroom rules and routine to prevent unwanted behaviour among learners during practical activities
- 3.5 Ask teachers (in their domain groups where possible) to suggest authentic assessment methods that could be used in the sample lesson.

- a) Jury to promote self-appraisal among learners.
- b) Peer assessment
- c) Observation and hands-on-activity in safety, protection and cleaning of studios, kitchens, workshops and farms, etc.
- d) Portfolio

- b) mixed ability/gender groupings to facilitate the development of collaborative skills.
- c) non-stereotype role-play to dispel social stereotyping among learning

3.5 In your domain groups (where possible) to suggest authentic assessment methods that could be used in the sample lesson.

- a) jury to promote selfappraisal among learners.
- b) observation and handson-activity in safety, protection and cleaning of studios, kitchens, workshops and farms, etc.

		3.6 Ask teachers to discuss	3.6 Discuss how the session	
		how the session topic	makes use of resources to	
		makes use of resources to	support relevant activities	
		support relevant activities	in the NTS.	
		in the NTS.		
		E.g.	E.g.	
		a) Adaptation of	Adaptation of empty/available	
		empty/available	spaces for model farms,	
		spaces for model	kitchens, workshops and studios.	
		farms, kitchens,		
		workshops and		
		studios.		
		b) Pre-recorded videos,		
		photographs of some		
		professionals, smart		
		boards, OERs/Internet		
		facilities, projectors,		
		etc.		
		3.7 Invite one teacher to	3.7 Model a sample lesson in	
		model a sample lesson	any of the TVET domains	
		in any of the TVET	taking due cognizance of the	
		domains taking due	learning environment.	
		_		
		cognizance of the	(Extension Activity)	
		learning environment.		
		(Extension Activity)		
4	Evaluation and	4.1 Ask teachers in their	4.1 In your TVET domain, write	15 mins
	review of	TVET domain to write	and share what you have	
	session:	and share what they	learnt in the session on a flip	
		have learnt in the	chat	
>	Teachers need to	session on a flip chat.		
	identify critical			
	friends to	4.2 Ask if teachers they	4.2 Ask questions on any issue	
	observe lessons	need any further	that need further	
	and report at	clarification	clarification.	
	next session			
>	Identifying and	4.3 Remind teachers to	4.3 Invite a critical friend to	
	addressing any	invite a critical friend	observe you in teaching your	
	outstanding	to observe them in	lessons in relation to PLC	
	issues relating to	teaching their lessons	Session 8 and provide	
	the lesson/s for	in relation to PLC	feedback at the next PLC	
	clarification	Session 8 and provide	session.	
		feedback at the next		
		PLC session.		
		4.4 Remind teachers to	4.4 Read Session 9 from the PLC	
		read Session 9 from	Handbook in preparation for	
		the PLC Handbook in	the next session.	
		preparation for the	the next session.	
		1		
		next session.		

## **TVET PLC Session 9: Teaching and Learning**

NB. TVET Domain:

- 1. Agriculture
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of previous session and introduction to	1.1 Invite a teacher to give an ice breaker related to the topic.	1.1 Give an ice breaker related to the topic.	25 mins
new session	1.2. Ask teachers to share some of the discoveries	1.2 Share some of the discoveries in you last	
NB The guidance for PLC Coordinator should	in their last week's lesson delivery.	week's lesson delivery.	
identify, address, and provide explanations for any areas where teachers might require clarification on an aspect of the lesson.	1.3 Ask a teacher to read NTS 3d, 3e, 3f, 3g, 3h, 3i, 3j, 3k and 3l of the NTS under the sub-domain Teaching and Learning, tease out possible learning outcomes (LOs) and learning indicators (LIs) for the session and compare them with the LOs and Lis listed below.	1.3 Read NTS 3d, 3e, 3f, 3g, 3h, 3i, 3j, 3k and 3l of the NTS under the subdomain <i>Teaching and Learning</i> , tease out possible learning outcomes (LOs) and learning indicators (LIs) for the session and compare them with the LOs and Lis listed	
Coordinator should ask teachers to plan for their teaching as they go through the PLC session	LO 1: Demonstrate understanding and skill in using variety of teaching strategies that encourages learner participation and critical thinking.	below.  LO 1: Demonstrate understanding and skill in using variety of teaching strategies that encourages learner participation and critical thinking.	
	LI 1.1 identify at least four teaching strategies in teaching and learning.	LI 1.1 identify at least four teaching strategies in teaching and learning.	

- LI 1.2 Explain how teaching strategies will help learner participation and critical thinking. ref. <a href="https://flippedlearning">https://flippedlearning</a> .org
  - LO 2: Demonstrate the skill of involving all learners including girls and SEN learners.
- LI 2.1 Explain how all learners especially girls and learners with SEN can be involved in teaching and learning process.
- LI 2.2 Identify at least five teaching and learning resources that could help learners especially girls and SEN to ensure their progression.
- LO 3: Demonstrate knowledge and skill of using a variety of teaching and learning resources including ICT that enhance learning
- LI 3.1 Identify at least five teaching and learning resources.
- LI 3.2 Examine how the teaching and learning resources including ICT will enhance learning.
- 1.4 Guide teachers to identify and discuss how TVET knowledge (as it

- LI 1.2 Explain how teaching strategies will help learner participation and critical thinking. ref. https://flippedlearning.org
  - LO 2: Demonstrate the skill of involving all learners including girls and SEN learners.
- LI 2.1 Explain how learners especially girls and SEN can be involved in teaching and learning.
- LI 2.2 Identify at least five teaching and learning resources that could help learners especially girls and SEN to ensure their progression.
- LO 3: Demonstrate knowledge and skill of using a variety of teaching and learning resources including ICT that enhance learning.
- LI 3.1 Identify at least five teaching and learning resources.
- LI 3.2 Examine how the teaching and learning resources including ICT will enhance learning.
- 1.4 Identify and discuss how TVET knowledge (as it relates the

	relates the various domains) is articulated within teaching and learning activities in the SHS syllabus (NTS 2a, 2e	various domains) is articulated within teaching and learning activities in the SHS syllabus (NTS 2a, 2e	
	and 3h).  E.g.  The 2010 SHS Syllabus in the various TVET domains is designed to equip learners with scientific knowledge and practical skills to make them ready for higher education and the job market.	and 3h).  E.g.  The 2010 SHS Syllabus  in the various TVET  domains is  designed to equip  learners with  scientific  knowledge and practical skills to make them ready for higher education and the job market.	
	1.5 Ask teachers to identify specific teaching and learning strategies that enhance the delivery of TVET lessons (NTS 2c, 2d, 2e).	1.5 Identify specific teaching and learning strategies that enhance the delivery of TVET lessons (NTS 2c, 2d, 2e).	
	E.g.  a) Competency Based Training (CBT) b) Experiments c) educational field trip d) Simulated games e) Project based learning f) Flipped classrooms g) Design thinking, h) Reverse brainstorming etc.	E.g.  a) Competency Based Training (CBT) b) Experiments c) educational field trip d) Simulated games, etc.	
Give regard for misconceptions, stereotypes, GESI, ICT, 21 <sup>st</sup> century skills, etc.	1.6 Ask teachers to identify possible misconceptions and stereotypes in their various TVET lesson topics for the week (NTS 3m).	1.6 Identify possible misconceptions and stereotypes in your TVET lesson topics for the week (NTS 3m).	

Lesson Topic: Enterprise Management in:

- a) Agriculture
- b) Home Economics
- c) Technical Skills
- d) Visual art

Possible misconceptions and stereotypes

- a) Home Economics: One requires a lot of money to start up a business.
- b) Visual Art: it is difficult to break into the existing business environment.
- c) Agriculture: You have to start with mechanized farming to be able to make profit.
- d) You need sophisticated machinery in Technical skills careers.
- 1.7 Guide teachers to discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 3e, 3f and 3m).

E.g.

- a) Invite someone who has nurtured and grown a business to share his experience with students.
- b) Educate students on business incubation.
- c) Do community walk to expose students to the

E.g.

Lesson Topic: Enterprise Management in:

- a) Agriculture
- b) Home Economics
- c) Technical Skills
- d) Visual art

Possible misconceptions and stereotypes

- a) Home Economics:

   One requires a lot
   of money to start
   up a business.
- b) Visual Art: it is difficult to break into the existing business environment.
- Agriculture: You have to start with mechanized farming to be able to make profit.
- d) You need sophisticated machinery in Technical skills careers.
- 1.7 Discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 3e, 3f and 3m).

- a) Invite someone who has nurtured and grown a business to share his experience with students.
- b) Educate students on business incubation.
- c) c. Do community walk to expose

- contribution of TVET to society
- d) Organize field trips for students to visit the business incubation centers.
- 1.8 Ask teachers in their TVET domains to list some 21<sup>st</sup> century skills.
- E.g.

  communication skills,
  taking calculated risk,
  selling, observation and
  enquiry skills, creativity,
  strategies, personal

development and

leadership skills (NTS 3j).

1.9. Ask teachers to identify ways of incorporating ICT in their lesson (NTS 3j).

E.g.

- a) Analyze labels to get business ideas.
- b) Surf open
  educational
  resources (OERs) and
  other internet
  sources for
  information.
- c) Teach using power Point presentation.
- d) employ computer software such AutoCAD, Photoshop, Coral Draw, Paint,
- e) Teacher, interact and monitor with students' extended learning via social media platforms

- students to the contribution of TVET to society
- d) Organize field trips for students to visit the business incubation centers.
- 1.8 In your TVET domains list some 21<sup>st</sup> century skills.

E.g.

communication skills,
taking calculated risk,
selling, observation
and enquiry skills,
creativity, strategies,
personal development
and leadership skills
(NTS 3j).

1.9. Identify ways of incorporating ICT in your lesson (NTS 3j).

- a) Analyze labels to get business ideas.
- b) Surf open
  educational
  resources (OERs)
  and other internet
  sources for
  information.
- c) Teach using power Point presentation.
- d) Employ computer software such AutoCAD, Photoshop, Coral Draw, Paint, etc.

	T	T	
	f) Students to submit their assignments		
	through email etc.		
	1.10 Ask teachers to discuss possible activities they would adopt to develop the 21 <sup>st</sup> century skills in their learners such as communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development (NTS 3a, 3e, 3h and 3j).	1.10 Discuss possible activities you would adopt to develop the 21st century skills in your learners such as communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development (NTS 3a, 3e, 3h and 3j).	
	E.g. a) Group students to do PowerPoint presentation. b) project/research	E.g. a) Group students to do PowerPoint presentation. b) Project/research	
	c) Role-play d) Fieldtrip	c) Role-play d) Fieldtrip	
	e) Panel presentation	e) panel presentation	
2 Planning for teaching, learning and assessment	2.1 Ask teachers to discuss samples of their lesson plans in their various TVET domains and use	2.1 Discuss samples of their lesson plans in their various TVET domains and use their	20 mins
activities for the lesson/s with links to the TVET	their knowledge in teaching and learning to deliver the lessons*	knowledge in teaching and learning to deliver the lessons	
curriculum	Sample Lesson Topics in the TVET domain:	Sample Lesson Topics in the TVET domain:	
	Topic: Entrepreneurial skills Sub-topic: Enterprise Management in visual Art, Home Economics, Agriculture and Technical skills.	Topic: Entrepreneurial skills Sub-topic: Enterprise Management in visual Art, Home Economics, Agriculture and Technical skills.	
	a) Objectives By the end of the lesson learners will be able to;	a) Objectives By the end of the lesson learners will be able to;	

- i. Mention at least four business enterprises.
- State at least three ii. factors to consider when setting up business enterprise.
- iii. *Identify the elements* of the business plan.

#### b) Core activities

- Guide learners in their groups to surf and discuss business enterprises they identified.
- ii. Guide learners to state and discuss factors to consider when setting up a business enterprise in their various groups.
- iii. *In groups, guide* learners to surf and discuss elements of business plans for presentation.

#### c) Evaluation

Evaluate the lesson by using *question* and answer method.

- \*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.2 Ask teachers to tease LOs and LIs from sample lessons.

- i. Mention at least four business enterprises.
- ii. State at least three factors to consider when setting up business enterprise.
- iii. Identify the elements of the business plan.

#### b) Core activities

- Guide learners in their groups to surf and discuss business enterprises they identified.
- ii. Guide learners to state and discuss factors to consider when setting up a business enterprise in their various groups.
- iii. *In groups, guide* learners to surf and discuss elements of business plans for presentation.

#### c) Evaluation

Evaluate the lesson by using question and answer method.

- \*Tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.2 Ask teachers to tease LOs and LIs from sample lessons

	I	1	1
	E.g.	E.g.	
	LO: Exhibit the essential skills LO: Exhibit the essential		
	of managing Enterprise in	skills of managing	
	TVET.	Enterprise in TVET.	
		,	
	LI 1.1 Mention at least four	LI 1.1 Mention at least four	
	TVET based business	TVET based business	
	enterprises.	enterprises.	
	enterprises.	enterprises.	
	LI 1.2 State at least three	LI 1.2 State at least three	
	factors to consider when	factors to consider when	
	setting up a TVET based	setting up a TVET based	
	business enterprise.	business enterprise.	
	business enterprise.	business enterprise.	
	LI 1.3 Identify the elements	LI 1.3 Identify the elements	
	of the business plan.	of the business plan	
3 Teaching,	3.1 Guide teachers to	3.1 Identify gaps in your	30 mins
learning and	identify gaps in their	lesson plans (if any) and	
assessment	lesson plans (if any) and	use your knowledge of	
dosessinent	use their knowledge of	teaching and learning to	
Pooding and	teaching and learning to	resolve them (NTS 2e, 2f	
Reading and		,	
discussion of the	resolve them (NTS 2e, 2f	and 2j)	
teaching and	and 2j).		
learning activities			
noting, addressing,	E.g.	E.g.	
and explaining	Possible gaps:	Possible gaps:	
areas where	a) Lack of well-	a) Lack of well-	
teachers may	established TVET	established TVET	
require	enterprises in the	enterprises in the	
clarification	local community.	local community.	
	b) Inadequate resource	b) Inadequate	
Noting	persons in the field of	resource persons in	
opportunities	TVET business to	the field of TVET	
for making	speak on	business to speak	
_	•	•	
explicit links to	entrepreneur issues.	on entrepreneur	
the Secondary	c) Inadequate ICT tools	issues.	
School	to promote teaching	c) Inadequate ICT	
Curriculum	and learning of TVET	tools to promote	
Noting	related business	teaching and	
opportunities	skills.	learning of TVET	
for integrating:		related business	
GESI		skills.	
responsiveness			
and ICT and	Possible Solution:	Possible Solution:	
21 <sup>st</sup> C skills	a) Teachers should	a) Teachers should	
<ul><li>Reading,</li></ul>	make creative use of	make creative use	
discussion, and	available resources	of available	
uiscussion, and	uvulluble resources	oj avallable	

- identification
  of continuous
  assessment
  opportunities
  in the lesson.
  Each lesson
  should include
  at least two
  opportunities
  to use
  continuous
  assessment to
  support
  student teacher
  learning
- > Resources:
- Links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used.
- Consideration needs to be given to local availability guidance on any power point presentations, TLM or other resources which need to be developed

- within the environment.
- b) Teachers should make use of basic gadgets like mobile phones and laptops to promote ICT in the absence of sophisticated equipment.
- 3.2 Ask teachers to suggest alternative ways of delivering the sample lessons (NTS 2h, 2i and 2j).
- E.g. use of:
  - a) pre-recorded video to show variety of enterprise management
  - b) library/internet resources and discussions
  - b) field trip
  - c) community walk
  - d) use of local or indigenous entrepreneur mentors
  - e) use of enterprise management test.
  - f) use of experiential learning

etc.

- 3.3 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness.
- E.g.
  - a) classroom arrangement
  - b) mixed ability/gender groupings
  - c) non-stereotype role play

- resources within the environment.
- b) Teachers should make use of basic gadgets like mobile phones and laptops to promote ICT in the absence of sophisticated equipment.
- 3.2 Suggest alternative ways of delivering the sample lessons (NTS 2h, 2i and 2j).
- E.g. use of:
  - a) pre-recorded video to show variety of enterprise management
  - b) library/internet resources and discussions
  - b) field trip
  - c) community walk
  - d) use of local or indigenous entrepreneur mentors, etc.

- 3.3 Review your sample lesson plans to identify activities that promote GESI responsiveness.
- E.g.
  - a) classroom arrangement
  - b) mixed ability/gender groupings
  - c) non-stereotype role

to.	support	d) using positive feedback	play	
	arning	to students especially	d) using positive	
160	arming		, ,,	
		female and SEN	feedback to students	
		students.	especially female and	
		e) use of local	SEN students.	
		entrepreneurs who		
		have defied		
		stereotyping/ stigma to		
		succeed in TVET		
		business as mentors		
		and resource persons		
		to inspire learners		
		3.4 Ask teachers to discuss	3.4 Discuss resources that	
		resources that can be	can be used to support	
		used to support teaching	teaching and learning	
		and learning in the	in the sample lesson	
		sample lesson NTS (NTS	NTS (NTS 3j).	
		3j).	, 3,	
		_	_	
		E.g.	E.g.	
		Pre-recorded videos,	Pre-recorded videos,	
		photographs	photographs of some	
		of some entrepreneurs,	entrepreneurs,	
		OERs/internet facilities,	OERs/internet	
		projectors, etc.	facilities, projectors,	
			etc.	
		3.5 Ask a teacher to model a	3.5 Model a a teaching	
		teaching activity in the	activity in the sample	
		sample lesson in any of	lesson in any of the	
		the TVET domain taking	TVET domain taking	
		due cognizance of any of	due cognizance of any	
		the LO and LIs of the PLC	of the LO and LIs of the	
		session.	PLC session. (Extension	
		(Extension Activity)	Activity)	
	aluation and	4.1 Ask teachers in pairs to	4.1 In pairs, share what	15 mins
	view of	share what they have	you have learnt in this	
se	ssion:	learnt in the session	session.	
> Te	eachers need	4.2 Invite the pair to share it	4.2 Share with the larger	
to	identify	with the larger group.	group	
	itical friends			
to	observe	4.3 Ask teachers if there are	4.3 Ask questions on any	
les	ssons and	any further questions for	issue that need further	
re	port at next	clarification.	clarification.	
se	ssion			

- Identifying and addressing any outstanding issues relating to the lesson/s for clarification
- 4.4 Remind teachers to identify a critical friend to observe them in teaching their lessons in relation to PLC Session 9 and provide feedback at the next PLC session.
- 4.5 Remind teachers to read Session 10 from the PLC Handbook in preparation for the next session.
- 4.4 Identify a critical friend to observe you in teaching your lessons in relation to PLC Session 9 and provide feedback at the next PLC session.
- 4.5 Read Session 10 from the PLC Handbook in preparation for the next session.

### **TVET PLC Session for Topic 10: Assessment**

#### NB. TVET Domain:

- 1. Agriculture
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Guidance notes on Leading the session. What the PLC Coordinator will have to say during each stage of the session	Guidance Notes on Teacher Activity during the PLC Session. What teachers will do during each stage of the session.	Time in session
1. Review of	<b>1</b> .1. Invite a teacher to give an	1.1 Give an ice breaker	25 mins
previous session and	ice breaker related to the	related to the topic.	
introduction to new	topic.		
session	4.3. A.I. I I I	2.4.61	
ND The suidence for	1.2. Ask teachers to share some	2.1 Share some of the	
NB The guidance for	of the discoveries in their	discoveries in your	
PLC Coordinator	previous week's lesson	previous week's lesson	
should identify, address, and provide	delivery.	delivery.	
explanations for any	1.3 Ask a teacher to read NTS	1.3 Read NTS 3k, 3l, 3m, 3n,	
areas where	3k, 3l, 3m, 3n, 3o and 3p	30 and 3p and tease out	
teachers might	and tease out possible	possible learning	
require clarification	learning outcomes (LOs)	outcomes (LOs) and	
on an aspect of the	and learning indicators and	learning indicators and	
lesson.	compare them with the	compare them with the	
	LOs and Lis listed below	LOs and Lis listed below	
NB PLC Coordinator	(LIs) of the session for a.	(LIs) of the session for a.	
should ask teachers			
to plan for their	LO 1: Demonstrate knowledge	LO 1: Demonstrate	
teaching as they go	and skill in identifying	knowledge and skill in	
through the PLC	through assessment and	identifying through	
session	addressing learners'	assessment and	
	learning difficulties and	addressing learners'	
	misconceptions.	learning difficulties and	
		misconceptions.	
	111 1 Identify at least four	111 1 Identify at least four	
	LI1.1 Identify at least four learning difficulties among	LI1. 1 Identify at least four learning difficulties	
	learners of TVET.	among learners of TVET.	
	learners or TVLT.	among learners of TVLT.	
	LI1.2 State and discuss ways of	LI1.2 State and discuss ways	
	helping learners of TVET to	of helping learners of	
	overcome learning	TVET to overcome	
	difficulties and	learning difficulties and	
	misconceptions.	misconceptions.	
	1111 2 Maka annissists	III 1 2 Maka ang garata	
	LI 1.3 Make appropriate referral of learners with	LI 1.3 Make appropriate	
	referral of learners with	referral of learners with	1

- learning difficulties to expertise attention.
  LO 2: Demonstrate skill in building meaningful records of learners using assessment and communicating same to the learners.
- LI 2.1 State the different types of assessment records of learners.
- LI 2.2 Keep a portfolio of students' works and progress report.
- LO 3: Demonstrate awareness of national and school level of assessment of learners.
- LI 3.1 Develop assessment plan to guide assessment activities.
- LI 3.2 Apply national and school based assessments tools at the appropriate time to enhance students' performance and progress.
- LO 4: Demonstrate skill in using objective and predetermined criteria to assess TVET learners without comparing learner with learner.
- LI 4.1 Identify the different tools/instruments to use in assessing and analyzing TVET students' results.
- LI 4.2 Analyze students results objectively without comparing learner with

- learning difficulties to expertise attention.
- LO 2: Demonstrate skill in building meaningful records of learners using assessment and communicating same to the learners.
- LI 2.1 State the different types of assessment records of learners.
- LI 2.2 Keep a portfolio of students' works and progress report.
- LO 3: Demonstrate awareness of national and school level of assessment of learners
- LI 3.1 Develop assessment plan to guide assessment activities.
- LI 3.2 Apply national and school based assessments tools at the appropriate time to enhance students' performance and progress.
- LO 4: Demonstrate skill in using objective and predetermined criteria to assess TVET learners without comparing learner with learner.
- LI 4.1 Identify the different tools/instruments to use in assessing and analyzing TVET students' results.
- LI 4.2 Analyze students results objectively without comparing learner with

	learner to enhance	learner to enhance
	learners' progress.	learners' progress.
	icarriers progress.	icarriers progress.
	1.5 Ask teachers to identify	1.5 identify further areas of
	areas of assessment that	assessment that will enhance
	will enhance their teaching	your teaching (NTS 3k, 3p).
	(NTS 3k, 3p).	your teaching (1115 st,) sp).
	(11.5 5.1, 5 5).	
	E.g.	E.g.
	a) Assessment as learning –	a) Assessment as learning –
	self assessment, self-	self assessment, self-
	reflection, observing others	reflection etc.
	and providing feedback,	
	etc.	
	b) Assessment for learning –	b) Assessment for learning
	Portfolio, library research.	-Portfolio, library
	,	research
	c) Assessment of learning-	c) Assessment of learning-
	End of course project work	End of course project
	and exhibition, etc.	work and exhibition, etc.
	1.6 Ask teachers to identify	1.6 Identify other related
	other related areas of	areas of assessment that
	assessment that will	will enhance the delivery
	enhance the delivery of the	of the TVET curriculum (3i,
	TVET curriculum (3i, 3n).	3n).
	E.g.	E.g.
	a) observation	a) observation
	b) jury	b) jury
	c) peer-review	c) peer review, etc.
	d) self-assessment,	cy peer review, etc.
	e) peer-assessment,	
	f) Exhibition,	
	g) Appreciation, etc.	
Give regard for	1.7 Ask teachers to identify	1.7 Identify possible
misconceptions,	possible misconceptions	misconceptions and
stereotypes, GESI,	and stereotypes in their	stereotypes in your
ICT, 21 <sup>st</sup> century	various TVET lesson topics	various TVET lesson
skills, etc.	for the week (NTS 3m).	topics for the week (NTS
,	,	3m).
	E.g.	E.g.
	Lesson Topic: Project (end of	Lesson Topic: Project (end of
	course project work) in:	course project work) in:
	a) Agriculture	a) Agriculture
	b) Home Economics	b) Home Economics
	c) Technical Skills	c) Technical Skills
	d) Visual Art	d) Visual Art
İ		1

Possible misconceptions and stereotypes

- a) perception from learners that project works are difficult to execute.
- b) Teachers' perception that project works are difficult to assess.
- c) some learners may find it difficult to undertake projects because of financial challenges.
- 1.8 Guide teachers to discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 3e, 3f and 3m).

E.g.

- a) Simplify the process by dividing the project execution plan into phases and provide a step-by-step approach to each phase.
- b) Provide project marking procedures and schemes to teachers
- c) Encourage learners to use local and zero cost materials for their projects.
- d) Encourage learners to work in mixed ability groups so that the haves can assist the have nots.
  - 1.9 Ask teachers in their TVET domains to list some 21<sup>st</sup> century skills (NTS 3j).

E.g.

communication skills, taking calculated risk, advertising, observation and enquiry skills, creativity, strategic planning, personal development and leadership skills Possible misconceptions and stereotypes

- a) perception from learners that project works are difficult to execute.
- b) Teachers' perception that project works are difficult to assess.
- 1.8 Discuss possible ways to mitigate these misconceptions and stereotypes in TVET (NTS 3e, 3f and 3m).

E.g.

- a) Simplify the process by dividing the project execution plan into phases and provide a step-by-step approach to each phase.
- b) Provide project marking procedures and schemes to teachers
- c) Encourage learners to use local and zero cost materials for their projects.
  - 1.9 In your TVET domains to list some 21<sup>st</sup> century skills (NTS 3j).
  - E.g.
    communication skills,
    taking calculated risk,
    advertising, observation
    and enquiry skills,
    creativity, strategic
    planning, personal
    development and
    leadership skills

- 1.10. Ask teachers to identify ways of incorporating ICT in their lesson (NTS 3j).
- 1.10. Identify ways of incorporating
   ICT in your lesson (NTS 3j).

E.g.

- a) Take pictures of learners' works for reflective assessment after onsite assessment.
- b) Surf open educational resources (OERs) and other internet sources for information on how to execute and assess project works.
- c) Teach using power Point presentation.
- d) Employ computer
  software such
  AutoCAD, Photoshop,
  Coral Draw, Paint and
  other relevant tools ICT
  in teaching, executing
  and assessing project.
- e) Teacher interact and monitor learners' progress of work via social media platforms.
- f) Learners submit progress of their project work through electronic media, etc.
- 1.11 Ask teachers to discuss possible activities they would adopt to develop the 21<sup>st</sup> century skills in their learners such as communication skills, collaboration, observation and enquiry skills, digital literacy, creativity and personal development (NTS 3a, 3e, 3h and 3j).

- E.g.
  - a) Take pictures of learners' works for reflective assessment after onsite assessment.
  - b) Surf open educational resources (OERs) and other internet sources for information on how to execute and assess project works.
  - c) Teach using power Point presentation.
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21<sup>st</sup> century skills in
your learners such as
communication skills,
collaboration,
observation and
enquiry skills, digital
literacy, creativity and
personal development
(NTS 3a, 3e, 3h and 3j).

	T _	T _
2. Planning for	E.g.  a) Encourage learners to work in mixed ability/gender groups.  b) Encourage creativity and innovation through research and thinking outside the box activities.  c) Organize jury sessions to facilitate appreciation and criticism of one's own and peer's works  2.1 Ask teachers to discuss	E.g.  a) Encourage learners to work in mixed ability/gender groups. b) Encourage creativity and innovation through research and thinking outside the box activities.  2.1 Discuss Ask teachers to 20 mins
_		
teaching,	samples of their lesson	discuss samples of their
learning and	plans in their various  TVET domains and link	lesson plans in their various TVET domains and
assessment activities for	them to assessment *	link them to assessment *
the lesson/s	them to assessment	lilik tilelli to assessillellt
with links to	Sample Lesson Topics in the	Sample Lesson Topics in
the TVET	TVET domain:	the TVET domain:
curriculum	, , , , , , , , , , , , , , , , , , ,	and 1727 domain.
	Topic: Project work in Visual	Topic: Project work in
	Art, Home Economics,	visual Art, Home
	Agriculture and Technical	Economics, Agriculture and
	skills.	Technical skills.
	a) Objectives	a) Objectives
	By the end of the lesson	By the end of the lesson
	learners will be able to;	learners will be able to;
	i. Identification of a	i. Identification of a
	challenge that	challenge that
	require solution.	require solution.
	ii. Design and produce	ii. Design and produce
	artifact/a model farm	artifact/a model
	in the various TVET	farm in the various
	domains.	TVET domains.
	iii. Write a	iii. Write a
	comprehensive	comprehensive
	project report including an	project report
	appreciation of	including an appreciation of
	artifacts/model	artifacts/model
	farms stating and	farms stating and
	explain any	explain any
	symbolisms used.	symbolisms used.

#### b) Core activities:

- i. Guide learners to identify challenges that require solution in the community
- ii. Guide learners to design a solution using the ideation process.
- iii. Guide learners to execute the artifact/model farm, in the various TVET domains using a phase to phase and a step-by-step approach at each stage.
- iv. Guide learners in groups to write a project report including an appreciation of their artifact/farm.

#### c) Evaluation:

Evaluate the lesson by organizing jury session, and an exhibition to help each learner to improve upon their own abilities.

- \*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.2 Ask teachers to tease out LOs and LIs from the sample lesson

LO: Design and execute projects in Agriculture, Home Economics, Technical Skills and Visual Art.

#### b) Core activities

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#### c) Evaluation:

Evaluate the lesson by organizing jury session, and an exhibition to help each learner to improve upon their own abilities.

- \*Tease out the learning outcomes and the learning indicators from the sample lesson plans outline.
- 2.2 Tease out LOs and LIs from the sample lesson
- LO: Design and execute projects in Agriculture, Home Economics, Technical Skills and Visual Art.

- LI 1.1 Design and produce:
  - a. **Agriculture** Model farm
  - b. **Home Economics** Garment design.
  - c. **Technical Skill** Design of a circuit with a light bulb.
  - d. Visual Art Collage

LI 1.2 State the step-by-step procedure of executing the project.

E.g.

- a) identification of the problem
- b) undertake preliminary designs using the ideation process
- c) gathering of appropriate tools and materials
- d) Produce using the appropriate production processes and procedures
- e) complete the work taking note of finishing procedures and finishes f) exhibit the work
- LI 1.3 Write a project report including an appreciation of the artifact/farm

- LI 1.1 Design and produce:
  - i. **Agriculture** Model farm
  - ii. Home Economics –Garment design.
  - iii. Technical Skill –Design of a circuit with a light bulb.
  - iv. Visual Art Collage
- LI 1.2 State the step-by-step procedure of executing the project.

E.g.

- a) identification of the problem
- b) undertake preliminary designs using the ideation process
- c) gathering of appropriate tools and materials

LI 1.3 Write a project report including an appreciation of the artifact/farm.

- 3. Teaching, learning and assessment
- Reading and discussion of the teaching and learning activities noting, addressing, and explaining areas where teachers may require clarification
- 3.2 Noting opportunities for making explicit links to the Secondary School Curriculum
- 3.3 Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills
- 3.4 Reading,
  discussion, and
  identification
  of continuous
  assessment
  opportunities
  in the lesson.
  Each lesson
  should include
  at least two
  opportunities
  to use
  continuous
  assessment to
  support

3.1 Guide teachers to identify gaps in their lesson plans (if any) and use their knowledge of Assessment to resolve them (3k, 3o).

E.g.

Possible gaps:

- a) lack of well-established TVET workshops/kitchen and model farms in the school
- b) Inadequate time allocation on the school time table for elaborate project work
- c) Inadequate tools to promote teaching and learning.

Possible Solution:

- a) Teachers should make creative use of available resources within the environment.
- b) Teachers may adopt after official class lessons and weekends where feasible to accomplish projects
- 3.2 Ask teachers to suggest alternative ways of delivering the sample lessons (NTS 3e, 3g and 3i).

E.g. use of:

- a) Pre-recorded video to show variety of enterprise management
- b) library/internet resources and discussions,
- :) field trip

3.1 Identify gaps in your lesson plans (if any) and use your knowledge of Teaching of Assessment to resolve them (3k, 3o).

30 mins

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E.g. use of:

- a) Pre-recorded video to show variety of enterprise management
- b) library/internet resources and discussions,

student teacher learning

- 3.5 Resources:
- Links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration
- needs to be
  given to local
  availability
  guidance on
  any power
  point
  presentations,
  TLM or other
  resources
  which need to
  be developed
  to support
  learning

- d) community walk
- e) use of entrepreneur mentors
- f) use of enterprise management test,
- g) use of experiential learning etc.
- 3.3 Ask teachers to review their sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3l and 3m).
- E.g.
  - a) Duty roster for laboratory, studio, workshop and farm management.
  - b) Mixed ability/gender groupings during project execution.
  - c) Using positive feedback to learners especially female and SEN students.
- 3.4 Ask teachers to discuss how the lesson is linked to the use of assessment tools and practices as assessment for, as and of learning (NTS 3k, 3l, 3m and 3n).
- E.g.

How to score practical lessons

- a) Develop a check list indicating stages of the process.
- b) Identify skill(s) that must be acquired.
- c) Determine scores for each stage depending on the

- c) field trip
  d) community walk
  e) use of entrepreneur
  mentors
  f) use of enterprise
  management test
- f) use of enterprise management test, g) use of experiential learning etc.
- 3.3 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3l and 3m).

E.g.

- a) Duty roster for laboratory, studio, workshop and farm management.
- b) Mixed ability/gender groupings during project execution.
- 3.4 Discuss how the lesson is linked to the use of assessment tools and practices as assessment for, as and of learning (NTS 3k, 3l, 3m and 3n).
- E.g.

How to score practical lessons

- a) Develop a check list indicating stages of the process.
- b) Identify skill(s) that must be acquired..
- c) Completed artefact must be scored on

- complexity of the skill.
- d) Completed artefact must be scored on the following criteria
  - Evidence of Preliminary/idea development process
  - Appropriate use of tools/material
  - ➤ Draft/craftsmanshi p (Compositionappropriate use of principles and elements of design, Colour and tone, etc. for 2-D works as in Visual Art, right and timely application of chemicals as in Agriculture, etc.)
  - Originality/creativit y
  - Suitability (NB if the work is not suitable it means all other areas of evaluation may be faulty).
- 3.5 In groups ask teachers to suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3l, 3m and 3n).

E.g.

- a) Portfolio
- b) Self-assessment
- c) Peer-assessment
- d) Exhibition
- 3.6 Guide teachers to discuss how the session topic makes use of resources

- the following criteria
- Evidence of Preliminary/idea development process
- Appropriate use of tools/material
- ➤ Draft/craftsmans hip (Composition-appropriate use of principles and elements of design, Colour and tone, etc. for 2-D works as in Visual Art, right and timely application of chemicals as in Agriculture, etc.)
- Originality/creati vity
- Suitability (NB if the work is not suitable it means all other areas of evaluation may be faulty).
- 3.5 Suggest other authentic assessment methods that could be used in the sample lesson (NTS 3k, 3l, 3m and 3n).

E.g.

- a) Portfolio
- b) Self-assessment
- c) Peer-assessment
- 3.6 Discuss how the session makes use of resources to support

		to support relevant	relevant activities in	
		activities in the NTS (NTS	the NTS (NTS 3j).	
		3j).		
		E.g.	E.g.	
		a) surfing OERs/internet	a) surfing	
			, , ,	
		facilities, to assess	OERs/internet	
		ideas for designs as	facilities, to assess	
		well as procedures	ideas for designs as	
		and processes	well as procedures	
		b) using Power Point to	and processes	
		present reports,	b) using Power Point	
			, ,	
		c) publishing finished	to present reports,	
		works via social	c) publishing finished	
		media, etc.	works via social	
			media, etc.	
		3.7 Ask one teacher to	3.7 Model a teaching	
		model a teaching activity in	activity in the sample	
		the sample lesson in any of	lesson in any of the TVET	
		the TVET domains taking due	domains taking due	
		cognizance of any of the LOs		
		,	cognizance of any of the	
		and LIs of the PLC session.	LOs and LIs of the PLC	
		(Extension Activity)	session. (Extension Activity)	
4.	<b>Evaluation and</b>	4.1 Ask teachers in pairs to	4.1 In pairs, share what	15 mins
	review of	share what they have	you have learnt in this	
	session:	learnt in the session	session.	
>	Teachers need	4.2 Invite the pair to share it	4.2 Share with the larger	
	to identify	with the larger group.	group	
	critical friends	land the sample of the	S. c. c. b	
	to observe	4.3 Ask teachers if there are	4.3 Ask questions on any	
	lessons and	any further questions for	issue that need further	
	report at next	clarification.	clarification.	
	session	Ciai incacion.	Ciarification.	
>	Identifying and	4.4 Remind teachers to	4.4 Identify a critical	
			I =	
	addressing any	identify a critical friend	friend to observe you	
	outstanding	to observe them in	in teaching your	
	issues relating	teaching their lessons in	lessons in relation to	
	to the lesson/s	relation to PLC Session	PLC Session 10 and	
	for clarification	10 and provide feedback	provide feedback at the	
		at the next PLC session.	next PLC session.	
		4.5 Remind teachers to read	4.5 Read Session 11 from	
		Session 11 from the PLC	the PLC Handbook in	
		Handbook in	preparation for the	
		preparation for the next	next session.	
			HEAL SESSIOH.	
		session.		

#### **TVET PLC Session 11: Training Needs**

#### NB. TVET Domain:

- 1. Agriculture
- 2. Home Economics
- 3. Technical Skills
- 4. Visual Art

	Guidance notes on Leading the	Guidance Notes on Teacher	Time in
	session. What the PLC	Activity during the PLC	session
	Coordinator will have to say	Session. What teachers will	
	during each stage of the	do during each stage of the	
	session	session.	
1 Review of previous	1.1 Invite a teacher to give an	1.1 Give an ice breaker	25 mins
session and	ice breaker related to the	related to the topic.	25 111113
introduction to new	topic.	related to the topic.	
session	topic.		
30331011	1.2 Ask teachers to share some	1.2 Share some of the	
NB The guidance for	of the discoveries in their	discoveries in you last	
PLC Coordinator	last week's lesson delivery.	week's lesson delivery.	
should identify,	idde weeks lesson denvery.	week s lesson denvely.	
address, and provide	1.3 Ask a teacher to read the	1.3 Read the write-up about	
explanations for any	background of the topic	the background of the	
areas where	'Training Needs of	topic 'Training Needs of	
teachers might	Teachers'.	Teachers'.	
require clarification			
on an aspect of the	Note:	Note:	
lesson.	Background	Background	
	There are a number of skills	There are a number of	
NB PLC Coordinator			
should ask teachers			
to plan for their	classroom. These include:	effective in the classroom.	
teaching as they go		These include:	
through the PLC			
session	a) <b>Discipline Skills</b> : Discipline	a) Discipline Skills:	
	helps the teacher to be	Discipline helps the	
	effective. It is a vital	teacher to be effective. It	
	component of an effective	is a vital component of an	
	classroom management.	effective classroom	
	The teacher's discipline	management. The	
	ensures that positive	teacher's discipline	
	behaviour is encouraged in	ensures that positive	
	classrooms.	behaviour is encouraged	
		in classrooms.	
	h) Clarence and	h) Clarence and	
	b) Classroom	b) Classroom	
	Management Skills:	Management Skills:	
	By ensuring good behaviour of learners, half of the	By ensuring good	
	teacher's battle is won. To	behaviour of learners, half of the teacher's	
	be an effective teacher, you	battle is won. To be an	
	should also be able to help	effective teacher, you	

learners develop good study and work habits. Good classroom management skills start with setting ground rules to stress the importance of classroom dignity.

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#### c) Observation Skills:

It is the prime responsibility of teachers to have a thorough understanding of the cognitive, emotional and social development of learners. Since a classroom is filled with learners coming from different parental backgrounds, it is beneficial for a teacher to be aware of the learning capabilities of different learners.

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#### d) Learner Engagement Skills:

Teachers handle a lot of learners with different mentalities towards learning. While some learners demonstrate keen interest in learning, others are distracted at the smallest provocation. Hence, to be called an effective teacher, you should develop learner engagement skills so that you can motivate your learners.

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#### e) Strong Communication Skills:

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#### f) Teaching Skills:

Teaching is described as a noble profession, it has the capacity to change the lives of learners for the better. Every effective teacher requires good interpersonal skills along with effective speaking and strong presentation skills. A teacher needs the following teaching skills to be effective in the classroom: i. deep content knowledge ii. different models of instructional strategies

iii. knowledge of the
 learning and
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 iv. clinical supervision skills
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#### g) Subject Matter Expertise:

Every teacher has a specific area of specialization. Putting in years of teaching experience with the appropriate knowledge, skills and continuous professional development will enable teachers to be abreast of changes to the curriculum in their subject areas.

#### h) Time Management Skills:

It is easy to get carried away by different aspects of teaching, but it is important for teachers to ensure that the curriculum is completed within the pre-defined time frame. Teachers should therefore attach importance to the time taken by learners to complete their assignments. Teachers should also follow strategies to organize their working day around educational and other priorities.

#### i) Planning Skills:

A teacher should be able to clearly plan what the objectives for each lesson are. Planning ahead of time allows a teacher to be more confident about what he/she is going to teach.

#### *j)* Passion and Positivity:

Being passionate about teaching is a pre-requisite

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Every teacher should be an active member of a community of practice where they can draw on the expertise of others for the benefit of their learners. Learners on the other hand, would love to have teachers who are friendly and understand them rather than forcing them to learn. Working with learners as members of a team with a common goal and in a nonthreatening manner would help them to contribute to the lesson while having fun.

#### Patience:

Managing a classroom full of learners is not the easiest of jobs. There may be some learners who would test teachers' patience. Teachers should not lose their temper during such testing time in order to produce positive outcomes.

Refer.
https://www.edsys.in/8skills-teachers-requireeffective-teaching/
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- 1.4 Ask a teacher to read the appendix to the NTS which highlights the training needs of teachers, tease out possible learning outcomes (LOs) and learning indicators (LIs) and compare them with the LOs and LIs listed below.
- LO 1: Demonstrate knowledge and understanding of the training needs of teachers under the various Ranks (1 to 6).
- LI 1.1 Identify the training needs of teachers under the various Ranks (1, 2, 3, 4, 5 and 6).

Refer to the appendix to the NTS.

LI 1.2 Identify ways of meeting the training needs at each of the Ranks, i.e. (1, 2, 3, 4, 5 and 6).

Refer to the appendix to the NTS.

- LI 1.3 List the resources needed to achieve the training needs at each of the Ranks for TVET (NTS 1b, 1c and 3j).
- LO 2: Demonstrate understanding of the rationale for the needs at the various levels.

Refer to the appendix to the NTS.

- LI 2.1 Identify the professional roles the teacher will be expected to play at the various levels (NTS 1g).
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- roles teachers play at the various levels (Ranks 1, 2, 3, 4, 5 and 6).
- LI 2.3 Discuss how the roles played by teachers at the various ranks promote teaching and learning (NTS 3e, 3f, 3g, 3h, 3i and 3j).
- LO 3: Demonstrate the skill of identifying possible training avenues and how to avail oneself for capacity building (NTS 1a, 1e and 3a).
- LI 3.1 List possible training avenues that a TVET teacher can access for capacity building (NTS 1b).
- LI 3.2 Discuss how the avenues listed in LI 3.1 will facilitate training for TVET teachers (NTS 1b).
- 1.5 Ask teachers to identify and list their own training needs in relation to the three main domains of the NTS (NTS 1a, 1b).
- a) Professional values and attitudes.

E.g.

- i) Comply with Ministry of Education and GES ethical codes
- ii) Compliance with national education policies and framework (NTS 1a, 1b, 1c, 1d, 1e, 1f and 1g).
- b) Professional knowledge. E.g.

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	Models of learning and	Models of learning and	
	development of children	development of children	
	(NTS 2a, 2b, 2c, 2d, 2e and	(NTS 2a, 2b, 2c, 2d, 2e	
	2f).	and 2f).	
	c) Professional practice. E.g. i. Different models of instructional strategies and assessment practices ii. Clinical supervision skills iii. Ability to model effective instructional and assessment practices iv. Model GESI compliance qualities in the classroom and beyond (NTS 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h, 1l, 1j, 1k, 1l, 1m, 1n, 10 and 1p).	c) Professional practice. E.g. i. Different models of instructional strategies and assessment practices  ii. Clinical supervision skills iii. Ability to model effective instructional and assessment practices  iv. Model GESI compliance qualities in the classroom and beyond (NTS 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h,	
		11, 1j, 1k, 1l, 1m, 1n,	
		1o and 1p).	
Give regard for	1.6 Ask teachers to identify	1.6 Identify possible	
misconceptions,	possible misconceptions	misconceptions and	
stereotypes, GESI,	and stereotypes that affect	stereotypes that affect	
ICT, 21 <sup>st</sup> century	training needs of the	training needs of the	
skills, etc.	various TVET teachers (NTS	various TVET teachers	
	3m).	(NTS 3m).	
	·		
	Possible misconceptions and	Possible misconceptions and	
	stereotypes	stereotypes	
	a) The perception that many	a) The perception that	
	in-service training	many in-service training	
	programmes are usually	programmes are usually	
	geared towards preparing	geared towards the	
	the generalized teacher	generalized teacher and	
	and not well suited for the	not well suited for the	
	TVET teacher	TVET teacher	
	b) The perception that	b) The perception that	
	pursuing further studies is	pursuing further studies	
	expensive and must be	is expensive and must	
	borne by the employer	be borne by the	
		[ ·	
	c) Teachers think that going	employer	
	c) Teachers think that going for in-service training and	[ ·	
	c) Teachers think that going for in-service training and short courses is a waste of	[ ·	
	c) Teachers think that going for in-service training and	[ ·	

- immediate financial benefits (NTS 3h, 3I and 3j).
- 1.7 Ask teachers to discuss possible ways to mitigate these misconceptions and stereotypes.

E.g.

- a) Encourage the formation of subject based associations to facilitate specialized inservice training for its members
- b) Sensitize teachers on the values of selfdevelopment as a way of positioning oneself for better opportunities in the future (NTS 3m).
- 1.8 Ask teachers to identify ICT skills training that would be useful for the TVET teacher (NTS 3j).

E.g.

- q) PowerPoint presentation skills
- b) Skills in the use of software like AutoCAD, Paint, Photo Shop, Coral Draw, goggle classroom, zoom, Microsoft teams, smart board, web conferencing, webinars, etc.
- 1.9 Ask teachers to list possible 21<sup>st</sup> century skills that could be acquired during in-service training/short courses (NTS 3c, 3e).

E.g.

communication skills,

observation and enquiry

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		skills, creativity, personal development and leadership skills, collaborative skills, digital literacy, life-long learning, critical thinking skills, etc.	skills, creativity, personal development and leadership skills, collaborative skills, digital literacy, life-long learning, critical thinking skills, etc.	
2	Planning for teaching, learning and assessment activities for the lesson/s	2.1 Ask teachers to discuss samples of their lesson plans in their various TVET domains based on the 2010 SHS syllabus and linked to any of the LOs and LIs for the PLC session *.	2.1 Discuss samples of their lesson plans in their various TVET domains based on the 2010 SHS syllabus and linked to any of the LOs and LIs for the PLC session *.	20 mins
		Sample Lesson Topics in the TVET domain:	Sample Lesson Topics in the TVET domain:	
		Topic: Project work in Agriculture, Home Economics, Technical skills and Visual Art.	Topic: Project work in Agriculture, Home Economics, Technical skills and Visual Art.	
		Sub-Topic:  a) Agriculture - Model farms  b) Home Economics — Garment design.  c) Technical Skills — Design circuit with a light bulb  d) Visual Art — Collage	Sub-Topic:  a. Agriculture - Model farms  b. Home Economics - Garment design.  c. Technical Skills - Design circuit with a light bulb  d. Visual Art - Collage	
		a) Objectives: By the end of the lesson learners will be able to: i. Identify at least four challenges to be addressed ii. Design suitable solutions following the ideation process iii. Execute the project using the appropriate tools, materials, procedures and processes iv. Exhibit finished products for a jury session	a) Objectives: By the end of the lesson learners will be able to: i. Identify at least four challenges to be addressed ii. Design suitable solutions following the ideation process iii. Execute the project using the appropriate tools, materials, procedures and processes iv. Exhibit finished products for a jury session	

- b) Core Activities
  - i. In groups, guide
    learners to research
    and come out with
    challenges in their
    immediate
    environment
  - ii. Guide learners through the ideation process to design appropriate solution(s) to resolve the challenges identified in (i) above
  - iii. Guide learners to assemble appropriate tools and materials needed to execute the project
  - iv. Guide learners with concept maps/flow chat/work plan/check list to execute the project paying attention to appropriate use of tools and materials
  - v. Guide learners to write their project report/appreciation explaining any symbolisms used and their relevance to the work
  - vi. Guide learners to exhibit the finished products for a jury session.
- c) Use jury session to evaluate the final project work.
- \*Teachers would be guided to tease out the learning outcomes and the learning indicators from the sample lesson plans outline.

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- \*Tease out the learning outcomes and the learning indicators from the sample lesson plans outline.

Note: Refer to PLC Session 6 for assessment procedures for practical works

- 2.2 Ask teachers to tease out the LOs and the LIs from their sample lesson plans as in (2.1).
- LO: Design and execute projects in Agriculture, Home Economics, Technical Skills and Visual Art (NTS 2b).
- LI 1.1 Identify a challenge in your immediate environment.
- LI 1.2 Design a suitable solution for the challenge identified in (1.1) above using the ideation process.
- LI 1.3 Exhibit artefacts
  /completed projects and
  portfolios in Agriculture,
  Home Economics,
  Technical Skills and Visual
  Art.
- LI 1.4 Organise a jury session to evaluate finished products
- 2.3 List possible training needs that should be acquired to help deliver the sample lesson successfully,
  Refer to the appendix to the NTS (Rank 1, 2, 3, 4, 5 and 6)

E.g.

- a) Portfolio developmentb) Proiect facilitation and
- b) Project facilitation and supervision skills
- c) Project assessment techniques
- d) GESI implementation skills

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E.g.

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 c) Project assessment
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		1) 0501: 1	
	e) Techniques in applying	d) GESI implementation	
	ICT in project execution,	skills	
	supervision and		
	assessment		
	f) Organization of exhibition		
	g) Organization of a jury		
	session, etc.		
3 Teaching,	3.1 Guide teachers to identify	3.1 identify gaps in your	30 mins
learning and	gaps in their lesson planning	lesson planning and	
assessment	and delivery skills (if any)	delivery skills (if any) and	
	and use their knowledge of	use your knowledge of	
Reading and	training needs to resolve	training needs to resolve	
discussion of the	them (NTS 1a, 2c).	them (NTS 1a, 2c).	
teaching and			
learning activities	E.g.	E.g.	
noting, addressing,	Possible gaps:	Possible gaps:	
and explaining areas	i. Deficiency in portfolio	i. Deficiency in portfolio	
where teachers may	development skills	writing skills	
require clarification	ii. Inadequate project	ii. Inadequate project	
	facilitation and	facilitation and	
4.1 Noting	supervision skills	supervision skills	
opportunities for	iii. Unsuitable project	iii. Unsuitable project	
making <i>explicit</i>	assessment techniques	assessment techniques	
links to the	iv. Poor GESI	assessment teeningaes	
Secondary	implementation		
School	v. Deficiency in ICT skills		
Curriculum	application to project		
4.2 Noting	execution, supervision		
opportunities for	and assessment, etc.		
integrating: GESI	and assessment, etc.		
responsiveness	Possible Solution:	Possible Solution:	
and ICT and 21st	a) Educate teachers on how to	a) Educate teachers on how	
C skills	build portfolios either in	to build portfolios either	
4.3 Reading,	hard copy or in soft copy	in hard copy or in soft	
discussion, and	and identify the variety of	copy and identify the	
identification of	items that can go into a	variety of items that can	
continuous	portfolio in TVET such as:	go into a portfolio in TVET	
assessment	i. Sketches	such as:	
opportunities in	ii. Finished 2D/3D works	i. Sketches	
the lesson. Each	iii. Scrap book	ii. Finished 2D/3D	
lesson should	iv. Cut out articles from	works	
include at least	magazines/	iii. Scrap book	
two	newspapers, etc.	iv. Cut out articles from	
	_ · · · · · · · · · · · · · · · · · · ·	magazines/	
opportunities to use continuous	v. Written projects/ assignments		
	1	newspapers, etc.	
assessment to	vi. Downloads from the internet	v. Written projects/	
support student		assignments	
teacher learning	vii. PowerPoint	vi. Downloads from the	
4.4 Resources:	presentations	internet	
Links to the     wisting BLC	viii. Photographs/videos,	vii. PowerPoint	
existing PLC	etc.	presentations	

Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used.

should be used.
Consideration
needs to be
given to local
availability
guidance on any
power point
presentations,
TLM or other
resources which
need to be
developed to
support learning

Note: Portfolios should not exist only for assessment. They also constitute a private library for the learners' current and future use. Note also that portfolios are a necessary requirement for the scoring of any practical project work.

## b) Educate teachers on how to assess practical works. *E.g.*

- Develop a check list indicating stages of the process
- ii. Identify skill(s) that must be acquired
- iii. Determine scores for each stage depending on the complexity of the skill
- iv. Completed artefact must be scored on the following criteria:
- Evidence of Preliminary/idea development processes
- 2. Appropriate use of tools/material
- Draftmanship/ craftsmanship (Compositionappropriate use of principles and elements of design, Colour and tone, etc. for 2-D works)
- 4. Originality
- 5. Suitability
- 3.2 Ask teachers to review their sample lesson plans to identify skills they will need to promote GESI

viii. Photographs/videos, etc.

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  - 4. Originality
  - 5. Suitability
- 3.2 Review your sample lesson plans to identify activities that promote GESI responsiveness (NTS 3f, 3m).

#### Acknowledgements

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The writing team was made up of the following contributors:

	T-TEL TEAM			
Professor Jonathan Fletcher	T-TEL – Key Advisor, Teaching & Learning Partnerships			
Dinah Adiko	T-TEL – Key Advisor, Gender Equality and Social Inclusion			
Beryl Opong-Agyei	T-TEL – National Teacher Education Coordinator			
Alberta Djaaba Tackie	T-TEL – Curriculum Development, Teaching and Learning Coordinator			
Marjorie Tackie	T-TEL – Gender Equality and Social Inclusion Coordinator			
Peter Chammik Jayom	T-TEL – University Coordinator			
Lila Adom Yamuah	T-TEL – Education Advisor			
Issahaku Fatawu Gbambegu	T-TEL – Secondary Education Transformation Programme (SETP) Coordinator			
Roger Kwamina Aikins	GM – Commercial (Oversees design, print and distribution)			
Rev Dr Nyuieko Avotri	Former Principal, Mampong Technical College of Education			

WRITERS	INSTITUTIONS	WRITERS	INSTITUTIONS
Kobinah Sah Eghan	Bosome Senior High Technical School, Bosome	Suutor Helen	Lambussie Senior High School, Lambussie
Fredrick Affram	Ogyeedom Senior High Technical School, Gomoa Afransi	Sampson Dedey Baidoo	Benso Senior High Technical School, Benso
Atugiba John Aloba	Nabango Senior High Technical School, Nabango	Avole Baba Ansbert	Bolgatanga Senior High School, Bolgatanga
Mohammed Habibulai Alhassan	Walewale Vocational Technical Institute, Walewale	Miftaw Imoro	Gambaga Girls Senior High School, Gambaga
Patrick Gakpey	Ziavi Senior High Technical School, Ziavi	Benjamin Agyekum	Mangoase Senior High School, Mangoase
Jacob Moisob Gundow	Zabzugu Senior High School, Zabzugu	N-yalamba Jerry Njomoun	E.P Agric Senior High School, Tatale
Atubga Agamba	National Teaching Council, Accra	Bernard Kuug	National Teaching Council, Accra

	T	Γ	T
Damah Robert Bagah	Upper West Regional	Robert N Basumah	Upper East Regional
	Education Office – Wa		Education Office –
			Bolgatanga
Patricia Nyampong	District Education Office -	Isaac Yeboah	Ghana Education Service
	Akuapem North		Headquarters
Hussein Mohammed	District Education Office -	Sayibu Mahamoud	Northern Regional
	Tatale	Sule	Education Office -Tamale
James K. Sampana	North East Regional	Richard Ayittey	District Education Office -
Tames in Campana	Education Office –		Gomoa Central
	Walewale		Somea Central
Kwame Kusi	District Education Office -	Many Adio	Municipal Education Office
		Mary Adjo Mawufemo. Dzansi	Municipal Education Office
Agyekum	Bosome Freho		- Ho
Dr. Stephen Bani	Accra Technical	Dr Ann Dodor	Takoradi Technical
	University, Accra		University, Takoradi
Kwaku Addo-Kissiedu	University for	Isaac Nkrumah	St. Vincent College of
	Development Studies,		Education, Yendi
	Tamale		
Joseph Aboyinga	Gambaga College of	Lovedele Adzo	SDA College of Education,
	Education, Gambaga	Tsotovor	Asokore Koforidua
	, ,		
Victor Alebna	St. John Bosco College of	Christopher Addo	Peki College of Education,
7.000.7.100.10	Education, Navrongo		Peki
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Kafui Danku Diaba	Holy Child College of	Grace Annagmeng	Tumu College of Education,
	Education, Takoradi	Mwini, Tumu	Tumu
Samuel Takyi	Foso College of	Rev. Godwin	Dambai College of
	Education, Assin Fosu	Gbadagba	Education, Dambai
Edmond Dakora	McCoy College of		
	Education, Nadowli		