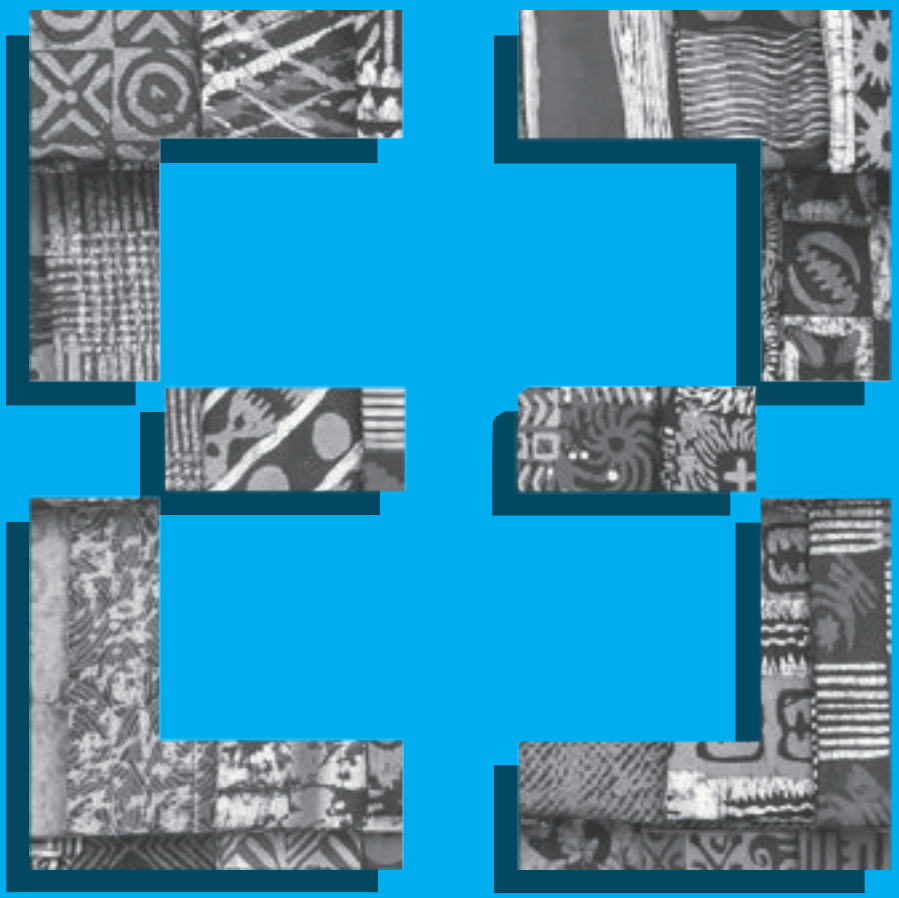
PROFESSIONAL DEVELOPMENT PROGRAMME

Tutor Professional Development Handbook: B.Ed. in Initial Teacher Education - Science Year 2 Semester 2

HANDBOOK FOR **COORDINATORS**



GHANA TERTIARY EDUCATION COMMISSION

NATIONAL TEACHING COUNCIL
NTC
Building Confidence, Raising Teaching Standards

The Government of Ghana

Foreword

It is a great pleasure and privilege to be asked to write the Foreword to this latest set of Professional Development Handbooks for the Bachelor of Education (B.Ed.) in Initial Teacher Education Year 2 Semester 2 courses.

These Professional Development Handbooks are at the heart of Ghana's ambitious teacher education reforms and have played a key role in the successes achieved to date. The Handbooks aim to ensure that tutors in Colleges of Education are reflecting critically on their methods of teaching and learning and supporting each other to implement the B.Ed. in line with the National Teacher Education Curriculum Framework and National Teacher Education Assessment Policy.

Tutors act as role models for student teachers. If tutors use the 'lecture-method' then this is what student teachers will imitate when they enter basic school classrooms. If tutors use a wide variety of interactive approaches, aligned with the National Teachers' Standards, then these approaches will become standard behaviour for beginning teachers when they graduate.

Over the last six years there is compelling empirical evidence that there has been a substantial shift in tutors' behaviour and approaches. This has had a tremendous impact on student teachers. An annual external evaluation of beginning teachers' classroom practices is carried out nationwide. In the 2015 evaluation only 2% beginning teachers demonstrated competencies and behaviours in the National Teachers' Standards. By 2019 this had increased to 42%. When one considers that these figures are derived from a national sample of all beginning teachers in the country it demonstrates that there has been a genuine transformation in Ghana's teacher education system.

This latest set of Professional Development Handbooks, developed by four mentoring universities (Kwame Nkrumah University of Science and Technology, University of Education, Winneba, University for Development Studies and University of Ghana) and tutors from their affiliated Colleges of Education, represents the first set of Handbooks developed since the onset of the COVID-19 pandemic. COVID-19 has had a significant impact on all of our lives and Colleges of Education should be commended for the way in which they rapidly responded to institutional closures and made the transition to emergency remote teaching and learning. These Handbooks have been designed to reflect the current realities of the blended learning approach which is being used in Colleges of Education and it is hoped that they will play a role in increasing the effectiveness of these new approaches.

These are also the first Professional Development Handbooks to be developed since Transforming Teaching, Education & Learning (T-TEL) was established as a Ghanaian not-for-profit organisation. I would like to take this opportunity to thank both the Ghana Tertiary Education Commission and Mastercard Foundation for their collaboration and support with the 'new T-TEL' which has made the development of these Handbooks possible.

Robin Todd
Executive Director, T-TEL
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The New approach to the Weekly Professional Development (PD) Sessions for Tutors
Guidance Notes for the CoE Professional Development Coordinators (PDC)

Overview

1. Background to the new approach to PD Sessions
2. Features of the B.Ed. PD Sessions
3. The Role of the PDC
4. The Role of the PDC in coordinating the introductory Session for tutors

1. Background to the new approach to PD

- For four years the CoE have been supported in leading weekly Tutor PD Sessions. The PD Sessions have focused on key themes, such as: the NTS, Action research and classroom enquiry among others. The ten theme-based PD modules have been vital in paving the way for the Reform of Teacher Education in Ghana. They have equipped tutors with important skills and knowledge to support the smooth transition to the New B.Ed.
- The New Four-Year B.Ed. will be implemented in CoEs, now affiliated to the Public Universities, and a new approach to the tutors' weekly PD is required. This new approach involves the Universities supporting their affiliated CoE in implementing the subject specific PD Sessions.
- The weekly PD Sessions are designed to prepare subject tutors to use the B.Ed. Course Manuals to teach the 12 lessons in the Course Manuals to student teachers. This means the PD Sessions will now be subject specific. This means there will be subject specific PD groups running each week in the CoEs and universities.
- The PD Sessions are designed to help operationalize the reform of teacher education at tutor and student teacher level and to support:
    - professionalising teaching by supporting teachers in developing communities of practice and raising the status of the teaching profession
    - improving the quality of new teachers by ensuring that they undergo a rigorous and practically focused, high-quality degree level programme
    - improving the learning outcomes and life chances for all children.

2. Features of the B.Ed. PD Sessions

- The universities will prepare the Subject Leads or HoDs from their affiliated CoE to lead the weekly subject tutor Sessions,
- The subject-tutor-groups can work at separate tables in one room. However, in exceptional cases a subject may need to work in another space in order to use specific materials or resources, e.g. video or science equipment,
- The main resources for the weekly tutor Sessions are the Subject Specific Course Manuals and the PD Guidance Notes on each Course Manual,
- Each PD Guidance Note is subject specific and contains two sections. The first section provides guidance for the Introductory Session for tutors. The second section is written to provide information to guide the weekly PD Sessions that are linked directly to the lessons in the Course Manual,
- The three-hour Introductory Session is to;
    - introduce the new approach to PD and organisation of the weekly Sessions

introduce the course manuals

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 1 SESSION FOR LESSON 1 IN THE COURSE MANUAL

LEVEL/TITLE OF LESSON:
JHS Biology: Heredity and Variation I, and correction of related misconceptions, Concepts of heredity and variation
JHS Physics: Similarities and differences between rubber band and spring, Properties of elastic materials
Upper Primary: Meaning of energy and sources of energy
Early Grade: Uses of sunlight, Sunlight as a basic need of most plants

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	Begin the PD session with an icebreaker. 1.1 Ask tutors to write one thing they learnt in the semester 1 PD session generally and how they applied it in their teaching.	1.1 Write one thing you learnt in your semester 1 PD session, at any level, and how you applied it in your teaching.	**15 mins**
	1.2. Ask tutors to share their views with the whole group.	1.2 Share your views with the whole group and add recommendations as appropriate.	
	1.3. Ask tutors to read the introduction, lesson description and the purpose of lesson 1 in the course manual: ● Uses of sunlight ● Sunlight as a basic need of most plants	1.3 Read the introduction, lesson description and the purpose of lesson 1 in the course manual.	

	● Meaning of energy and sources of energy ● Similarities and differences between rubber band and spring ● Properties of elastic materials ● Heredity and Variation I, and correction of related misconceptions ● Concepts of heredity and variation		
	1.4. Ask tutors to read silently the teaching and learning activities of the lesson from the course manual and indicate how they are related to student teachers' relevant previous knowledge. 1.5. Ask tutors to identify areas that require clarification and discussion. ● Uses of sunlight ● Elasticity ● Energy I ● Sources of energy ● Heredity and Variation I	1.4 Read silently the teaching and learning activities of the lesson from the course manual and indicate how they are related to student teachers' relevant previous knowledge. 1.5 Identify areas that require clarification and discussion.	
	1.6. Ask tutors to identify and discuss any challenges they might face in the delivery of the whole lesson and discuss how they would address the envisaged challenges of the lesson	1.6. Identify any challenges that you envisage in the delivery of the whole lesson in your groups and discuss how you would address the envisaged challenges of the lesson.	

2. Concept Development (New learning likely to arise in this lesson).	2.1. Ask tutors to list and share the major concepts in the lesson. ● The concept of Elasticity and Hooke's Law by performing simple experiment using rubber band ● Sunlight as a basic need of most plants. ● List sources of energy as food, sun, wind, water, battery, crude oil and natural gas. ● Teaching how to teach elasticity and Hooke's law to JHS learners. ● Perform simulation (https://phet.colorado.edu/) provided on the PC available for i to iv. ● Concepts of heredity and variation: genes, genotypes, phenotypes, homozygotes, heterozygotes, transmission and expression of traits	2.1. List the major concepts in the lesson. 2.1.1. Share your list with the whole group.	**30 mins**
	2.2 Ask tutors to write possible challenging areas in teaching of the concepts identified and let them show how they can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.	2.2 Write possible challenging areas in teaching of the concepts identified and show how you can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.	

	2.3. Ask tutors to list the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	2.3. List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	
3. Teaching, learning and assessment activities for the lesson ● Reading of teaching and learning activities and identification of areas that require clarification especially GESI related activities. ● Reading of teaching and learning activities and identification of GESI and ICT issues that require clarification.	3.1 Ask tutors to read silently the teaching and learning activities of lesson 1 from the course manual and identify areas that require clarification. *NB:* *Lead tutors to discuss areas identified after the silent reading that needs clarification.* 3.2. Let tutors identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities. 3.3 Ask tutors to play a pre-recorded video on sources of energy, etc., to support teaching.	3.1 Read silently the teaching and learning activities of Lesson 1 from the course manual and identify areas that require clarification 3.2 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how you can help student teachers to support basic school leaners to develop these skills through STS activities. 3.3 Play a pre-recorded video on sources of energy, etc., to support teaching.	**40 mins**
	3.4 Ask tutors to discuss the relevance of the simulations (https://phet.colorado.edu/) and video(s) to the lesson;	3.4 Discuss the relevance of the simulations and video(s) to the lesson	

	Simulations, video and Computer presentation		
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	**4.1.** Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP) **4.2.** Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially**.**	
5. Evaluation and review of session.	5.1 Find out if anything needs to be discussed. E.g., Local sources of energy and their application in the community. 5.2 Let Tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3 Ask tutors to read the PD manual and find relevant materials for the next session *NB: Make sure that everybody has a concrete plan for teaching the given topics.*	5.1 Individually, identify any outstanding issues relating to Lesson **1** for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session. 5.3 Read the PD manual and look for relevant materials for the next session.	**5 mins**

	In the case of unresolved issues consult the subject writing leads.		

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 2 SESSION FOR LESSON 2 IN THE COURSE MANUAL

LEVEL/TITLE OF LESSON:
JHS Biology: Heredity and Variation II
JHS Physics: Properties of Elasticity
Upper Primary: Energy II
Early Grade: Teaching Food I

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	Start with an icebreaker. 1.1. Ask tutors to write one thing they learnt in the first PD session and how they applied it in their teaching.	1.1 Write one thing you learnt in your first PD session and how you applied it in your teaching.	**15 mins**
	1.2. Ask tutors to share their views with the whole group.	1.1 Share your views with the whole group.	
	1.3 Ask tutors to read the introduction, lesson description and the purpose of the lesson in the course manual and indicate how they are related to student teachers' relevant previous knowledge. • Heredity and variation II • Elasticity • Energy II • Sunlight	1.3 Read the introduction and the purpose of lesson two in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	

	1.4 Ask tutors to identify and discuss the relationship among the following using the course manual: C*LOs, LIs, teaching and learning activities, assessment.* *NB: Tutors should be specific within the context of the various topic:* 1 *Heredity and variation II* 2 *Elasticity* 3 *Energy II* 4 *Forms of energy*	1.4 Identify and discuss the relationship among the following using the course manual: C*LOs, LIs, teaching and learning activities, assessment.*	
	1.5. Ask tutors to identify and discuss any challenges they anticipate in the delivery of the various specific lessons. 1.5.1 Let them discuss how they might address the identified challenges.	1.5 Identify any challenges that you envisage in the delivery of the lesson in your groups. 1.5.1 Discuss how you might address the identified challenges.	
2. Concept Development (New learning likely to arise in this lesson).	2.1. Ask tutors to list the major concepts in the lesson and share with the whole group: • The concept of Elasticity and Hooke's Law. • Determination of sex in human and genetic related diseases. • *Importance of food.* • *Forms and conservation of energy.*	2.1 List the major concepts in the lesson. 2.1.1 Share your list with the whole group.	**31 mins**

	2.2. Ask tutors to list the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	2.2 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	
3 Teaching, learning and assessment activities for the lesson ● Reading of teaching and learning activities and identification of areas that require clarification especially GESI related activities. ● Reading of teaching and learning activities and identification of GESI and ICT issues that require clarification.	3.1. Ask tutors to read silently the teaching and learning activities of lesson two from the course manual and identify areas that require clarification. 3.2. Let tutors discuss how GESI issues that relate to the teaching and learning activities of the lesson will be addressed. E.g*., Equal representation of males and females in pictures and mix ability grouping.* 3.3. Ask tutors to identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities. 3.4 Ask tutors to use games such as *backs to the board* from the theme 1 Page 20, pre-recorded video scenarios on the persons that have	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2 Discuss how GESI issues that relate to the teaching and learning activities of the lesson will be addressed. 3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how you can help student teachers to support basic school leaners to develop these skills through STS activities. 3.4. Use games such as backs to the board from the theme 1 Page 20, pre-recorded video scenarios on the persons that have defied gender and	**40 mins**

	defied gender and social stereotyping to achieve successes in society: *e.g. female albino, videos on sex in human, videos on forms of energy, etc. to support teaching.*	social stereotyping to achieve successes in society	
	3.5. Ask tutors to discuss the relevance of the video(s) to the lesson.	3.5. Discuss the relevance of the video(s) to the lesson.	
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities.	4.1. Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP) 4.2. Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.1. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2. Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session: ● identification of any outstanding issues relating to this lesson for clarification ● Advance preparation ● In the case of unresolved issues	5.1. Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2. Let tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3. Ask tutors to read the PD manual and find	5.1. Individually, identify any outstanding issues relating to the lesson for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session. 5.3 Read the PD manual and look for relevant	**5 mins**

	relevant materials for the next session. *NB: Make sure that everybody has a concrete plan for teaching the given topics.* *In the case of unresolved issues consult the subject writing leads.*	materials for the next session.	

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 3 SESSION FOR LESSON 3 IN THE COURSE MANUAL

LEVEL/ TILE OF LESSSON:
JHS Physics: Kinematics
JHS Biology: Human Body-Mammalian Reproductive Structures
Upper primary: Force
Early grade: Food

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session****. What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	Start with an icebreaker relevant to the lesson. 1.1 Explain to colleagues how you applied what you learnt last week in your PD session in teaching lesson two (2). Ask tutors to reflect on previous PD Sessions with the following guided question: 1.1.2 List any challenges encountered if any. *Note: Take a random selection of responses.*	1.1 Explain to colleagues how you applied what you learnt last week in your PD session in teaching lesson two (2). 1.1.2 List any challenges encountered if any.	**15 mins**
	1.2. Ask tutors to read through the lesson descriptions, possible barriers, and purpose of the lesson to the whole group.	1.2 Read through the lesson descriptions, possible barriers, and purpose of the lesson to the whole group.	

	1.3 Ask tutors to identify and discuss the following in the course manual for lesson 3: possible barriers, contextual issues, cross- cutting issues NB: *Prompting Tutors by posing lead questions on relevant areas you would want them to respond to e.g. what are the main contextual issues raised? What are the possible barriers? Are the goals realistic /attainable/ applicable/clever/ age and gender appropriate?* 1.4 Put tutors into groups to read and discuss the introduction and learning outcomes of lesson 3 from the course manual and indicate how they are related to student teachers' relevant previous knowledge. *NB:* *The following questions should guide you:* *Are the modes of delivery suitable? Will they help in attaining the learning outcomes? Are the learning outcomes and indicators in alignment? Are they attainable?* 1.5 Ask Tutors to be in pairs and identify intervention strategies and	1.3 Write and cross-share your views on the following in the course manual for lesson 3: possible barriers, contextual issues and cross-cutting issues. 1.4 In groups read and discuss the introduction and learning outcomes of lesson 3 from the course manual and indicate how they are related to student teachers' relevant previous knowledge. 1.5 In pairs, identify intervention strategies and appropriate assistive	

	appropriate assistive devices for learners with SEN. *NB:* *Ask Tutors to tell you how they will get the assistive devices for learners with SEN.*	devices for learners with SEN.	
2. Concept Development (New learning likely to arise in this lesson)	2.1. Ask Tutors to be in pairs, write and Cross-share their views on major concepts from the course manual on lesson 3. 2.1.1 *E.g. of basic concepts: Kinematics, Human Body-Mammalian Reproductive Structures, Force and Food.* 2.3 Ask tutors to write possible challenging areas in teaching of the new concepts identified in both CoE and basic school classrooms. 2.4 Lead tutors in identifying the needed inclusive resource for teaching and learning of the concepts in both CoE and basic school classrooms. E.g. Games, Audio-visuals from YouTube, NB: *Take tutors through the lesson activities such as pull and push concept in force, Cultural set up in*	2.1 In pairs write down the major concepts of the lesson. 2.1.1 Share your list with the whole group. 2.2 Write possible challenging areas in teaching of the concepts identified in both CoE and basic school classrooms. 2.3 Identify the needed inclusive resources for teaching and learning of the concepts in both CoE and basic school classrooms.	**30 mins**

	relation to the concept reproduction, prepare checklist of local food substances that support human *Growth etc.*		
3. Teaching and learning activities for the lesson a. Reading of teaching and learning activities and identification of areas that require clarification b. Discussion of activities Working through one or two activities, *c. Identify where, and which, core and transferable skills are being developed or applied* *d. Makes links to the existing PD Themes with page reference where they can support teaching, for example: action research, questioning and to other external reference material*	3.1 Ask tutors to read silently the teaching and learning activities of lessons 3 in the course manual and identify areas that require clarification. 3.2. Ask Tutors to cross-share idea through questioning e.g.: i) Are the teaching and learning activities appropriate to achieve the LOs and LIs? Explain. 3.3. Ask tutors to be in pairs to identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities. 3.4. Ask tutors to providing techniques or strategies that are used to support SEN. 3.5 Ask tutors to identify resources required for any TLMs and	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2 In pairs discuss the following questions: i) Are the teaching and learning activities appropriate to achieve the LOs and LIs? Explain. 3.3 Be in pairs to identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities. 3.4 Provide techniques or strategies that are used to support SEN. 3.5 Identify material resources required for	**40 mins**

	provide guidance on how to develop them for the lesson.	producing any TLMs for the lesson.	
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	4.1. Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP) 4.2 Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.1. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session: • identification of any outstanding issues relating to this lesson for clarification • Advance preparation • In the case of unresolved issues	5.1 Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2 Let Tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3 Ask tutors to read the PD manual and find relevant materials for the next session. *NB: Make sure that everybody has a concrete plan for teaching the given topics.*	5.1 Individually, identify outstanding issues related to the lesson for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation during the next PD session. 5.3 Read the PD manual and find relevant materials for the next session.	**5 mins**

	In the case of unresolved issues consult the subject writing leads.		

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 4 SESSION FOR LESSON 4 IN THE COURSE MANUAL

LEVEL/ TILE OF LESSSON:
JHS Physics: Vector and Scalar Quantities
JHS Biology: Human Body-Fertilization and Pregnancy
Upper primary: The Solar System 1
Early grade: Care of the Skin

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session.*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session).*	***Time in session***
1. Introduction / lesson overview	Use any icebreaker relevant to the course to start the session. 1.1 Ask tutors to use the following guiding questions to reflect on lesson 3. • What challenges did learners manifest in classrooms? What were some of the strategies employed to help overcome learner's barrier to lesson 3?	1.1 Reflect on lesson 3 using the following guiding questions? • What challenges did learners manifest in classrooms? What were some of the strategies employed to help learners overcome barrier to lesson 3?	**15 mins**
	1.2 Ask tutors to read the lesson descriptions, purpose of lesson 4 from the course manual and indicate how they are related to student teachers' relevant previous knowledge. Let them	1.2 Read the lesson descriptions, the purpose of lesson 4 from the course manual and indicate how they are related to student teachers' relevant previous knowledge and raise	

	raise issues that need clarification and/or/ discussion.	issues that need clarification and/or/ discussion.	
	1.3 Ask tutors to discuss in pairs the relationship among the CLOs, LIs and the teaching activities. *NB. Anticipate challenges and controversial questions of the lesson and provide answers to them before the lesson.*	1.3 In pairs, discuss the relationship among the CLOs, LIs and the teaching activities.	
2. Concept Development (New learning likely to arise in this lesson)	2.1. Ask tutors to list the major concepts in the lesson and share with the whole group. 2.2. Ask tutors to write possible challenging areas in teaching of the concepts identified. 2.3. Ask tutors to suggest solutions to the possible challenging areas in teaching of the concepts identified. 2.4. Let tutors identify the resource needed for lesson 4 in the course manual and indicate how they will be used in the lesson to promote learning for all learners. 2.5. Let tutors discuss how they will ensure that all the resources suggested in the	2.1. List the major concepts in the lesson. 2.1.1 Share your list with the whole group. 2.2. Write possible challenging areas in teaching of the concepts identified. 2.3. Suggest solutions to the possible challenging areas in teaching of the concepts identified. 2.4. Identify the resource needed for lesson 4 in the course manual and indicate how they will be used in the lesson to promote learning for all learners. 2.5. Discuss how you will ensure that all the resources suggested in the course manual	**31 mins**

	course manual can be made GESI responsive. 2.6. Ask tutors to suggest alternative relevant inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	can be made GESI responsive. 2.6 Suggest alternative relevant inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	
3.Teaching and learning activities for the lesson	3.1. Let tutors discuss the teaching and learning activities and show how they will ensure that all the teaching and learning activities are GESI responsive. *NB: The activities should be designed and well-arranged so as to promote the understanding and participation of all (male & female, slow & fast learners, physically challenged and the marginalised) students during the lesson.* 3.2. Let tutors discuss how the main concepts will be taught in their course groups, bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.	3.1. Discuss the teaching and learning activities and show how you will ensure that all the teaching and learning activities are GESI responsive. 3.2. In your course groups, discuss how the main concepts will be taught, bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.	**40 mins**

	3.3. Ask tutors to suggest how they will develop core and transferable skills in all student teachers during the lesson and how they can also help student teachers to support basic school learners to develop these skills through STS activities.	Suggest how you will develop core and transferable skills in all student teachers during the lesson and show how you can help student teachers to 3.3 Support basic school learners to develop these skills through STS activities.	
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	4.1 Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Eg. Assessments arrangements are reviewed in line with NTEAP) 4.2 Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.1. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5. Evaluation and review of session	5.1 Ask tutors to identify and discuss any outstanding issues related to the lesson for further clarification. 5.2 Let Tutors identify a critical friend who took part in the PD session to sit in their class during lesson and	5.1 Identify and discusses any outstanding issues related to the lesson for further clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on	**5 mins**

	report on observation during next PD session 5.3 Ask tutors to read the PD manual and look for relevant materials for the next session. *NB: Make sure that everybody has a concrete plan for teaching the given topics.* *In the case of unresolved issues consult the subject writing leads.*	observation made during the next PD session. 5.3 Read the PD manual and find relevant materials for the next session.	

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 5 SESSION FOR LESSON 5 IN THE COURSE MANUAL

JHS PHYSICS: Work, Energy & Power and their relationship
JHS BIOLOGY: Teaching Food and Nutrition I
UPPER PRIMARY: The Solar System 1
EARLY GRADE ECE: Further Teaching Activities on Simple Electronics

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	Start with an icebreaker E.g. Let tutors write on a piece of paper the type of meal each person likes for breakfast, lunch and supper. Find out from the papers the highest number of tutors who like a particular meal for breakfast, lunch and supper. Declare your findings to the tutors. 1.1 Invite the critical friend who sat in the previous lesson to share his/her observation with the whole group.	Tutors provide their responses on a piece of papers given to them by the SL 1.1 Invite your critical friend who sat in the previous lesson to share his/her observation with the whole group.	**15 Mins**
	1.2 Ask tutors to read the introduction, lesson description and the purpose of lesson five in the course manual and indicate how they are	1.2 Read the introduction and the purpose of lesson five in the course manual and indicate how they are related to student	

	related to student teachers' relevant previous knowledge *Tutors should be specific within the context of the various topic:* • Work, Energy & Power and their relationship • Teaching Food and Nutrition I • The Solar System 1 • Further Teaching Activities on Simple Electronics	teachers' relevant previous knowledge	
	1.3 Ask tutors to identify and discuss any challenges they anticipate in the delivery of the various specific lessons.	1.3. Identify any challenges that you envisage in the delivery of the lesson in your groups 1.3.1 Discuss how you might address the identified challenges.	
2. Concept Development (New learning likely to arise in this lesson)	2.1 Ask tutors to identify the major concepts in the lesson and indicate how they are related to student teachers' relevant previous knowledge. Examples of major concepts: i. *Relationship among work, energy and power.* *ii. The importance of food and nutrition* *iii. The planet, stars and the galaxy.* *iv. Operations of electronic toys (Concept mapping of the use, danger and safety of electronic toys)*	2.1 List the major concepts in the lesson and indicate how they are related to student teachers' relevant previous knowledge. 2.1.1 Share your list of major concepts in the lesson with the whole group and indicate how they are related to student teachers' relevant previous knowledge	**32 mins**

	2.2 Ask tutors to write possible challenging areas in teaching of the concepts identified and let them show how they can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities. *Examples of the challenging areas to guide SL:* *1. How work is related to energy and power.* *2. The misconception that the earth is flat etc.*	2.2 Write possible challenging areas in teaching of the concepts identified and show how you can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.	
	2.3 Ask tutors to list the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms. *Examples to guide SL:* *Electronic toys brought by students and/or bought from the market. E.g., toy cars, phones, babies, etc.* *Balloon globe, balls of various sizes, touch light.* https://www.education.com/activity/article/solar-system-kids/ https://www.education.com/activity/article/solar-eclipse/ https://www.youtube.com/watch?v=Qd6nLM2QlWw	2.3 List the needed resources for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	

	Note: The inclusive resources should cover JHS Physics, JHS Biology, Upper Primary and Early Grade.		
3. Teaching and learning activities for the lesson.	3.1. Ask tutors to read silently the teaching and learning activities of lesson five from the course manual and identify areas that require clarification. *NB:* *Lead tutors to discuss areas identified after the silent reading that needs clarification.* 3.2. Let tutors discuss how GESI issues that relate to the teaching and learning activities of the lesson will be addressed. E.g.*, Equal representation of males and females in pictures and mix ability grouping.* 3.4 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities. 3.4 Ask tutors to discuss how the lesson could be presented so as to make it possible for student teachers to	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2 Discuss how GESI issues that relate to the teaching and learning activities of the lesson will be addressed. 3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how you can help student teachers to support basic school learners to develop these skills through STS activities. 3.4 Tutors share how they will present a specific lesson to enable student teachers develop a	

	develop core and transferable skills. E.g. *Theme 3. Initiate talk for learning. Page 11-19. Students work in groups and later made presentations. They will eventually develop collaborative and communicative skills* 3.5 Ask tutors to discuss the relevance of the video(s), simulations, power point presentations and analogical representations of the lesson. 3.6 Discuss with tutors how to design TLRs for the lesson (E.g., empty tin of milo, piece of wood to the length of a ruler, nails and pebbles to build a seesaw to represent a first-class lever).	particular core and transferable skill. 3.5 Discuss the relevance of the video(s), simulations, power point presentations and analogies of the lesson. 3.6 In groups discuss how to build TLRs for the lesson. (E.g. first-class lever using local materials)	
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities	4.1 Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP) 4.2 Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially	4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	

5. Evaluation and review of session.	5.1. Ask tutors to discuss any outstanding issues relating to this lesson. 5.2. Let Tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3 Ask tutors to read the PD manual and look for the relevant materials for the next session. *NB:* *Make sure that everybody has a concrete plan for teaching the topics.* *In the case of unresolved issues consult the subject writing leads.*	5.1 Individually, identify any outstanding issues relating to the lesson and bring them up for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session. 5.3 Read the PD manual and find relevant materials for the next session.	**5 mins**

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Age Phase:

Name of Subject:
BIOLOGY, PHYSICS, UPPER PRIMARY INT. SCIENCE AND EARLY GRADE SCIENCE II

Year 2 Semester 2

TUTOR PD SESSION 6 (REVIEW OF COURSE MANUAL FOR LESSONS 1, 2, 3, 4 AND 5)

Focus: the bullet points provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)* ***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	Introduce the session with an ice-breaker. 1.1. Give post-it card to your colleagues and ask them to write their reflections of PD session 1, 2, 3, 4 and 5 on it base on the following: positives, challenges and suggestion to improve on the next PD sessions. Let tutors use think-pair-share to present their reflections. 1.2. Guide tutors to brainstorm on how to promote GESI in the CoE and basic classrooms beginning with lesson planning, selection of teaching learning resources (TLRs), classroom setup and	1.1 Write down your reflections on the post-it card given you base on the following: positives, challenges and suggestions to improve on the next PD sessions. 1.1.1. Share your reflections with a colleague and then with the larger group. 1.2. Brainstorm on how to promote GESI in the CoE and basic classrooms.	

	interaction with students. *e.g. GESI responsive lesson planning will require tutors to consider:* – *the learning materials to use* – *Methodologies* – *Content* – *Learning activities* – *Language use* – *Classroom setup etc.*		
	1.3 Ask tutor to discuss the parts of the NTS that support lessons 1, 2, 3, 4 and 5, and explain how they were implemented in your various lessons.	1.3. Discuss the parts of the NTS that support lessons 1, 2, 3, 4 and 5 and explain how they were implemented in your various lessons.	
	1.3.1 Ask tutors to explain how they supported their student teachers to also implement the NTS during their STS activitie	1.3.1. Explain how you supported your student teachers to also implement the NTS during their STS activities.	
	1.4 Ask tutors to be in groups and discuss whether or not the TLRs used during the delivery of their various lessons were GESI responsive.	1.4 Discuss whether or not the TLRs used in the delivery of their varied lessons were GESI responsive.	
	1.5 Let tutors share their experiences on the kinds of feedbacks and assessments provided to the student teachers during the various teaching and learning processes.	1.5 Shared your experiences on the kinds of feedbacks provided as well as assessment mode used to evaluate student teachers during the various teaching and learning processes.	

• Identify suitable digital tools to use to facilitate the various lessons.	1.6 Write some core and transferable skills on pieces of paper for tutors to pick at random, read them aloud and tell the meaning of the core and transferable skill they picked. The tutors should also tell how they can help student teachers to support basic school leaners to develop these skills through STS activities. 1.6 Ask tutors to discuss cross cutting issues, including equity and inclusivity, how they have practiced these issues in their various lessons and how the student teachers would also implement them in the basic school classrooms. 1.7 Ask tutors to identify digital tools used to facilitate their lessons. E.g. *Digital tools: Laptop and overhead projector.*	1.6 Pick at random, read aloud and tell the meaning of the core and transferable skills written on pieces of paper and how they can help student teachers to support basic school leaners to develop these skills through STS activities. 1.6 Discuss cross cutting issues, including equity and inclusivity connected to the lessons delivered and how the student teachers would also implement them in the basic school classrooms. 1.7 Mention the various digital tools used to facilitate your lessons.	

2. Concept Development (New learning likely to arise in this lesson)	2.1 Lead tutors to work in pairs in identifying and discussing the basic concepts in lessons 1, 2, 3, 4, and 5 that they felt were not well treated with their students and suggest ways to improve upon the teaching of those concepts. 2.1.1 Invite individual tutors to explain some of the concepts with appropriate exemplars that can enhance understanding. 2.2 In pairs, let tutors identify challenging areas of teaching the concepts in lessons 1, 2, 3, 4 and 5. 2.2.1 Ask tutors present their answers on chats for gallery walk.	2.1 Work in pairs to identify and discuss basic concepts in lesson 1, 2, 3, 4, and 5 that you felt were not well treated with the students and suggest ways to improve upon teaching of those concepts. 2.1.1 Explain the concepts above to the larger group with with appropriate exemplars that can enhance understanding. 2.2 In pairs, identify challenging areas of teaching the concept in lessons 1, 2, 3, 4 and 5. 2.2.1 Present your answers on chats for gallery walk. Share findings after gallery walk with whole group.	**25 mins**
3. Teaching, learning and assessment activities for the lesson.	● Ask tutors to say what they have done in lessons 1, 2, 3, 4, and 5 to ensure that student teachers' assessment is in accordance with the NTEAP (SWL reviews assessment in the course manual to ensure it complies with NTEAP implementation and the 60% continuous assessment and 40 % End of semester examination. This means	3.1 Discuss the nature of the various tasks given to student teachers and how the scores were collated. 3.1.1 How did you ensure that student teachers' assessment is in accordance with the NTEAP?	**40 mins**

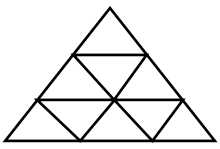
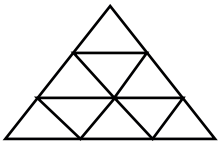
	ensuring subject project, subject portfolio preparation and development are explicitly addressed in the PD sessions).		
4 Evaluation and review of session	4.1 In a whole group discussion, ask tutors to evaluate the PD sessions indicating what lessons have been learnt and how the lessons have impacted teaching and learning of lessons 1, 2, 3, 4 and 5. 4.2 Ask tutors to read through lesson 7 before the next PD session. NB: *Elicit from tutors if there are unresolved issues for discussion.* *NB: In the case of unresolved issues consult the subject writing leads.*	4.1 Evaluate the PD sessions indicating what lessons have been learnt and how the lessons learnt impacted teaching and learning of lessons 1, 2, 3, 4 and 5. 4.2 Read through lesson seven (7) before the next PD session.	**5 mins**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 7 SESSION FOR LESSON 7 IN THE COURSE MANUAL

JHS Biology: Food and Nutrition II
JHS Physics: Viscosity
Upper Primary: The Solar System II
Early Grade: Personal Hygiene, Hand washing, Importance of cleaning teeth and bathing of the body

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	1.1 Introduce the session with this ice-breaker. E.g. How many triangles are in the figure below? (Ans. 13) 	1.1 How many triangles are in the figure below? 	**15 mins**
	1.2. Ask tutors to discuss with the whole group the strengths and the weaknesses of lesson 6.	1.2 Discuss with the whole group the strengths and the weaknesses of lesson 6.	
	1.3. Ask tutors to read and discuss the main issues connected to the introduction, lesson description and the purpose of lesson seven in the course manual	1.3. Read and discuss the main issues connected to the introduction, lesson description and the purpose of lesson seven in the course manual and indicate	

	and indicate how they are related to student teachers' relevant previous knowledge. ● Personal Hygiene ● Hand washing ● Importance of cleaning teeth and bathing of the body ● The Solar System II ● Viscosity ● Food and Nutrition II	how they are related to student teachers' relevant previous knowledge.	
	1.4. Ask tutors to identify and discuss the relationship among the following in the course manual: lesson description, delivery mode, LOs, LIs, teaching and learning activities, assessment procedures. NB: Tutors should be specific within the context of the various topics: ● Personal Hygiene (with special attention to the girl child) ● Handwashing ● Importance of cleaning teeth and bathing of the body ● The Solar System II ● Viscosity ● Food and Nutrition II	1.4. Identify and discuss the relationship among the following in the course manual: lesson description, delivery mode, LOs, LIs, teaching and learning activities, assessment procedures.	
	1.5. Ask tutors to identify and discuss any challenges they anticipate in the delivery of the various specific lessons. 1.5.1. Let them discuss how they might address	1.5 Identify any challenges that you envisage in the delivery of the lesson in your groups.	

	the identified challenges.	1.5.1. Discuss how you might address the identified challenges.	
2. Concept Development (New learning likely to arise in this lesson).	2.1. Ask tutors to list the major concepts in the lesson from the manual and share your list with the whole group. ● The Meaning of personal hygiene ● Proper ways of hand washing. ● Prevention of illness through bathing ● Movement of the moon around the earth ● Relative positions of the sun, moon and th earth ● Application of Viscosity ● Misconceptions about food substances and nutrition ● Some food substances and their sources ● Importance of balanced diet. 2.2. Ask tutors to discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive. *NB: Remind them of GESI responsive strategies e.g. mix ability grouping.*	2.1 List the major concepts in the lesson. 2.1.1 Share your list with the whole group. 2.2 Discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.	**30 mins**

	Remind tutors that they may use the following delivering platforms: face-face/zoom/telegram/WhatsApp or any appropriate platform acceptable and accessible by all.		
	2.3. Ask tutors to list the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	2.3 List the needed inclusive resources for teaching and learning of the concepts identified in both CoE and basic school classroom.	
3.Teaching and learning activities for the lesson.	3.1. Ask tutors to read silently the teaching and learning activities of lesson seven from the course manual and identify areas that require clarification and discussion. *NB: Lead tutors to discuss areas identified after the silent reading that needs clarification.* 3.2. Let tutors discuss how they will ensure that all the teaching and learning activities are GESI responsive. *NB: The activities should be designed and well-arranged so as to promote the understanding and participation of all (male & female, slow & fast learners, physically challenged and the marginalised) students during the lesson.* 3.2. Ask tutors to identify where, and which, core and transferable skills	3.1. Read silently the teaching and learning activities and identify areas that require clarification and discussions. 3.2. Discuss how you will ensure that all the teaching and learning activities are GESI responsive. 3.2 Identify where, and which, core and transferable skills that	

	that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities.	can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities	
4.0 Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	4.1. Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP) 4.2. Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.1. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2. Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5.0. Evaluation and review of session:	5.1. Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2. Let tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3. Ask tutors to read the PD manual and find relevant materials for the next session. *NB: Make sure that everybody has a concrete*	5.1. Individually, identify any outstanding issues relating to the lesson for clarification. 5.2. Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session. 5.3 Read the PD manual and look for relevant materials for the next session.	

	plan for teaching the given topics. *In the case of unresolved issues consult the subject writing leads.*		

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 8 SESSION FOR LESSON 8 IN THE COURSE MANUAL

JHS Physics: Pressure in Fluids
JHS Biology: Teaching Animal production
Upper Primary: The Solar System III
Early Grade: Further Strategies on Teaching Personal Hygiene

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / Lesson Overview	Start with an icebreaker 1.1 Ask tutors to write one thing they learnt in the last weeks' PD session and how they applied it in their teaching.	1.1. Write one thing you learnt in your last weeks' PD session and how you applied it in your teaching.	**15 mins**
	1.1.1. Ask tutors to share their views with the whole group.	1.1.1 Share your views with the whole group.	
	1.2 Ask tutors to read the introduction, lesson description and the purpose of lesson two in the course manual and indicate how they are related to student teachers' relevant previous knowledge. • Teaching Animal production pressure in Fluid. • Solar system ii	1.2. Read the introduction and the purpose of lesson eight in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	

	• Further strategies for personal hygiene		
	1.3 Ask tutors to identify and discuss the alignment of LOs, LIs, teaching and learning activities and assessment procedures. *NB: Tutors should be specific within the context of the various topic:* 2 *Teaching Animal production* 3 *Pressure in Fluid* 4 *Solar system II* 5 *Further strategies for personal hygiene*	1.3 Identify and discuss the alignment of LOs, LIs, teaching and learning activities and assessment procedures.	
	1.4 Ask tutors to identify and discuss any challenges they anticipate in the delivery of the various specific lessons. 1.5.1 Let tutor discuss how they might address the identified challenges.	1.4 Identify any challenges that you envisage in the delivery of the lesson in your groups. 1.5.1 Discuss how you might address the identified challenges.	
2 Concept Development (New learning likely to arise in this lesson)	2.1. Ask tutors to list the major concepts in the lesson and share with the whole group: • Principles behind the production of farm animals • How pressure in fluids can be observed and measured. • Concept of satellite How to keep the finger nails and hair clean	2.1 List the major concepts in the lesson 2.1.1 Share your list with the whole group.	**32 mins**
	2.2 Ask tutors to write possible challenging areas in teaching of the	2.2. Write possible challenging areas in teaching of the concepts	

	concepts identified and discuss how they would address the envisaged challenges.	identified and discuss how you would address the envisaged challenges.	
	2.3 Ask tutors to list the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	2.3 List the needed resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	
3.0. Teaching and learning activities for the lesson.	3.1. Ask tutors to read silently the teaching and learning activities of lesson eight from the course manual and identify areas that require clarification. *NB: Lead tutors to discuss areas identified after the silent reading that needs clarification.* 3.2. Ask tutors to identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities.	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2. Identify where, and which, core and transferable skills that can be developed or applied in the lesson and show how you can help student teachers to support basic school learners to develop these skills through STS activities.	**40 mins**
4. Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of	4.3. Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP)	4.3. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)	

semester examination (40%) Working through one or two activities,	4.4. Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.4. Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5.1. Evaluation and review of session:	5.1 Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2 Let tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3 Ask tutors to read the PD manual and find relevant materials for the next session. *NB: Make sure that everybody has a concrete plan for teaching the given topics.* *In the case of unresolved issues consult the subject writing leads.*	5.1. Individually, identify any outstanding issues relating to the lesson for clarification. 5.2. Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation during the next PD session. 5.3. Read the PD manual and look for relevant materials for the next session.	

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 9 SESSION FOR LESSON 9 IN THE COURSE MANUAL

JHS Physics: Fluids in motion
JHS Biology: Biology and Industry
Upper Primary: Mixtures 1
Early Grade: Teaching Simple Machines

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	**Guidance notes on Leading the session.** *What the SL/HoDs will have to say during each stage of the session*	**Guidance Notes on Tutor Activity during the PD Session.** What PD Session participants (Tutors) will do during each state of the session)	**Time in session**
1. Introduction / Lesson Overview	Start with an icebreaker 1.1. Ask tutors to write one thing they learnt in the last weeks' PD session and how they applied it in their teaching. 1.1.1 Ask tutors to share their views with the whole group. 1.2. Ask tutors to read the introduction, lesson description and the purpose of lesson two and indicate how they are related to student teachers' relevant previous knowledge. ● Fluids in motion ● Biology and Industry ● Mixtures 1 Teaching Simple Machines	1.1. Write one thing you learnt in your last weeks' PD session and how you applied it in your teaching. 1.2.1. Share your views with the whole group. 1.2. Read the introduction and the purpose of lesson eight in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	**15 mins**

	1.3. Ask tutors to identify and discuss the relationship among the following using the course manual: LOs, LIs, teaching and learning activities, assessment procedures. *NB: Tutors should be specific within the context of the various topics:* 1 Fluids in motion 2. Biology and Industry 3. Mixtures 1 Teaching Simple Machines	1.3. Identify and discuss the relationship among the following using the course manual: LOs, LIs, teaching and learning activities, assessment procedures.	
	1.4. Ask tutors to identify and discuss any challenges they anticipate in the delivery of the various specific lessons. 1.4.1 Let them discuss how they might address the identified challenges.	1.4 Identify any challenges that you envisage in the delivery of the lesson in your groups. 1.4.1. Discuss how you might address the identified challenges.	
2.0 Concept Development (New learning likely to arise in this lesson).	2.3 Ask tutors to list the major concepts in the lesson and share with the whole group: • Benefits of biotechnology, alcoholic beverages and biodiesel • The relationship between pressure and blood flow • Types of mixtures • Simple devices/machines and their corresponding function.	2.1 List the major concepts in the lesson. 2.3.1 Share your list with the whole group.	**32 mins**
	2.4 Ask tutors to write possible challenging areas in teaching of the concepts identified.	2.2. Write possible challenging areas in teaching of the concepts identified.	

	2.5 Ask tutors to suggest solutions to the possible challenging areas in teaching of the concepts identified.	2.3. Suggest solutions to the possible challenging areas in teaching of the concepts identified.	
	2.4. Ask tutors to list the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	2.4 List the needed resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.	
3.Teaching and learning activities for the lesson.	3.1. Ask tutors to read silently the teaching and learning activities of lesson eight from the course manual and identify areas that require clarification *NB: Lead tutors to discuss areas identified after the silent reading that needs clarification.* 3.2. Let tutors identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities.	3.1 Read silently the teaching and learning activities and identify areas that require clarification. 3.2. Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities.	40 mins
4 Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and	4.1 Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP)	4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP)	

end of semester examination (40%) Working through one or two activities,	4.2 Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5 Evaluation and review of session: identification of any outstanding issues relating to this lesson for clarification 5 Advance preparation 6 In the case of unresolved issues	5.1. Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2. Let tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3. Ask tutors to read the PD manual and find relevant materials for the next session. *NB: Make sure that everybody has a concrete plan for teaching the given topics.* *In the case of unresolved issues consult the subject writing leads.*	5.1. Individually, identify any outstanding issues relating to the lesson for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation during the next PD session. 5.3. Read the PD manual and look for relevant materials for the next session.	

Assessment Policy

- **College base Assessment takes 60% while External Assessment takes 40%.**
- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 10 SESSION FOR LESSON 10 IN THE COURSE MANUAL

LEVEL/LESSON TITLE:
JHS (Physics): Resources for Physics teaching
JHS (Biology): Further studies on JHS Science curriculum
UPPER PRIMARY: Mixtures II
EARLY GRADE: Teaching the uses of Simple Machines

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / Lesson Overview	Start with an icebreaker. 1.1. Ask tutors in pair to list two things they have learnt in the previous PD session. 1.1.1 Still in pairs, ask tutors to read and explain to the whole group how they applied them in their teaching.	1.1. In pairs write two things you learnt in your previous PD session 1.1.1 In your pairs, read and explain how you applied them in your teaching to the whole group.	**15 mins**
	1.2. Ask tutors to read silently the introduction, lesson description and the purpose of lesson 10 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	1.2. Read silently the introduction, lesson description and the purpose of lesson 10 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	

	1.3. Ask tutors to discuss the alignment of the CLOs, LIs, teaching and learning activities, assessment procedures of the lesson and how they are connected to the basic school curriculum. *NB.* *Anticipate challenging and controversial questions of the lesson and provide answers to them before the session.*	1.3. Discuss the alignment of the CLOs, LIs, teaching and learning activities, assessment procedures of the lesson and how they are connected to the basic school curriculum.	
2. Concept Development (New learning likely to arise in this lesson).	2.1. Ask tutors to list the major concepts in the lesson and let them show how they can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.	2.1. List the major concepts in the lesson and show how you can help student teachers to use different activities and strategies to support learning of these areas in basic schools through STS activities.	
	2.2. Ask tutors to write possible challenging areas in teaching of the concepts identified and discuss how they would address the envisaged challenges of the lesson.	2.2. Write possible challenging areas in teaching of the concepts identified and discuss how they would address the envisaged challenges of the lesson.	
	2.3 Ask tutors to read and identify the resources suggested in the course manual to teach the lesson in both CoE and basic school classrooms	2.3. 2.3. Read and identify the resources suggested in the course manual to teach the lesson in both CoE and basic school classrooms.	
	2.4. Ask tutors to suggest alternative needed inclusive resources (different from those in the course manual) for the teaching and	2.4. Suggest alternative needed inclusive resources (different from those in the course manual) for the teaching and learning	

	learning of the concepts identified. NB: ● ***Examples of resources needed***: power point, laptop, projectors, internet resources etc.). ● ***In using GESI responsive resources, let tutors consider the following:*** ensures that females have equal access to teaching and learning, review all textbooks, pictures, posters, and materials before using them to see if they reinforce traditional gender roles (e.g., women cooking/cleaning, men in professional roles).	of the concepts identified.	
3. Teaching and learning activities for the lesson.	3.1 Ask tutors to read silently the teaching and learning activities of the lesson from the course manual and identify areas that require discussion and clarification. *N.B. Lead tutors to discuss areas identified after the silent reading that needs clarification.* 3.2 Ask tutors to discuss how the main concepts will be taught *bearing in mind GESI responsive strategies e.g. mix*	3.1 Read silently the teaching and learning activities and identify areas that require discussion and clarification 3.2 In your course groups, discuss how the main concepts will be taught bearing in mind GESI responsive strategies	

	ability grouping & give examples in the lesson that are gender responsive. ● *Remind tutors that they may use the following delivering platforms: face-face/zoom/telegram/WhatsApp or any appropriate platform acceptable and accessible by all.*	e.g. mix ability grouping & give examples in the lesson that are gender responsive.	
	3.3 Let tutors identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities.	3.3 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and show how you can help student teachers to support basic school leaners to develop these skills through STS activities.	
	3.4 In developing resources for teaching the lesson, remind tutors to be mindful of the following: ✓ Materials should be enough for everyone/groups ✓ Materials should be usable by everyone/groups ✓ Internet availability if required. 3.5 Electricity availability if required.	3.3. In developing resources be mindful of the following: ✓ Materials should be enough for everyone/groups ✓ Materials should be usable by everyone/groups ✓ Internet availability if required. 3.5 Electricity availability if required.	
4.0 Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course	4.1 Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities.	4.1. Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities.	

assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities.	(E.g. Assessment arrangements are reviewed in line with NTEAP) 4.2. Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	(Ensure all assessments are in line with NTEAP) 4.2. Refer to the NTEAP document and focus on subject portfolio and subject project especially.	
5.0. Evaluation and review of session.	5.1. Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2. Let tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during the next PD session. 5.3. Ask tutors to read the PD manual and look for the relevant materials for the next session. *NB: Make sure that everybody has a concrete plan for teaching the given topics.* *In the case of unresolved issues consult the subject writing leads.*	5.1. Individually, identify any outstanding issues relating to the lesson for clarification. 5.2. Identify a critical friend who took part in the PD session to sit in your class during lesson and report on observation during the next PD session. 5.3. Read the PD manual and look for relevant materials for the next session.	**5 mins**

Assessment Policy

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- **Emphasis should be on Portfolio preparation.**
- **For practical products class jury and peer assessment must be encouraged.**

Name of Subject: SCIENCE

Year 2 Semester 2

TUTOR PD 11 SESSION FOR LESSON 11 IN THE COURSE MANUAL

LEVEL/LESSON TITLE:
JHS (Physics): Developing a portfolio
JHS (Biology): Science Teaching Styles
UPPER PRIMARY: Upper Primary Integrated Science Curriculum
EARLY GRADE: EGE Science Student-teachers as Resources

Focus: the bullets provide the frame for what is to be done. The guidance notes in italics identify the prompt the SL/HoD needs and each one must be addressed	***Guidance notes on Leading the session.*** *What the SL/HoDs will have to say during each stage of the session*	***Guidance Notes on Tutor Activity during the PD Session.*** *What PD Session participants (Tutors) will do during each state of the session)*	***Time in session***
1. Introduction / lesson overview	Start with an icebreaker. 1.1. Ask tutors to mention challenging issues from their previous lessons that need to be addressed and discuss them as a whole group activity. ***(NB. Complete issues related to lesson 10 that may have bearing on lesson 11 before proceeding to the lesson 11).***	1.1. Mention challenging issues from your previous lessons that needs to be addressed and discuss them as a whole group activity.	**15 mins**
	1.2. Ask tutors to read silently the introduction, lesson description and the purpose of lesson 11 in the course manual and indicate how they are related to student teachers' relevant previous knowledge. Let them raise issues that	1.2. Read silently the introduction, lesson description and the purpose of lesson 11 in the course manual, indicate how they are related to student teachers' relevant previous knowledge and raise issues that	

	need clarification and/or discussion. 1.3. In pairs let tutors discuss the purpose of the lesson and share with the larger group. 1.4. Ask tutors to discuss the alignment of the CLOs, LIs, teaching and learning activities and assessment of the lesson. *NB.* *Anticipate challenging and controversial questions of the lesson and provide answers to them before the session.*	need clarification and/ or discussion. 1.3. In pairs, discuss the purpose of the lesson and share with the larger group 1.4. Discuss the alignment of the CLOs, LIs, teaching and learning activities, assessment procedures of the lesson.	
2.0. Concept Development (New learning likely to arise in this lesson).	2.1 Ask tutors to list the major concepts in the lesson in the course manual and discuss them with the whole group. 2.2. Ask tutors to individually prepare and share with the whole group thought-provoking and probing questions that will guide all students to acquire the major concepts of the lesson irrespective of their background.	2.1 List the major concepts in the lesson from the course manual and discuss them with the whole group. 2.2 Individually prepare and share with the whole group thought-provoking and probing questions that will guide all students to acquire the major concepts of the lesson irrespective of their background.	
	2.3 Ask tutors to write possible challenging areas related to teaching of the major concepts. 2.4 Ask tutor to suggest to the whole group practical ways of addressing the challenges identified and show how they can help student teachers to use these practical ways to	2.3. Write possible challenging areas related to teaching of the major concepts. 2.4 Suggest to the whole group practical ways of addressing the challenges identified and show how you can help student teachers to use these practical	

	support learning in basic schools through STS activities.	ways to support learning in basic schools through STS activities.	
	2.5 Ask tutors to read and identify the resources suggested in the course manual to teach the lesson. 2.6 Ask tutors to discuss how they will ensure all the resources suggested in the course manual can be made GESI responsive. NB: ***In using inclusive resources, let tutors consider the following:*** *ensures that females have equal access to teaching and learning, review all textbooks, pictures, posters, and materials before using them to see if they reinforce traditional gender roles (e.g., women cooking/cleaning, men in professional roles).* 2.7 Ask tutors to suggest alternative relevant inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified in both CoE and basic school classrooms. NB: ***Examples of resources needed****: sample of portfolio, sample of basic school curriculum, power point, laptop, projectors, internet resources etc.).*	2.5 Read and identify the resources suggested in the course manual to teach the lesson. 2.6 Discuss how you will ensure that all the resources suggested in the course manual can be made GESI responsive 2.7 Suggest alternative relevant inclusive resources (different from those in the course manual) for the teaching and learning of the concepts identified in both CoE and basic school classrooms.	

3 Teaching, learning and assessment activities for the lesson ● Reading of teaching and learning activities and identification of areas that require clarification especially GESI related activities. ● Reading of teaching and learning activities and identification of GESI and ICT issues that require clarification.	3.1. Ask tutors to read silently the teaching and learning activities of the lesson from the course manual and identify areas that require discussion and clarification. *N.B. Lead tutors to discuss areas identified after the silent reading that needs clarification.*	3.1 Read silently the teaching and learning activities and identify areas that require discussion and clarification.	**40 mins**
	3.2. Let tutors discuss how they will ensure that all the teaching and learning activities are GESI responsive. *NB: The activities should be designed and well-arranged so as to promote the understanding and participation of all (male & female, slow & fast learners, physically challenged and the marginalised) students during the lesson.*	3.2 Discuss how you will ensure that all the teaching and learning activities are GESI responsive. *NB: The activities should be designed and well-arranged so as to promote the understanding and participation of all (male & female, slow & fast learners, physically challenged and the marginalised) students during the lesson.*	
	3.3. Ask tutors to discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive. *NB: Remind them of GESI responsive strategies e.g. mix ability grouping.* *Remind tutors that they may use the following delivering platforms: face-face/zoom/telegram/WhatsApp or any appropriate*	3.3 In your course groups, discuss how the main concepts will be taught bearing in mind GESI responsive strategies e.g. mix ability grouping & give examples in the lesson that are gender responsive.	

	platform acceptable and accessible by all.		
	3.4 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities.	3.4 Identify where, and which, core and transferable skills that can be developed or applied in the lesson and how they can help student teachers to support basic school leaners to develop these skills through STS activities.	
	3.5 In developing resources for teaching the lesson, remind tutors to be mindful of the following: ● Materials should be enough for everyone/groups ● Materials should be usable by everyone/groups. ● Internet availability if required. ● Electricity availability if required.	3.5 In developing resources be mindful of the following: ● Materials should be enough for everyone/groups. ● Materials should be usable by everyone/groups. ● Internet availability if required. ● Electricity availability if required.	
4 Reading of assessment opportunities and ensuring they are aligned to the NTEAP and required course assessment: subject project (30%), subject portfolio (30%) and end of semester examination (40%) Working through one or two activities,	4.1 Ask tutors to read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (E.g. Assessment arrangements are reviewed in line with NTEAP). 4.2. Ask tutors to refer to the NTEAP document and focus on subject portfolio and subject project especially.	4.1 Read the assessment activities in the manual(s) and identify areas that require clarification especially on NTEAP related activities. (Ensure all assessments are in line with NTEAP) 4.2 Refer to the NTEAP document and focus on subject portfolio and subject project especially.	

5.0. Evaluation and review of session.	5.1. Individually, let tutors identify any outstanding issues relating to the lesson for clarification. 5.2. Let Tutors identify a critical friend who took part in the PD session to sit in their class during lesson and report on observation during next PD session. 5.3. Ask tutors to evaluate the PD sessions indicating what lessons have been learnt and how the sessions have impacted teaching and learning of the course. *NB: Make sure that everybody has a concrete plan for teaching the given topics.* *In the case of unresolved issues consult the subject writing leads.*	5.1. Individually, identify any outstanding issues relating to the lesson for clarification. 5.2 Identify a critical friend who took part in the PD session to sit in your class during the lesson and report on observation made during the next PD session. 5.3 Evaluate the PD sessions indicating what lessons have been learn t and how the sessions have impacted teaching and learning of the course.	**5 mins**

Assessment Policy

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College of Education Tutor Professional Development (TPD) Survey – Coordinators Survey

Introduction

This survey should be completed by the TPD Coordinators for each College of Education. This survey will be completed on the College of Education Management Information System (CEMIS). The survey should be completed each week after TPD sessions.

1. Name of College of Education	
2. Please enter the date of the session	

3. Did today's scheduled TPD session take place?		
Yes	1	Go to Q5
No and we did not reschedule.	2	Go to Q4
No but we rescheduled for later this week or for an additional slot next week	3	Go to Q4

4. If the TPD session did not take place, please explain why		
Conflict with other activities	1	End data submission.
No one showed up for the session.	2	
Other (please specify) ……..	3	

5. How many male tutors attended?	*Answer must be a number……..* *……*
6. How many female tutors attended?	*Answer must be a number……..* *……*
7. Which session was it?	*Answer must be a text……* *……*

8. What was the level of tutor participation during today's session?	
75-100% of the tutors were engaged	1
50-75% of the tutors were engaged	2
25-50% of the tutors were engaged	3
0-25% of the tutors were engaged	4

9. Please rate yourself on how well you facilitated the session	
I was not prepared	1
I could have been better prepared.	2
I felt adequately prepared.	3
I was very prepared and knew the content well	4

10. Did anyone from your mentoring University visit your college to observe and participate in the PD session?		
Yes	1	Go to Q11
No	2	Skip to Q13

11. What kind of support was provided during the visit?	
The University team worked with me to prepare for the session.	1
The University team participated in the PD session.	2
The University team observed the session.	3
After the session, the University team gave feedback on how the session went	4

12. How valuable was the support to you?	
Not Valuable	1
Somewhat Valuable	2
Very Valuable	3

13. Do you think the tutors found the session valuable?	
Not Valuable	1
Somewhat Valuable	2
Very Valuable	3

14. How adequately do you think Gender Equality and Social Inclusion (GESI) issues were addressed throughout the session?	
Not Adequate	1
Somewhat Adequate	2
Very Adequate	3

15. How much impact do you think the session will have on the learning of students?	
Very Good	1

Good	2
Minimal	3

16. Based on the reflection on the session today, what percentage of tutors do you think are applying interactive teaching strategies learnt from the sessions in their classes?	
75-100% of tutors are applying interactive teaching strategies in their classes	1
50-75% of tutors are applying interactive teaching strategies in their classes	2
25-50% of tutors are applying interactive teaching strategies in their classes	3
0-25% of tutors are applying interactive teaching strategies in their classes	4

17. What percentage of tutors do you think are using ICT in their classes as teaching aids e.g., integration of videos, PowerPoint presentations and as a research tool?	
75-100% of tutors are using ICT as teaching aids in their classes	1
50-75% of tutors are using ICT as teaching aids in their classes	2
25-50% of tutors are using ICT as teaching aids in their classes	3
0-25% of tutors are using ICT as teaching aids in their classes	4

18. Did the Principal and/or Vice Principal attend, visit or monitor the PD session? (Choose one or more answer from the list)?	
The Principal	1
The Vice Principal	2
Neither the Principal nor Vice Principal attended	3

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