

# Four-Year B.Ed. Course Manual

# Introduction to Early Grade Science III









**GOVERNMENT OF GHANA** 









### **FOREWORD**

These Initial Teacher Education course manuals were developed by a team consisting of members from Colleges of Education and four universities namely the University of Ghana, Kwame Nkrumah University of Science and Technology, University of Education, Winneba, and University for Development Studies. This team was originally constituted by the National Council for Tertiary Education (now the Ghana Tertiary Education Commission) in 2019 to support the delivery of the new B.Ed. curriculum with assistance from T-TEL and UK Aid. The revision, finalization and printing of these manuals took place in 2021 with support from T-TEL and Mastercard Foundation.

The course manuals have been produced for use as general guides for the delivery of the new four-year B.Ed. curriculum in Colleges of Education in collaboration with their affiliated universities. They are designed to support student teachers, tutors, and lecturers in delivering a complete B.Ed. course for training student teachers which meets the requirements of the National Teachers' Standards, enabling them to teach effectively in basic schools.

The first section of the manuals is focused on the course information and vision for the B.Ed. curriculum. The second section presents the course details, goal for the subject or learning area, course description, key contextual factors as well as core and transferable skills and cross-cutting issues, including equity and inclusion. The third section is a list of course learning outcomes and their related learning indicators. The fourth section presents the course content which is broken down into units for each week, the topic and sub-strands and their related teaching and learning activities to achieve the learning outcomes and the teaching and learning strategies. This is followed by course assessment components in section five. Each manual contains a list of required reading and references as well as teaching and learning resources. The final section presents course related professional development for tutors and lecturers to be able to use each section of the manual.

Field instructions to guide Supported Teaching in School are integrated into the course manuals to provide the student teacher with guidance in developing teaching throughout the entire period of study to be able to meet the requirements of the National Teachers' Standards (NTS) and the National Teacher Education Curriculum Framework (NTECF). To ensure maximum benefit the course manuals should be used in addition to other resources such as the NTS, NTCEF, National Teacher Education & Assessment Policy and the National Teacher Education Gender Equality and Social Inclusion (GESI) Strategy and Action Plan.. This will help to ensure that student teachers' learning is integrated within the wider teacher education policy framework.

Professor Mohammed Salifu Director General, Ghana Tertiary Education Commission

### **ACKNOWLEDGEMENTS**

The course manuals were developed through the collaborative efforts of a team of individuals from Colleges of Education, University of Ghana, Kwame Nkrumah University of Science and Technology, University of Education, Winneba, and University for Development Studies. They were produced in association with the Ghana Tertiary Education Commission of the Ministry of Education, Ghana.

A participatory team approach was used to produce this set of resources for tutors/lecturers, mentors, and student teachers. We are grateful to the specialists who contributed their knowledge and expertise.

Special thanks to Professor Jophus Anamuah-Mensah - T-TEL Key Advisor, Dr. Eric Daniel Ananga - T-TEL Key Advisor for Curriculum reform and Beatrice Noble-Rogers who provided key editorial, review and content input and facilitated the process of drafting and finalising the course manual.

Patricia Appiah-Boateng and Gameli Samuel Hahomene, served as typesetting and formatting coordinators and designed and produced the illustrations, tables, and other graphics which appear in the pages. They spent time and effort designing and redesigning the graphic layout and producing the camera-ready copy resulting in a set of materials that are easy to use, read, and reference.

Thanks also goes to all T-Tel staff members who worked to support production of these course manuals, particularly Beryl Opong-Agyei and Gideon Okai. Their frankness and co-operative attitude complimented the team approach used to produce this manual.

We are indebted to the Ministry of Education and the Ghana Tertiary Education Commission (GTEC) for the general support and specific helpful advice provided during production of the course manuals. Recognition and thanks must go to Chief Technical Advisor for T-TEL and Policy Advisor to the National Education Reform Secretariat, Akwasi Addae-Boahene, Prof. Mohammed Salifu, the Director General of GTEC and Mr. Jerry Sarfo the coordinator for the colleges of education, who in diverse ways supported during the course manual writing workshops.

In addition to all the staff who participated visibly in the development of these materials we would like to acknowledge all those people from the many colleges of education and universities in which we have worked who have, directly or indirectly, shared their views on the curriculum with us.

# **CORE WRITING TEAM**

Names of writers	Subject	Names of writers	Subject
Dr. Isaac Eshun		Cletus Ngaaso	Social Studies
Dr. Anthony Baabereyir	_	Mohammed Adam	
Ms. Shirley Dankwa	African Studies	Dr. Emmanuel Adjei-Boateng	
Prof. S.Y. Annor	Agriculture	Dr. Yaw Nyadu Offei	Special Education
Dr. Salome praise Otami		Prof. Samuel Hayford	
Dr. Samuel Frimpong		Dr. Awuni	
Robert Quansah	Early Grade	Rev.(Dr) Nyueko Avotri	Technical Vocational
Dr. Abraham Kwadwo Okrah		Elizabeth Lani Ashong	Education and
Dr. Sarah Emma Eshun	English Language	Michael Tsorgali	Training
Vivian Acquaye		Wilchael Tsorgaii	
Felix A. Odonkor		Frnacis Donkor	
Dr. Cecilia Esinam Agbeh		Dr. Maxwell Nyatsikor	
Ibrahim Osmanu	French	Prof. Salomey Essuman	
Dr. Kofi Adu-Boahen		Dr. Paul Kwadwo Addo	
Dr. M. Kusimi	-	Dr. Winston Kwame Abroampa	
Dr. Aboagye Dacosta		Mr. Kwaku Esia-Donkoh	
Mr. Alexander Otoo	Geography	Mohammed Z. Abdulmumin	Pedagogy
Dr. Yvonne A.A. Ollennu	Ghanaian	Dr. Mohammed Hafiz	Arabic
Kwasi Adomako	Language	Iddris Mohammed	
Dr. Akwasi Kwarteng Amoako-Gyampah		Mohammed Almu Mahaman	
Anitha Oforiwah Adu- Boahen		Murtada M. Muaz	
Gertrude Nkrumah	History	Dr M. Q. Adjahoe	Music
Prof Charles Owu-Ewie	Literacy	Prof Cosmas Mereku	
Dr. Ahmed Amihere		Prof. Reginald Ocansey	Physical Education
Zakaria Sadiq	Mathematics	Dr. Emmanuel Osei Sarpong	
Dr. R. Addai-Mununkum	RME	E. Kwaku Kwaa-Aidoo	ICT

### INTRODUCTION TO COURSE MANUALS

Welcome to this B.Ed. Course manual.

Following the accreditation of the B.Ed. by the national accreditation Board with its recognition as a world class teacher education curriculum, the decision was taken to support effective implementation through the development of course manuals. the course manuals provide tutors and lecturers with the materials necessary to support teaching each of the B.Ed. courses. The manuals adhere directly to, and emphasise, the principles and standards set out in the NTS, NTECF and in the B.Ed. and will help ensure operationalising the Government's teacher education reform Policy.

#### The manuals serve the following purposes:

- they are the key educational agreements between the training institution and the student teachers. In this way student teachers know what the expectations are for them and for the training they will receive.
- they lay out the course outcomes, content, strategies, and assessment, thereby providing direction to and consistency in training and B.Ed. implementation among tutors across the country.
- they are explicit documents that provide other institutions with information on which to base transfer/ articulation decisions.

#### Specifically, they also:

- support coherent lesson planning and teaching which will enable student teachers to achieve the NTS and become good teachers who ensure all pupils' learning whilst offering tutors the flexibility for adaptation for local needs and contexts.
- Provide a lesson by lesson overview of the course, building on and developing the material in the course specifications.
- Inform tutors, student teachers and others working with student teachers about:
  - 1. What is to be taught and why.
  - 2. how it can be taught.
  - 3. how it should be assessed.
- Provide opportunities for student teachers to develop and apply knowledge during supported teaching in school, creating a strong bond between learning in school and in the training institution.
- Reflect the stage of student teacher development, set out in the model for progress across the four years
  of the B.Ed.
- Can be used as self-study tools by student teachers.
- Ensure that all information necessary to inform teacher training is in one place (serves as reference document).
- The manuals are the basis of the codes and university professional development sessions to ensure Principals, tutors, lecturers and heads of department are fully familiar with the details of: courses, outcomes, content, approaches, assessments and lessons.

#### Who are course manuals for:

- College of Education Tutors
- Teacher Education University Lecturers
- Student Teachers
- Mentors and Lead Mentors
- All Those with An Interested In Teacher Education.

### **USING THIS MANUAL**

Writers of the manuals engaged widely with colleagues in each subject area at each stage of development. Besides, writers envisaged themselves in varied contexts as they wrote, to suggest methodologies and strategies for teaching the strands which would ensure student teachers are enabled to achieve the learning outcomes. In view of our commitment to creativity, problem solving, collaboration and to lifelong learning, we expect that individual tutors will "own" their manuals and become user-developers. lessons in the manuals will be strands for weekly Pd meetings where tutors/lecturers will situate the lessons in the contexts of their colleges and their student teachers, to maximize the benefits.

It is also expected that tutors will model the best pedagogic practices for student teachers. Key among such practices is the communication of the importance of having a personal teaching philosophy. We expect that tutors and lecturers will explicitly communicate their personal teaching philosophies to their student teachers during the first meeting of every course. in preparation for this, we suggest you set out your personal teaching philosophy and how it will be demonstrated in your teaching using, or adapting, the sample sentence introductions below.

My teaching philosophy is	
In view of this philosophy, I	will facilitate this course by/through

### A.Course Information

#### Introduction to Early Grade Science III

#### The vision for the New B.Ed. Curriculum

The vision is to transform initial teacher education and train highly qualified, motivated new teachers who are effective, engaging and fully prepared to teach the basic school curriculum. This would improve the learning outcomes and life chances of all learners they teach as set out in the National Teachers' Standards. In doing this it would instill in new teachers the Nation's core values of honesty, integrity, creativity and responsible citizenship and to achieve inclusive, equitable, high quality education for all learners

Course Details							
Course Name	se Name Introduction to Early Grade Science III						
Pre-requisite	Introduction to Integrated Science I and Introduction to Integrated Science II (from year 1)						
Course Level	300	300 Course Code Credit 3					
				Value			

#### **Goal for the Subject or Learning Area**

The science programme is designed to transform the early grade teacher into one imbued with the right knowledge, technology, pedagogy, innovation, content and the core values and attitudes to promote inclusivity and inspire active learning at the early grade level.

#### **Course Description**

The Introduction to Early Grade Science Illbuild on the progress made in science learning from Introduction to Early Grade science II. The content and concepts are designed to provide early grade student teachers with the relevant learning experiences and technological skills that will enable them teach creatively through hands-on explorative learning activities and using authentic assessment approaches. It is also structured to enable student teachers to learn how to cater for early grade specialism, physical and biological transitions and the necessary pedagogical skills to co-plan and co-teach in early grade classroom. The course is intended to equip student teachers with a sense of accuracy, precision, honesty, integrity, truthfulness, fortitude, perseverance, long-suffering, belongingness, love for nature and mankind through its interconnection with other disciplines. Topical issues in this course are; plants and their habitats, propagation in plants, classification of animals, the human body, water, air, soil, measurement and student teachers as resources in diversity. NTS, 1c, 1d, 1g, Pg. 12; NTS 2a, 2b,2c, pg. 13, NTS 3b, 3e & 3g, pg. 14; NTECF pg. 20

#### **Key Contextual Factors**

- A number of on-going interventions have been initiated by government and other stakeholders which support the Early Child Education (ECE) sector, such as mainstreaming KG into compulsory basic education for all school-age children, school feeding programme, provision of free school uniforms, National Literacy Acceleration Programme (NALAP) and USAID support programmes (learning materials).
- However, current research shows that early childhood education is still facing a number of challenges. Some of these
  include: public prejudice about the relevance of early childhood education, lack of commitment and involvement of
  parents, financial constraints and inadequate infrastructure.
- Other challenges include: cultural and linguistic barriers; mode of assessment of pupils and a lack of conducive learning environments.
- Another major challenge is the lack of qualified early childhood teachers, leading to rote-based learning in Ghanaian early years' settings.
- The current training for early childhood teachers does not prepare them sufficiently to identify, manage and support
  the learning challenges of children; including those with special educational needs.
- Early childhood education is perceived by society as women's field and also not regarded as important as Primary and JHS.
- There is a low competency level of early childhood teachers in integrating ICT into their teaching and learning process.

#### Also

- The learners' primary environment provides primary resources to make science learning relevant, interactive and enjoyable.
- There is extensive literature to make appropriate improvisations and innovations towards improving science learning.
- Innovations make it easy for every student, irrespective of their social, physical and mental ability, to participate in science learning.
- There is human resource at the training, supporting and mentoring institutions to build capacity that can drive the intervention that this manual presents.

Play-based pedagogy, introduced by the 2012 Programme to Scale Up Quality Kindergarten Education Nationwide, requires all teachers to adopt the play-based approach. Noting that;

• learning activities have to be structured in such a manner that all learners will be able to work in free, collaborative and

- engaging environments to build logical and sequenced concepts from their personal (but guided) experiences. This will imply engaging in integrated teaching- bringing in ideas to facilitate concept formation from various disciplines, cultures and activities.
- Since science is practical, learners must be engaged in hands-on activities, with or without standard laboratories. The introduction of (universal/adaptable) laboratories through micro science kits would be very useful.
- Text and content materials as well as assessment tools must be modelled to take into consideration, the different
  cultures and gender issues bordering on learning science. The new teacher must be gender sensitive with a sense of
  inclusivity in their teaching strategies.

#### Core and transferable skills and cross cutting issues, including equity and inclusion

Critical and Independent Thinking, Equity and Inclusivity, Social Collaboration/Team work, Creativity, Innovation, Problem solving, Manipulation, Reflection, developing scientific process skills and Inquiry.

Course Learning Outcomes	Learning Indicators
CLO 1. Identify creative ways to present plant, their habitats and propagation to early grade learners (NTS, 2c, Pg. 13; 3j, pg.12)	Develop science related games children can play and learn about plant, their habitats and how they propagate.
CLO2. Demonstrate adequate knowledge and understanding of the qualities of clean water, uses of water in the environment, the composition of air around us as well as	Create song and rhymes about qualities of clean water, uses of water, composition of air and soils.
soils CLO3. Classify animals according to their feeding, habitat, and reproduction and be able to mention the human body parts and their functions. (NTS, 2c, Pg. 13)	Concept map of Plants, their habitats, and how they propagate
CLO4. Measure temperature, time, mass and volumes using the appropriate instruments and be able to develop strategies to teach same to early grade learners through songs, rhymes, role play and others. (NTS 1e, pg. 12, 3c)	<ul> <li>demonstrate the collaboration in measuring quantities – temperature, time, mass and volume.</li> <li>Concept map of quantities, instrument of measurement and SI unit for measuring.</li> </ul>
CLO5. Develop the ability to work in teams to plan and use developmentally appropriate TLMs from locally available materials for early grade teaching through team teaching of the concepts embedded in the course work. (NTS 3j, pg. 14)	<ul> <li>Prepare improvised materials for teaching at the early grade level</li> <li>Present a co-planned teaching plan to teach early grade classroom</li> </ul>
CLO6. Identify opportunities to explore diversity in daily life, reflect on personal bias and analyse institutional discriminations impact on early childhood. (NTS, 2e& 3e, Pg. 14& 24)	Role play the process of diversity, and institutional discriminations impact on early childhood.

Course Content								
Unit (Week)	Topic	Subtopic (if any)	Teaching and learning activity to achieve the learning outcomes					
Week 1	<ul> <li>Review of Year 2         Integrated Science and Introducing year 3 CM     </li> <li>Teaching Plants and their Habitats</li> </ul>	Recap of year 2 lessons and challenges thereof.     Introducing Year 3 Specialism CM     Terrestrial and aquatic plant	Demonstrations and discussions of Y2 CM and specialism of Early grade science CM     Reflections, presentations and designing Maps on challenges and unique nature of Y2 CM and Y3 Early Grade CM     Role playing/song creations of concepts of plants and their habitats     Simulations, video and Computer presentation of Plants and their Habitats     Produce concept maps of plants and their Habitats					

		•	Demonstrations and group
			discussions of previous
			lessons
			Reflections,
			presentations and
			designing/game
			development on plants
			propagation
			Concept mapping to
			show plants and their
			mode of propagation
			Simulations, video and
			Computer presentation
			on plant and propagation
			Discussion, Role Playing,
			Construction of games,
			Designing rhymes,
			creating songs about plants germination
			Video and Computer
			simulation on teaching
			activities and assessment
			strategies for teaching
			germination to early
			grade learners
Week 2	Propagation in Plants	How plants	Demonstrations and
		Propagate	group discussions of
		1,10,11	previous lessons
			<ul> <li>Reflections,</li> </ul>
			presentations and
			designing/game
			development on plants
			propagation
			<ul> <li>Concept mapping to</li> </ul>
			show plants and their
			mode of propagation
			Simulations, video and
			Computer presentation on
			plant and propagation
Week 3	Germination	• The	Face-to Face:
		processes of	Discussion, Role Playing,
		Germination	Construction of games,
			Designing rhymes, creating
			songs about plants
			germination
			e-learning:
			Video and Computer
			simulation on teaching
			activities and assessment
			strategies for teaching
			germination to early grade
			learners
Week 4	Classification of Animals	Types of Animals	Face-to-face:
		<ul> <li>Feeding habits of</li> </ul>	Mixed group discussions and
		sheep, goats, cats	demonstrations/role plays on
		and dogs	sorting/classifying animals
			according to their feeding
			habits Concept Mapping and
			Cartooning on some animals
			and their feeding habits.

		1	1
			e-learning/Reflections: Video presentations from MOOCs with reflections on values such as Honesty, Accuracy, Precision and critical thinking using the concepts.
Week 5	Human Body	<ul> <li>Parts of the Human Body</li> <li>Functions of the Human Body</li> </ul>	Face-to-face: Discussion, talk for learning approaches with student teacher presentations on Activities for teaching the human parts and functions to Early grade learners  Independent Study: problem-based inquiry for student teachers and assessment on the human parts and functions
Week 6	Course Review with STS seminar	Reviewing and reflecting on all lessons     STS Seminar	Face-to-face: Discussion, talk for learning approaches with student teacher presentations on lessons learnt from week 1 to week 5 Independent Study: problem-based learning on National Teacher's Standards and reflection on what to be observed during STS.
Week 7	Water	<ul> <li>Qualities of clean water</li> <li>Uses of water</li> </ul>	Pyramid discussions, Presentations on qualities of clean water and uses of Water  e-learning: OERs and MOOCs on how to ensure water is clean and maintained clean.
Week 8	Soils	Composition and types of soils Uses of soil	Face-to-face:Discussions, demonstration, mixed group activities to examine the composition of soil  Computer simulations and  OERson the uses of soil in the environment
Week 9	Air	Composition of Air     Uses of Air	Independent Study: Inquiry and reflections on the composition of air Face-to-Face: Discussions, Role playing and Rhyme designing uses of air
Week 10	Measurement of Temperature and Mass, time and Volume	Measuring     Temperature     Measuring Volume	Face-to-Face: Think, Pair, Share, share discussions, Reflections and rhyming using concepts of temperature e-learning: OERs and MOOCs with report writing about Measuring temperature and mass

Week 11	Student Teachers as Resources in diversity	The teacher as     Resource for early     grade science     teaching     Identifying and     dealing with     diversity in the early     grade science     classroom	Face-to-Face: Modelling, Role playing and Discussing how student teachers remain resources for effective science teaching at the early grade teaching
Week 12	Course Review II with STS seminar	Reviewing and reflecting on lessons 7-11     STS Seminar	Face-to-face: Discussion, talk for learning approaches with student teacher presentations on lessons learnt from week 7 – week 11 Independent Study: problem-based learning on National Teacher's Standards and reflection on observations made during STS between week 7 – week 11

#### **Teaching and Learning Strategies:**

Think, Pair, Share, Square, group Discussions, Checklist, Role Play activities, Multimedia presentations, Concept mapping, concept cartoons, video presentations, simulations and Computer assisted instructions, inquiry learning and field trips and seminars, rhyming and song constructions

#### **Course Assessment Components:**

Component 1: Subject Portfolio Assessment (30% overall score)

- Selected Item of Student work (3 items 10%) = 30%
- Midterm assessment 20%
- Reflective Journal 40%

Organization of the Subject Portfolio- 10% (How its presented/organized)

Component 1: Summary of Assessment Method: End of Semester Examination on key concepts as shown in the lessons.

Core skills to be acquired: Cognitive, literacy, numeracy, writing and reading

Weighting: 40%

CLO1 to CLO6

NTS

**Professional Development** 

The Teacher(s):

- a) Critically and collectively reflects to improve teaching and learning.
- b) Improves personal and professional development through lifelong learning and Continuous Professional Development. Community of Practice

The Teacher:

d) Is guided by legal and ethical teacher codes of conduct in his or her development as a professional teacher.

2

Knowledge of educational frameworks and curriculum

The Teacher:

a) Demonstrates familiarity with the education system and key policies guiding it. b) Has comprehensive knowledge of the official school curriculum, including

learning outcomes.

c) Has secure content knowledge, pedagogical knowledge and pedagogical content

knowledge for the school and grade they teach in.

Managing the learning environment

The Teacher:

a) Plans and delivers varied and challenging lessons, showing a clear grasp of the intended outcomes of their teaching.

3

Managing the learning environment

The Teacher:

a) Plans and delivers varied and challenging lessons, showing a clear grasp of the

intended outcomes of their teaching.

Assessment

The Teacher:

k) Integrates a variety of assessment modes into teaching to support learning.

#### Component 2: Subject Project (30% overall Semester score)

- Introduction; a clear statement of aim and purpose of the project -10%
- Methodology; What the student teacher has done and why to achieve the purpose of the project 20%
- Substantive/Main section of the work 40%

#### Conclusion - 30%

Component 2: Assessment for Learning Presentations/Portfolio

Summary of Assessment Method: Peer Review / Tutor assessment of portfolio of materials and resources amassed during the course:

In the final session of the course student teachers present the teaching and learning portfolios they have developed during the course for peer review and then tutor assessment. The final portfolio should include: all the items added throughout the course presentations, TLMs, example plans for lessons and an up-dated personal teaching philosophy for teaching early grade science, a list of key lessons learned during the course and three targets for developing their skills, knowledge and understanding of teaching and learning further

Weighting: 30 %

CLO 1, CLO 4, CLO5 and CLO6

NTS:

- 1b) Improves personal and professional development through lifelong learning and Continuous Professional Development.
- 1d) Is guided by legal and ethical teacher codes of conduct in his or her development as a professional teacher.
- 1g) Sees his or her role as a potential agent of change in the school, community and country
- 2b) Has comprehensive knowledge of the official school curriculum, including learning outcomes
- 2c) Has secure content knowledge, pedagogical knowledge and pedagogical content knowledge for the school and grade they teach in.
- 3e) Employs a variety of instructional strategies that encourages student participation and critical thinking.
- 3i) Explains concepts clearly using examples familiar to students.
- 3j) Produces and uses a variety of teaching and learning resources including ICT, to enhance learning

#### Component 3: End of Semester Examination - (40% overall Semester Assessment

Component 3: Assessment as Learning Review of Reports/Portfolio

Summary of Assessment Method: Peer Review documents/ Evidence of report from school (STS) visits for portfolio/Reflective notes and as prescribed by University of Affiliation

Core skills to be acquired: Pedagogical, observational and cooperative skills

Weighting: 30%

Write a 1500-word report on what strategies need to be used in science teaching to ensure all learners are included and that the teaching is appropriate to the typical characteristics of the upper primary learner. Include reference: to examples of teaching you have observed and taken part in in school; topics covered during the course and The Basic School Science-Curriculum

CLO1, CLO4, CLO5 and CLO6

NTS:

- 1a) Critically and collectively reflects to improve teaching and learning
- 2c) Has secure content knowledge, pedagogical knowledge and pedagogical

content knowledge for the school and grade they teach in.

3m) Identifies and remediates learners' difficulties or misconceptions, referring

learners whose needs lie outside the competency of the teacher.

#### **Required Reading and Reference List**

- Abbey, T. K., Alhassan, M. B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). *Ghana association of science teachers integrated science for senior high schools*. Accra: Unimax MacMillan.
- Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools. Accra: Unimax Macmillan.
- Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers' chemistry for senior high schools. Accra: Unimax MacMillan.

Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I. Winneba: IEDE.

Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.

#### **Teaching and Learning resources**

Smartphones, Tablets, Productivity tools (software that allow teachers to work better), Subject based instructional tools/applications, Instructional laboratories, Smart boards, projectors, Smart screens, Open ERs – YouTube, Coursera, Khan Academy, TESSA and UNESCO OERs, iBox, and standard laboratories

#### Course related professional development for tutors/lecturers

- Development of Concept Maps/ Concept cartoons Charts/ technical/action research report writing/
- Training in Use of CMs/ Appreciating the place of the Cross-cutting issues in the CLOs and Teaching -Learning Activities/ Assessment component requirement for active learning/ model teaching to reflect the desired PCK students-teachers are required to learn.

Year of B.Ed. 2 Semester 1 Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
--	----------------------------

Title of Lesson		f Year 2 Integration and Germin		Teaching Plants	, their Habitats,	Lesson Durati	ion	3 Hours		
Lesson description  Previous student	how these propagati	The lesson is intended to review and embed principles and concepts acquired in Year 2 Science and how these can be used for co-planning and co-teaching of the concepts of plants, their habitats, propagation and Germination at the Early Grade level.  Student teachers have been introduced to the Year 2 Early Grade Science curriculum which								
teacher knowledge, prior learning (assumed)		tes concepts a			bedding teaching			· 3		
Possible barriers to learning in the lesson					ing to the classro		eas abo	out		
Lesson Delivery –	Face-to-	Practical	Work-	Seminars	Independent	e-learning	Pract	icum		
chosen to support students in achieving the outcomes	face <b>√</b>	Activity √	Based Learning		Study V	opportunities V				
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	Practical Independ	Face-to face: Discussions, demonstrations and observations, rhyming and singing Practical Activities: Group work and composing songs and rhymes, Nature walk Independent Study: Reflections e-learning Opportunities: Simulations, video presentations								
Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed	<ul> <li>Disca</li> <li>Design</li> <li>(NTS)</li> <li>2c: Has se content k</li> <li>2e: Under</li> </ul>	<ul> <li>Discard the common misconceptions that studentteachers have about plants and their habitats</li> <li>Designing activities to teach plants and their habitats at the Early Grade</li> </ul>								
Learning     Outcome for the lesson, picked and developed from the course specification     Learning indicators for each learning outcome	Learning Outcomes  Learning Indicators  Identify which cross- cutting issues, core and transferable skills, inclusivity. Equity and addressing diversity. Ho will these be addressed developed  Link concepts from year 2 to new concepts in teaching plants and their habitats Differentiate between terrestrial and aquatic plants and some germination types Identify which cross- cutting issues, core and transferable skills, inclusivity. Equity and addressing diversity. Ho will these be addressed developed  Through discussions and sharing of ideas in class studentteachers develop the skills of communicati collaboration and mutua respect while appreciatir individual difference and abilities. They also acquire abilities.						and . How sed or and ass elop ication, utual ciating and cquire			
	• E	plants and the had been the suitable for	ir survival they are ptions	the conceptheir habitation pg. 44; PD 112)  • Present characterists	c plants o demonstrate ots of plants and ats (PD Theme 1, Theme 4, pg. arts and models al and aquatic	skills in handli develop critic honesty, accu responsibility active particip work/discussi	al think racy ar throug pation i	king, nd gh		

	understanding of plants and their habitats and be able to teach the subject matter  • Demonstrate pedagogic content knowledge and skills of how plants propagate.  • Student teachers to prepare lessons on propagation in plants to teach in class. • Demonstrate identify the core values of critical thinking, inclusivity, collaboration in group		•	plants and their habitat (PD Theme 5, pg. 37) Designed activities that can be used to teach the topic Prepared lesson plans which incorporates student activities, individual work, group work, use of eresources, practical activity and face-to-face Develop checklist for use in observing how teacher designs and demonstrates teaching and learning strategies for Early Grade teaching.	
Topic/Title	work and ind reflection in teaching and strategies for how plants p early grade left.  Developing a Assessment steach early g propagation.	designing assessment teaching ropagate to earners ctivities and strategies to rade		_	chieve learning outcomes:
				depending on delivery mo collaborative group work of	
				Teacher Activity	Student Activity
Review of Year 2 Integrated Science and teaching of Plants and their habitats	Introduction to Early Grade Year 3 Course Manual	20 minutes		Face-to-face: Tutor leads student teachers to discuss their expectations of Early Grade Year 3 Course Manual	Face-to-face: Students teachers discuss and come out with their expectations of the Early Grade Year 3 Course Manual drawing experience from the Year 2 course manual
	Recap of year 2 lessons and challenges thereof.	40 minutes		Face-to-face/Group activity:Teacher initiates a Pyramid discussion on the year 2 concepts with student teachers, and encourages them to reflect on the new concepts, the challenges and unique lessons	Face-to-face/Group activity:Student teachers work individually and in groups to discuss year 2 lessons, the challenges, unique values and produce a concept map of possible expectations in the content of early grade science 3 lessons.
	Concepts of plants and their habitats	80 minutes		Face-to-face/Group activity: Teacher leads studentteachers to undertake a nature walk around the environment. They then work in mixed ability (inclusivity)groups to arrange and compose songs and rhymes about plants and their habitats, distinguishing between terrestrial and aquatic plants.	Face-to-face/Group activity: studentteachers work in mixed ability (inclusivity)groups to arrange and compose songs and rhymes about terrestrial and aquatic plants and their habitats.

				T			
		40	minutes	Face-to-face/Group	Face-to-face/Group		
				activity: Tutor provides	activity: Studentteachers		
				multimedia presentations	working in groups (in		
				to show terrestrial and	mixed ability) use		
				aquatic plants and their	concepts learned from		
				habitats. Tutor the	multimedia presentations		
				instructs student teachers	to design either concept		
				to work in groups (in mixed ability) to use	maps, simulations or multimedia games and/or		
				either concept maps,	rhymes that can make		
				simulations or multimedia	early grade learners learn		
				presentations to design	the differences between		
				games and/or rhymes that	terrestrial and aquatic		
				can make early grade	plants.		
				learners learn the	The Concept maps,		
				differences between	rhymes and games are		
				terrestrial and aquatic	cross shared to be		
				plants.	reviewed by their peers		
					(PD Theme 8, pg. 40; PD		
	Llow Die ete				Theme 4, pg. 23-46).		
	How Plants				Face-to-face: Student teachers discuss		
	Propagate				methods of propagation in		
					plants, watch video and		
					write down their		
					individual observations.		
					Studentteachers observe		
	Developing				using a checklist for the		
	activities and				purpose designed by		
	Assessment				student teachers and their		
	strategies to teach				tutor, and discuss the		
	early grade how				outline for developing		
	plants propagate (demonstration				teaching strategies for		
	Phase)				early grade teaching and assessment. (PD Theme 8,		
	i ilasej				pg. 40; PD Theme 4, pg.		
					23-46)		
				Face-to-face/Group	-1		
				activity:	Face-to-face:		
				Tutor instructs	Studentteachers (working		
				studentteachers to work	in mixed ability groups)		
	Developing			in groups (in mixed ability)	prepare workbooks,		
	activities and			to prepare lesson plans	charts and models		
	assessment			designed for teaching and	outlining how to teach		
	strategies to teach early grade			learning which incorporates strategies to	and assess the concepts of propagation in plants to		
	propagation in			teach and assess early	early grade learners.		
	plants			grade propagation in	Student teachers are then		
	h			plants. After which each	put in groups to peer		
				group will write and	review reflective reports		
				present a reflective report	on inclusivity in the		
				on inclusivity on the	strategies designed.		
				designed activities.			
Which cross cutting				s to protect vulnerable stude			
issues will be				sphere and encourage collabo			
addressed or developed and how	Innovation and creativity through arranging and composition of songs and rhymes, designing and						
Lesson assessments –	construction of games  Assessment as lear		lent teacher	s provide songs, rhymes, mu	Itimedia presentation		
evaluation of		_		ortfolios. (20 marks)	itilicula presentation		
learning: of, for and as	-			media design of the concepts	and differences between		
, , , ,	1	0. 941					

learning within the lesson	living and non-living things by students for portfolio (weight = 10 marks)
Teaching Learning Resources	Copies of Early Grade year 3 course manuals, Phones, tablets, desktop computers with internet access, recorded videos, photographs. <a href="http://www.softschools.com/language_arts/reading_comprehension/science/21/living_and_non_living_things/">http://www.softschools.com/language_arts/reading_comprehension/science/21/living_and_non_living_things/</a>
Required Text (core)	NaCCA, MoE. (2019; September). <i>Kindergarten Curriculum (KG1&amp;2) for Preschool</i> . Accra: Ministry of Education Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). <i>Ghana association of science teachers integrated science for senior high schools</i> . Accra: Unimax MacMillan; Handbook for PD Coordinators Themes 1 – 10.
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools. Accra: Unimax Macmillan.  Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers: chemistry for senior high schools. Accra: Unimax MacMillan.  Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I.  Winneba: IEDE.  Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD Requirement	CoE Tutors need training on arranging and composing rhymes and songs as well as game construction
Course Assessment	Component 1: Subject Portfolio Assessment (30% overall score)  Selected Item of Student work (3 items – 10%) = 30%  Midterm assessment – 20%  Reflective Journal – 40%  Organization of the Subject Portfolio- 10% (How its presented/organized)  Component 2: Subject Project (30% overall Semester score)  Introduction; a clear statement of aim and purpose of the project -10%  Methodology; What the student teacher has done and why to achieve the purpose of the project – 20%  Substantive/Main section of the work – 40%  Conclusion – 30%  Component 3: End of Semester Examination – (40% overall Semester Assessment

<sup>1</sup> See rubrics on subject Portfolio Assessment in Annex 6 of NTEAP 2 See rubrics on Subject Project Assessment in Annex 6 of NTEAP

Year of B.Ed. 2	Semester	1	Place of lesson in semester	1 <b>2</b> 3 4 5 6 7 8 9 10 11 12
-----------------	----------	---	-----------------------------	-----------------------------------

Title of Lesson	How to teach Propagat	ion in Plan	ts		Lesson Duration	3 Hours	
Lesson description	The lesson involves tea	The lesson involves teacher led face-to-face discussions, practical activities, work-based					
•		learning on how to teach. This is to further reinforce methods used in Lessons 1 to enable					
	studentteachers acquire	e relevant ¡	pedagogic skill	s in the teaching	g of propagation in	plants.	
Previous student teacher	Studentteachers are aw	Studentteachers are aware of the different types of terrestrial and aquatic plants and their					
knowledge, prior learning	habitats from the previous	ous lesson(	Lessons 1)				
(assumed)							
Possible barriers to	Studentteachers may a	dopt to the	exact activitie	s and methods	used in teaching th	em without	
learning in the lesson	any variations and thus				her activities.		
Lesson Delivery – chosen	Face- Practical	Work-	Seminars	Independent	e-learning	Practicum	
to support students in	to-face ActivityV	Based		Study	opportunities		
achieving the outcomes		Learning <b>V</b>			٧		
Lesson Delivery – main	Face-to face: Discussion						
mode of delivery chosen	Practical Activities: Gro				ns		
to support student	Work-based learning: st						
teachers in achieving the	e-learning Opportunitie	es: Simulatio	ons, video pres	sentations			
learning outcomes. Purpose for the lesson,	This lesson is intended t	to holp stu	donttoachare t	o acquiro practi	cal skills of toachin	a how plant	
what you want the	propagate along the line	•			cai skiiis oi teachin	g now plants	
students to achieve,	propagate along the line	es of conce	pts acquired ii	11 LE330113 1			
serves as basis for the	NTS						
learning outcomes. An	1a) Critically and collect	tively reflec	cts to improve	teaching and lea	arning.		
expanded version of the	1c) Demonstrates effect	•	•	-	-	school.	
description.	Community of Practice	<b>6</b>	. S	,			
Write in full aspects	2c: Has secure content	knowledge	, pedagogical l	knowledge and p	pedagogical		
of the NTS addressed	content knowledge for						
	2e: Understands how ch		_		exts and applies		
	this in his or her teachir	ng.					
	3a) Plans and delivers v	aried and c	challenging less	sons, showing a	clear grasp of the		
	intended outcomes of t		•				
	3b) Carries out small-sc						
	3d: Manages behaviour						
Learning Outcome	Learning Outcomes		Learning Indic	ators	Identify which cr	_	
for the lesson, picked					issues, core and		
and developed from					skills, inclusivity.		
the course					addressing diver	-	
specification					will these be add developed	ressea or	
<ul> <li>Learning indicators for each learning</li> </ul>	Demonstrate pedag	gogic	<ul> <li>Prepared le</li> </ul>	scon nlans	Through group di	scussions	
outcome	content knowledge		• Prepared le which incor		and sharing of ide		
Outcome	skills of how plants		student act		studentteachers		
	propagate.		individual w	•	skills of commun		
	Studentteachers to	,		f e-resources,	collaboration and		
	prepare lessons on			tivity and face-	respect while app		
	propagation in plan		to-face	,	individual differe	_	
	teach in class.				abilities. They als		
	Demonstrate ident	ify the	Develop che	ecklist for use	skills in handling		
	core values of critic	-		g how teacher	develop critical tl		
			000001 11118		•		
		, L	designs and	demonstrates	nonesty, accurac	-	
	thinking, inclusivity	-		d learning	honesty, accuracy responsibility thr	y and	
	thinking, inclusivity collaboration in gro	oup	teaching an	d learning	responsibility thr	y and ough active	
	thinking, inclusivity	oup lent	teaching an			y and ough active	

	1 -				ı	
	strategies for te	_				
		how plants propagate to				
	early grade learners.					
	<ul> <li>Developing active</li> </ul>	ities and	• Prese	ent reflective reports		
	Assessment stra			clusivity and Models,		
	teach early grad			nes or any		
	propagation in p			opriate teaching and		
	propagationing	, iditio		ssment strategies		
				can be used to teach		
				grade propagation		
- 1/2:1	0.1 = 1	-·	in pla			
Topic/Title	Sub Topic	Time or St	age	Teaching and learnin		
						livery mode selected.
				Teacher led, collabor	ative g	roup work or
				independent study		
				Teacher Activity		Student Activity
How to teach	Recap of Lesson 1	40 minutes	5	Face-to-face:		Face-to-face:
Propagation in Plants	and Introduction			Invite individual		Observe and critique
	to lesson 2			studentteachers to m	ake 3	the presentations
				minutes presentation		made by individual
				sub-topics from Lesso		students
	How plants	70 minut	es	Face-to-face:		Face-to-face:
	propagate	70 11111101		Tutor directs student		Student teachers
	ргоравате			teachers to discuss		discuss methods of
				methods of propagati	ion in	propagation in plants,
				plants. Shows a short		watch video and write
						down their individual
				video on propagation	•	
						observations.
				Teacher introduce to		
				student teachers an		
				outline to develop		Studentteachers
				teaching and assessm	ent	observe using a
	Developing			strategies though		checklist for the
	activities and			demonstration and		purpose designed by
	Assessment			discussion for early gr	ade	student teachers and
	strategies to teach			teaching		their tutor, and discuss
	early grade how					the outline for
	plants propagate					developing teaching
	(demonstration					strategies for early
	Phase)					grade teaching and
						assessment. (PD
						Theme 8, pg. 40; PD
						Theme 4, pg. 23-46)
	Developing	70 minut	tes	Face-to-face/Group		Face-to-face:
	activities and			activity:		Studentteachers
	assessment			Tutor instructs		(working in mixed
	strategies to teach			studentteachers to w	ork in	ability groups) prepare
	early grade			groups (in mixed abili		workbooks, charts and
	propagation in				ιγ, ιΟ	models outlining how
				prepare lesson plans	and	_
	plants			designed for teaching	ana	to teach and assess
				learning which		the concepts of
				incorporates strategie		propagation in plants
				teach and assess early	У	to early grade
				grade propagation in		learners.
				plants. After which ea	ich	Student teachers are
		ī				
				group will write and		then put in groups to
				present a reflective re	eport	peer review reflective
					eport	
				present a reflective re	eport	peer review reflective

Add to be a second and the second	Facility and CERN through a manifest and a manifest
Which cross cutting	Equity and SEN: through appropriate gender and equity sensitive group work to protect
issues will be addressed	vulnerable studentteachers, establish an interactive and inclusive classroom atmosphere.
or developed and how	
Lesson assessments –	
evaluation of learning: of,	Assessment as learning: student teachers reflective report presentation serves as
for and as learning within	assessment as learning (20 marks)
the lesson	Assessment for Learning: Designed workbooks, lesson plans, chats and models to serves as
	assessment for learning. (20 marks)
Teaching Learning	Cardboards, poster papers, poster colours, phones, tablets, desktop computers with internet
Resources	access. Video clips on how plants propagate (go to YouTube and type in propagation of plants
	and select appropriate video)
	,,
Required Text (core)	NaCCA, MoE. (2019; September). Kindergarten Curriculum (KG1&2) for Preschool. Accra:
, , ,	Ministry of Education
	Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). Ghana
	association of science teachers integrated science for senior high schools. Accra: Unimax
	MacMillan; Handbook for PD Coordinators Themes 1 – 10.
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high
Additional Reduing List	schools. Accra: Unimax Macmillan.
	Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers: chemistry for
	senior high schools. Accra: Unimax MacMillan.
	Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I.
	Winneba: IEDE.
	Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL
	integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD Requirement	Training on Observation checklist construction.

Year of B.Ed. 2 Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12

Title of Lesson	Teachin	g of germina	ition in plants	Lesson Duratio	n 3 Hours				
Lesson description	The less	The lesson is abuildup on lesson 2 to further expand student teachers pedagogic content							
Lesson description									
		knowledge of how plants propagate by examining the processes involved in germination of plants. The lesson involves face-to-face discussions, practical activities, work-based learning on how							
		to teach germination.							
Previous student		•		different type	s of propagation	n in plants from tl	ne previous		
teacher knowledge,		essons 2)		ао. о сурс	. о от р. орадаето.	p.a	.е р.ет.еве		
prior learning	,	,							
(assumed)									
Possible barriers to	Student	teachers ma	y have miscor	nceptions and	misunderstandi	ng about the con	ditions necessary		
learning in the lesson						or swampy areas			
Lesson Delivery –	Face-	Practical	Work-	Seminars	Independent	e-learning	Practicum		
chosen to support	to-	Activity√	Based		Study	opportunities			
students in achieving	face √	_	<b>Learning</b> V			√			
the outcomes									
Lesson Delivery –	Face-to	face: Discuss	ions, demons	strations and o	bservations				
main mode of	Practica	l Activities: 0	Group present	ations of repo	orts and discussion	ons			
delivery chosen to	Work-ba	ased learning	g: studenttead	chers engage i	n peer teaching				
support student	e-learnii	ng Opportun	ities: Simulati	ions, video pre	esentations				
teachers in achieving									
the learning									
outcomes.									
Purpose for the	This less	on is intend	ed to further	help studentte	eachers embed p	oedagogic conten	t knowledge on		
lesson, what you	how pla	ns germinate	e and to acqu	ire the requisi	te practical skills	for teaching geri	mination in plants.		
want the students to									
achieve, serves as	NTS								
basis for the learning					teaching and le	_			
outcomes. An			_	ng leadership	qualities in the c	lassroom and wid	ler school.		
expanded version of		nity of Pract							
the description.					knowledge and	pedagogical			
Write in full		_		and grade the					
aspects of the				elop and lear	n in diverse cont	texts and applies			
NTS addressed		is or her tead	ū			-l	_		
			of their teach		scoris, showing a	clear grasp of th	e		
					prove practice.				
					and large classe	(2)			
• Learning		g Outcomes	our und iculti	Learning Ind			which cross-		
Outcome for the	Learning	5 Juctonies		Learning inc		-	ssues, core and		
lesson, picked							able skills,		
and developed							y. Equity and		
from the course							ng diversity. How		
specification							e be addressed or		
• Learning						develop			
indicators for	• Den	nonstrate pe	dagogic	Prepared	lesson plans wh		group discussions		
each learning		tent knowle			ites student acti	_	ing of ideas in		
outcome		s on condition	-	•	l work, group wo		dentteachers		
	geri	mination in p	olants.		esources, practi		the skills of		
	_	dentteacher			ppropriate for	commun			
		ons on germ			germination in	collabora	ation and mutual		
		nts to teach i		plants.		respect v	vhile appreciating		

the core values of critical thinking, inclusivity, collaboration in group work and independent reflection in designing teaching and assessment strategies for teaching how plants germinate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Teaching and learning to achieve learning outcomes: teaching and assessment strategies for teaching perminate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Teaching and learning to achieve learning outcomes: depending on delivery mode selected. Teacher led. collaborative group work or independent study  Teacher Activity  Teacher Activity  Teacher Activity  Teacher Activity  Tour instruction to leason 3  Plants  Power and the collaborative group work or independent study  Teacher Activity  Tour instruction to leason 3  Teacher Activity  Teacher Activity  Teacher Activity  Teacher Activity  Teacher Activity  Trutor instruction to leason 3  Teacher Activity  Trutor leads discussion to resolve any outstanding misconception made by individual students and in mixed ability groups to discuss the conditions, near growing. Tutor allows student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for germination.  Tutor allows student teachers to develop chats, models and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  To be proportate teaching and learning and assessing confections necessary for germination in plants.  To be proportate teaching and assessing confections necessary for germination in plants.  To be proportate teaching and assessing confection in plants.  To be proportate teaching and assessing confection in plants.  To be proportate teaching and assessing confection in plants.  To be proportate teaching and assessing confection in plants.  To be proportate teaching and ass			T		ı				
thinking, inclusivity, collaboration in group work and independent reflection in designing teaching and assessment strategies for teaching how plants germinate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Teaching and learning and teaching materials on how plants germinate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Teaching and learning to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study.  Faceto-face: Tutor invites individual students and introduction to lesson 3  Topic/Title  Recap of Lesson 2 and Introduction to lesson 3  Topic/Title  Recap of Lesson 2 and Introduction to lesson 3  Tutor invites individual students to outline the various types of plant propagation. Tutor leads discussion to resolve any outstanding misunderstanding/misconception Tutor leads student teachers to make a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to growing. Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for germination. They then work in appropriate teaching and the purpose designed by student teachers to develop chats, models and appropriate teaching learning growing. They observe using a checklist for the purpose designed by student teachers to develop chats, models and appropriate teaching learning growing. They observe using a checklist for the purpose designed by student teachers to work in groups (in mixed ability groups to treating germination in plants.  Pace-to-face Student teachers to work in groups (in mixed ability groups) to treating germination in plants.  Pace-to-face Student teachers to work in groups (in mixed ability groups) to treating germination in plants.  Pace-to-face It and the further to the purpose designed by student teachers to work in groups (in mixed ability groups) to treating and assess and plants.  Pace-to-face Student teachers to work in groups (in mi						-	-		
collaboration in group work and independent reflection in designing teaching and assessment strategies for teaching how plants germinate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Treaching and learning to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study Teacher Activity  Teacher Activity  Face-to-face: Tutor invites individual student teachers to until net the various types of plant propagation. Tutor leads discussion to resolve any outstanding misunderstanding/misconception misunderstanding/misconception misunderstanding/misconception references and teaching germination in plants  Conditions for germination in plants  Conditions for germination in plants  Conditions for germination in plants  Developing activities and assessment strategies to teach and assess and grade germination in plants.  Developing activities and assessment strategies to teach and assessment and model to write and present a model elesson plants. Each group is allowed to write and pr						_		-	
and independent reflection in designing treaching and assessment strategies for teaching how plants germinate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Tracaching and learning materials on how plants germinate to early grade learners.  Provide chats and teaching learning materials on how plants germinate  Topic/Title  Sub Topic  Time or Stage  Tracaching and learning to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study  Teacher Activity  Teacher Activity  Tutor invites individual student teachers to outline the various types of plant propagation.  Tutor leads discussion to resolve and orrect any misunderstanding/misconception in germination in plants  Conditions for germination in plants  Conditions for germination in plants  Topic/Title  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Tutor instructs student teachers to adevelop chats, models and appropriate teaching and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Tutor instructs student teachers to adevelop chats, models and appropriate teaching and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Tutor instructs student teachers to develop chats, models and appropriate teaching and assessing to teach and assess the plants. Each group is allowed to work and present a model lesson plants. Each group is allowed to write and present a model lesson plants. Each group is allowed to write and present a model lesson plants. Each group is allowed to write and present a model lesson to write each and assess the concepts on h							_		
in designing teaching and assessment strategies for teaching how plants germinate to early grade learners.  Topic/Title  Sub Topic  Time or Stage  Recap of Lesson 2 and Introduction to lesson 3  Introduction to lesson 3  Recap of Lesson 2 and Introduction to lesson 3  Face-to-face:  Topic/Title  Recap of Lesson 2 and Introduction to lesson 3  Topic/Title  Recap of Lesson 2 and Introduction to lesson 3  Recap of								-	
Topic/Title  Sub Topic  Time or Stage  Recap of Lesson 2 and Introduction to lesson 3  Plants  Recap of Lesson 1 and Introduction to lesson 3  Conditions for germination in plants  Conditions for germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Froudechasts and teaching learning to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study  Student Activity  Frace-to-face: Tutor invites individual studenteachers to outline the various types of plant propagation. Tutor ileads discussion to resolve any outstanding misconception in stake a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Froudechasts and learning to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study  Student teachers to student teachers to take pictures of stake p						_			
Topic/Title   Sub Topic   Time or Stage   Teaching and learning to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study   Teach of Jace: Tutor invites individual studentteachers to outline the various types of plant propagation. Tutor leads discussion to resolve any outstanding misunderstanding/misconception. Tutor leads discussion to resolve any outstanding misunderstanding/misconception   Face-to-face: Tutor leads student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to take part tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants.    Developing activities and assessment strategies to teach early grade germination in plants.   Pace-to-face: Tutor allows student teachers to work in groups (to design teaching and assessment strategies to teach early grade germination in plants.   Pace-to-face; Student teachers to take a walk around the environment to observe different plants and where they are growing. They once designed by student teachers to work in mixed ability to the purpose designed by student teachers and appropriate teaching learning materials necessary for teaching and assessment strategies to teach early grade germination in plants.   Pace-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and seasoning and learning strategies to teach and assess early grade germination in plants.   Pace-to-face of the purpose designed by student teachers and their tutor.			assessment strat	tegies for	Gr	ade teaching.	active	participation in	
Topic/Title    Sub Topic   Time or Stage   Collaborative group work or independent study   Teacher Activity   Teacher Activity   Teacher Activity   Student Activity   Teacher Activity   Teacher Activity   Teacher Activity   Student Activity   Teacher Activity			teaching how pla	ants	Provi	de chats and teaching	group	work/discussion.	
Topic/Title  Sub Topic  Recap of Lesson 2 and Introduction to lesson 3  Plants  Recap of Lesson 2 and Germination in Plants  Recap of Lesson 3  Sominutes  Recap of Lesson 2 and Introduction to lesson 3  Sominutes  Recap of Lesson 2 and Introduction to lesson 3  Sominutes  Recap of Lesson 2 and Sominutes individual Student Leachers to United the Various Agriculation in Plants  Recap of Lesson 2 and Sominutes individual Student Leachers to United the Various Agriculation in Plants  Recap of Lesson 2 and Introduction to lesson 3  Sominutes  Recap of Lesson 2 and Introduction to lesson 3  Sominutes  Recap of Lesson 2 and Sominutes individual Student Leachers to United the Various Agriculation in Plants  Recap of Lesson 2 and Introduction to lesson 3  Sominutes  Recap of Lesson 2 and Introduction to lesson 3  Sominutes  Recap of Lesson 2 and Introduction to lesson 3  Sominutes individual Student Leachers to United the Various Agriculation Introduction Int			_	rly grade		_			
A condition for germination in plants   Developing activities and assessment strategies to teach early grade germination in plants.   Developing activities and assessee arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination of plants.   Developing activities and assessees arily grade germination of plants.   Developing ac			learners.		germ	inate			
A condition for germination in plants   Developing activities and assessment strategies to teach early grade germination in plants.   Developing activities and assessee arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination of plants.   Developing activities and assessees arily grade germination of plants.   Developing ac									
A condition for germination in plants   Developing activities and assessment strategies to teach early grade germination in plants.   Developing activities and assessee arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination of plants.   Developing activities and assessees arily grade germination of plants.   Developing ac									
A condition for germination in plants   Developing activities and assessment strategies to teach early grade germination in plants.   Developing activities and assessee arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination in plants.   Developing activities and assessees arily grade germination of plants.   Developing activities and assessees arily grade germination of plants.   Developing ac	Tania/Titla	Ch.	Familia	T: C4-		Tarabina and lagurina to cal	-: I		
Conditions for germination in plants   Pace-to-face: Tutor invites individual students and correct any misconception germination in plants   Pace-to-face: Tutor invites individual students and correct any misconception any outstanding misunderstanding/misconception   Pace-to-face: Tutor leads discussion to resolve any outstanding misunderstanding/misconception   Pace-to-face: Tutor leads discussion to resolve any outstanding misconception   Pace-to-face: Tutor leads student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for germination.  Tutor allows student teachers to develop chats, models and appropriate teaching germination in plants.    Developing activities and assessment strategies to teach early grade germination in plants.   Pace-to-face: Student teachers to take a walk around the environment to observe different plants and where they are growing. They observe using a checklist for the purpose designed by student teachers to develop chats, models and appropriate teaching learning germination in plants.   Pace-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups to designe the prepare chats/reports showing conditions necessary for germination in plants.   Pace-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and assessing concepts in germination of plants.   Pace-to-face/Group activity: Tutor instructs studentteachers and their tutor.   Pace-to-face/Group activity: Tutor instructs studentteachers and their tutor.   Pace-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups to designed the prepare workbooks, charts and models own the prepare workbooks, charts and mode	Topic/Title	Sub	Горіс	Time or Sta	ge	_			
New to teach Germination in Plants									
Recap of Lesson 2 and Introduction to lesson 3  Recap of Lesson 2 and Introduction to resting the presentation of list students and correct any misconceptions  Recap of Lesson 2 and Les of Lesson 1  Recap of Lesson 2 and Lesson 1  Recap of Lesson 2 and Lesson 1  Recap of Lesson 3  Recap of Lesson 2 and Lesson 1  Recap of Lesson 3  Recap of Lesson 2 and Lesson 1  Recap of Lesson 3  Recap of Lesson 4  Recap of Lesson							шиср		
Introduction to lesson 3   Introduction 1   I	How to teach	Reca	n of Lesson 2 and	30 minutes		•		•	
Plants    Studentteachers to outline the various types of plant propagation. Tutor leads discussion to resolve any outstanding misunderstanding/misconception misunderstanding/misconception misunderstanding/misconception misconceptions. Tutor leads student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to work in mixed ability groups to discuss the conditions necessary for germination. Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants			•	Jo minutes					
various types of plant propagation. Tutor leads discussion to resolve any outstanding misunderstanding/misconception  Conditions for germination in plants  Poweloping activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess searly grade germination in plants.  Eace-to-face Student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants.  Face-to-face Student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants.  Face-to-face foroup activity: Tutor instructs student teachers to prepare chats/reports showing conditions necessary for germination in plants.  Face-to-face/Group activity: Student teachers to work in mixed ability groups to prepare chats/reports showing conditions necessary for germination in plants.  Face-to-face foroup activity: Student teachers take pictures (or sketch) different young plants and where they are growing. Tutor allows student teachers to develop chats, models and appropriate teaching show the purpose designed by student teachers to teach germination and design other Tutor.  They then work in mixed ability groups to prepare chats/reports showing conditions necessary for germination in plants.  Face-to-face (Student teachers to teach and assessing to teach and assessing to teach and assessing to teach and assessing to teac			22200 10 1000011 0				ne		
Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants. Each group is allowed to write and present a model less on plants.  Developing activities and assessing concepts in germination of plants.  Developing activities and assess the teach group activity: Tutor instructs student teachers to designed by student teachers to devide a dability of the propose designed by student teachers to develop chats, models and appropriate teaching germination in plants.  Face-to-face: Student teachers Student by ourse they observe using a checklist for the purpose designed by student teachers to develop chats, models and appropriate teaching germination.  Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants.  Face-to-face: Student teachers Student by observe using a checklist for the purpose designed by student teachers to develop chats, models and appropriate teaching germination.  Face-to-face: Student teachers to develop chats, models and appropriate teaching germination.  Face-to-face: Student teachers Student teachers to develop chats, models and appropriate teaching in the purpose designed by student teachers to develop chats, models and appropriate teaching learning								· ·	
any outstanding /misconception misconceptions misconceptions for germination in plants  Face-to-face: Tutor leads student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to develop chats, models and appropriate teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess searly grade germination in plants.  Developing activities and assess early grade germination in plants.  Face-to-face: Student teachers to sketch) different young plants and where they are growing. They observe using a checklist for the purpose designed by student teachers to develop chats, models and appropriate teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face: Student teachers sto sketch) different young plants and where they are growing. They observe using a checklist for the purpose designed by student teachers to develop chats, models and appropriate teaching germination in plants have appropriate teaching and their tutor. They then work in mixed ability groups to prepare chats/reports showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Face-to-face/Group activity: Face-to-face								-	
Conditions for germination in plants    Po minutes   Face-to-face:   Student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to work in miked ability groups to discuss the conditions necessary for germination.    Tutor allows student teachers to develop chats, models and appropriate teaching germination in plants						Tutor leads discussion to res	olve	students and	
Conditions for germination in plants    Face-to-face: Tutor leads student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to develop chats, models and appropriate teaching germination in plants    Developing activities and assessment strategies to teach early grade germination in plants.   Face-to-face: Student teachers to student teachers to develop to discuss the conditions necessary for germination.   Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants								•	
germination in plants    Tutor leads student teachers to take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to work in mixed ability groups to discuss the conditions necessary for germination.    Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants    Developing activities and assessment strategies to teach early grade germination in plants.							ption		
take a walk around the environment to observe different plants and where they are growing. Tutor allows student teachers to work in mixed ability groups to discuss the conditions necessary for germination.  Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess serly grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups to prepare chats/reports showing conditions necessary for germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups) germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups) germination in plants.  Face-to-face/Group activity: Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies to neach and assess the concepts of plants.				90 minu	tes				
environment to observe different plants and where they are growing. Tutor allows student teachers to work in mixed ability groups to discuss the conditions necessary for germination.  Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Each of a germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in mixed ability to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.		germ	nination in plants				to		
plants and where they are growing. Tutor allows student teachers to work in mixed ability groups to discuss the conditions necessary for germination.  Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups to prepare to work in groups (in mixed ability groups to teach early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and sasess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.							oront		
growing. Tutor allows student teachers to work in mixed ability groups to discuss the conditions necessary for germination.  Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess searly grade germination in plants.  Face-to-face/Group activity: Tutor instructs student teachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and ssessing concepts in germination of plants.  Beveloping activities and assess the concepts of plants.							erent	-	
teachers to work in mixed ability groups to discuss the conditions necessary for germination.  Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants.  Face-to-face/Group activity: Studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants.  Face-to-face/Group activity: Studentteachers (working in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.							nt		
Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess sment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Developing activities and assessing concepts in germination of plants.								•	
necessary for germination. Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teach and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Tutor instructs studentteachers to work in groups (in mixed ability) to design teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.							-		
Tutor allows student teachers to develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and assessing conditions necessary for germination in plants.  Face-to-face/Group activity: Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of								checklist for the	
develop chats, models and appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing conditions necessary for germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing strategies on how to concepts in germination of plants.						, -		purpose designed	
appropriate teaching learning materials necessary for teaching germination in plants  Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assess early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts of plants.  They then work in mixed ability groups to prepare chats/reports showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Face-to-face/Group activity: Face-to-face/Group activity: Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to concepts in germination of plants.						Tutor allows student teacher	rs to	by student teachers	
materials necessary for teaching germination in plants  mixed ability groups to prepare chats/reports showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing cutlining teaching strategies on how to concepts in germination of plants.  mixed ability groups to prepare chats/reports showing conditions necessary for germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) studentteachers (working in mixed ability) groups) prepare workbooks, charts and models outlining teaching strategies on how to concepts in germination of plants.						I i			
peveloping activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  to prepare chats/reports showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Face-to-face/Group activity: Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of							-	-	
Developing activities and assessment strategies to teach early grade germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Chatts/reports showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Face-to-face/Group activity: Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of						· ·	ning		
Showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Showing conditions necessary for germination and design other TLMs that could be used for teaching germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of						germination in plants			
Developing activities and assessment strategies to teach early grade germination in plants.    Developing activities and assessment strategies to teach early grade germination in plants.									
Developing activities and assessment strategies to teach early grade germination in plants.    Developing activities and assessment strategies to teach early grade germination in plants.   Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.   Germination and design other TLMs that could be used for teaching germination in plants.   Face-to-face/Group activity: Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of								~	
Developing activities and assessment strategies to teach early grade germination in plants.    Developing activities and assessment strategies to teach early grade germination in plants.   Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.   Concepts of the concepts of teach and assess the concepts of teach and assess the concepts of								,	
Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  that could be used for teaching germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability): Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of								_	
Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assess the concepts of germination in plants.  Government of plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability): Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of									
Developing activities and assessment strategies to teach early grade germination in plants.    Developing activities and assessment strategies to teach early grade germination in plants.   Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.   Concepts of								for teaching	
Developing activities and assessment strategies to teach early grade germination in plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assess the concepts in germination of plants.  Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of								germination in	
assessment strategies to teach early grade germination in plants.  Tutor instructs studentteachers to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Tutor instructs studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of									
teach early grade germination in plants.  to work in groups (in mixed ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  Studentteachers (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of				60 minute	es				
germination in plants.  ability) to design teaching and learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  (working in mixed ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of			_				ers	•	
learning strategies to teach and assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  learning strategies to teach and ability groups) prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of						=	d		
assess early grade germination in plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  prepare workbooks, charts and models outlining teaching strategies on how to teach and assess the concepts of		germ	iiiiation in plants.					-	
plants. Each group is allowed to write and present a model lesson plan for teaching and assessing concepts in germination of plants.  charts and models outlining teaching strategies on how to teach and assess the concepts of									
write and present a model lesson plan for teaching and assessing concepts in germination of plants.  outlining teaching strategies on how to teach and assess the concepts of									
plan for teaching and assessing concepts in germination of plants.  strategies on how to teach and assess the concepts of									
concepts in germination of teach and assess the plants. teach and assess the						-			
plants. concepts of							-		
germination in								concepts of	
								germination in	

	plants to early grade learners (PD Theme 8, pg. 40; PD Theme
	4, pg. 23-46)
Which cross	Equity and SEN: through appropriate gender and equity sensitive group work to protect vulnerable
cutting issues will be	studentteachers, establish an interactive and inclusive classroom atmosphere.
addressed or	
developed and	
how	
Lesson	
assessments –	• Assessment as learning: student teachers reflective reports and presentation serves as assessment as
evaluation of	learning (20 marks)
learning: of, for	Assessment for Learning: Designed workbooks, teaching learning materials, chats and models to
and as learning	serves as assessment for learning. (20 marks)
within the lesson	
Teaching	Cardboards, poster papers, poster colours, phones, tablets, desktop computers with internet access.
Learning	Video clips on how plants propagate, e.g.,
Resources	
Required Text	NaCCA, MoE. (2019; September). Kindergarten Curriculum (KG1&2) for Preschool. Accra: Ministry of
(core)	Education
	Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). Ghana
	association of science teachers integrated science for senior high schools. Accra: Unimax MacMillan;
	Handbook for PD Coordinators Themes 1 – 10.
Additional	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools.
Reading List	Accra: Unimax Macmillan. Ameyibor, K., &Wiredu, M. B. (2006). <i>Ghana association of science teachers: chemistry for senior high</i>
	schools. Accra: Unimax MacMillan.
	Asabere-Ameyaw, A., &Oppong, E. K. (2013). <i>Integrated science for the basic school teacher I</i> . Winneba:
	IEDE.
	Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated
	science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD	Training on Observation checklist construction.
Requirement	

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 <b>4</b> 5 6 7 8 9 10 11 12
---------------	---	----------	---	-----------------------------	-----------------------------------

Title of Lesson	Teaching of classification of	animals and the Human Bo	dy	Lesson Duration	3 Hours			
Previous student teacher knowledge, prior learning	animals and the Human Bod based learning on types of a general structure and functi	The lesson is intended to give student teachers pedagogic content knowledge on classification of animals and the Human Body. The lesson involves face-to-face discussions, practical activities, work-based learning on types of animals, some feeding habits of sheep, goats, cats and dogs as well the general structure and function of the Human Body.  Studentteachers are familiar with different domestic animals, such as sheep, goats and dogs.						
(assumed)								
Possible barriers to learning in the lesson	Studentteachers may have r different animal assuming the		rstanding abou	t the feeding habi	ts of			
Lesson Delivery – chosen to support students in achieving the outcomes	Face- Practical Wo to-face Activity Bas	rk- Seminars ed	Independent Study	e-learning opportunities	Practicum			
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	Practical Activities: Group pr Work-based learning: studen	Face-to face: Discussions, demonstrations and observations Practical Activities: Group presentations of reports and discussions Work-based learning: studentteachers engage in peer teaching e-learning Opportunities: Simulations, video presentations						
Purpose for the lesson, what you want the students to achieve, serves as basis for the learning	This lesson is intended to further help studentteachers embed pedagogic content knowledge on classification of animals and to acquire the requisite practical skills for teaching types of animals and their feeding habits.							
outcomes. An expanded version of the description. • Write in full aspects of the NTS addressed	NTS  1a) Critically and collectively reflects to improve teaching and learning.  1c) Demonstrates effective growing leadership qualities in the classroom and wider school. Community of Practice  2c: Has secure content knowledge, pedagogical knowledge and pedagogical content knowledge for the school and grade they teach in.  2e: Understands how children develop and learn in diverse contexts and applies this in his or her teaching.  3a) Plans and delivers varied and challenging lessons, showing a clear grasp of the intended outcomes of their teaching.  3b) Carries out small-scale action research to improve practice.  3d: Manages behaviour and learning with small and large classes)							
<ul> <li>Learning         Outcome for the             lesson, picked             and developed             from the course     </li> </ul>	Learning Outcomes	Learning Indicators	core a inclusi divers addres	fy which cross- cu nd transferable sk vity. Equity and a ity. How will theso ssed or developed	ills, ddressing e be			
<ul> <li>specification</li> <li>Learning indicators for each learning outcome</li> </ul>	<ul> <li>Demonstrate pedagogic content knowledge and skills on classification of animals.</li> <li>Studentteachers to prepare lessons on types of animals and their feeding habit for peer teaching.</li> </ul>	which incorporates stu	udent sharing studer comm tivity mutua individuel They a device	gh group discussion gof ideas in class in the class in th	o the skills of ration and preciating I abilities. In handling thinking,			

Demonstrate an identify the core of critical thinking inclusivity, collaboration in work and independent of the collaboration in destruction in destruction in destruction in destruction and assessment strates for teaching classification on animals to early learners.	values observing the core values and develop appropriate teaching and learning materials/strategies for Early Grade teaching.  Provide chats and teaching learning materials appropriate for teaching classification of animals.
--	--

Topic/Title	Sub Topic	Time or Stage	Teaching and learning to achieve learn mode selected. Teacher led, collaborate	
			Teacher Activity	Student Activity
How to teach classification of animals	Recap of Lesson 3 and Introductio n to lesson 4	30 minutes	Face-to-face: Tutor invites individual studentteachers to recap lessons learned from previous lesson, listing any areas of difficulty. Tutor leads discussion to resolve any outstanding misunderstanding/misconception and difficulties	Face-to-face: Student teachers discuss and reflect on previous lesson and discuss areas of difficulty with tutor and correct any misconceptions
	Types of animals	75 minutes	Face-to-face/Group work: Tutor allows student teachers to work in mixed ability groups to discuss the types of animals known to them.  Student teachers then develop chats, models and appropriate teaching learning materials necessary for teaching types of animals. Tutor provides a short video clip of types of animals, e.g.,https://www.youtube.com/watch?v=10J0DDqVts8	Face-to-face/Group work: Student teachers watch short video clip and then work in mixed ability groups to prepare chats/sketches showing different types of animals and design other TLMs that could be used for teaching types of animals.
	Feeding habits of goats, sheep, dogs and cats	75 minutes	Face-to-face/Group activity: Tutor instructs studentteachers to work in groups (in mixed ability) to discuss feeding habits of the animals listed in the previous activity. Tutor allows student teachers plan a lesson suitable for teaching early grade.At least two group are allowed a maximum of 5 minutes to make their presentation (peer teaching)	Face-to-face/Group activity: Studentteachers (working in mixed ability groups) discuss the feeding habits of animals and prepare lesson plan suitable for peer teaching and assessment on feeding habits of animals to early grade learners.(PD Theme 8, pg. 40; PD Theme 4, pg. 23-46). Student teachers peer review and report on presentations by groups.

Which cross cutting issues will be addressed or developed and how	Equity and SEN: through appropriate gender and equity sensitive group work to protect vulnerable studentteachers, establish an interactive and inclusive classroom atmosphere.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<ul> <li>Assessment as learning: student teachers group presentations and peer review reports serve as assessment as learning (20 marks)</li> <li>Assessment for Learning: Student teachers lesson plans, teaching learning materials, chats and models to serves as assessment for learning. (20 marks)</li> </ul>
Teaching Learning Resources	Cardboards, poster papers, poster colours, phones, tablets, desktop computers with internet access. Video clips on types of animals, e.g., <a href="https://www.youtube.com/watch?v=1oJ0DDqVts8">https://www.youtube.com/watch?v=1oJ0DDqVts8</a>
Required Text (core)	NaCCA, MoE. (2019; September). Kindergarten Curriculum (KG1&2) for Preschool. Accra: Ministry of Education Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). Ghana association of science teachers integrated science for senior high schools. Accra: Unimax MacMillan; Handbook for PD Coordinators Themes 1 – 10.
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools.  Accra: Unimax Macmillan.  Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers: chemistry for senior high schools. Accra: Unimax MacMillan.  Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I. Winneba: IEDE.  Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD Requirement	Training on preparation of checklist construction and technical report writing.

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1234 <b>5</b> 6789101112
---------------	---	----------	---	-----------------------------	--------------------------

							•				2.11	
Titl	le of Lesson	Teaching of parts and functions of the human body							Lesson Duration	)	3 Hours	
Les	son description	The less	on covers acti	vities to	o emb	ed pedagogic	content kno	owled	ge in teaching par	rts and	functions of	
		the hum	an body.It inv	olves f	ace-to	-face discussion	ons, group d	discuss	sions, practical ac	tivities	and	
		presenta	ations on the h	numan	body.							
Pre	vious student	Student	Studentteachers are familiar with the different parts of the human body.									
tea	cher knowledge,											
pri	or learning											
(as	sumed)											
	ssible barriers to					•		_	about some of th		ctions of	
	rning in the lesson	some pa							of using the left h			
Les	son Delivery –	Face-	Practical	Wo	rk-	Seminars	Independ	lent	e-learning	P	racticum	
cho	osen to support	to-face	Activity	Bas			Study	,	opportunities			
stu	dents in achieving	٧	٧	Lear	ning				٧			
the	outcomes			V								
	son Delivery –					cussions, dem						
	in mode of delivery					ations of repor			S			
	sen to support		_			ners engage in	peer teachi	ing				
	dent teachers in	e-learnii	ng Opportunit	ies: vid	leo pre	esentations						
	nieving the learning											
	tcomes.											
	rpose for the								dagogic content k		-	
	son, what you want	_	and to acquir	e the r	requisi	ite practical sk	ills for teach	ning p	arts and function	s of th	e human	
	students to	body.										
	nieve, serves as											
	sis for the learning	NTS			CI.							
	tcomes. An					ts to improve	_		-			
_	panded version of	-		_	rowin	g leadership q	ualities in tr	ne clas	ssroom and wider	rscnoc	ol.	
	description.		nity of Practice		ladaa	nodogogical l	م معلام المعامم		dogogical			
•	Write in full				_	pedagogical k	_	inu pe	dagogicai			
	aspects of the NTS addressed		_			and grade they		contov	ts and applies			
	N13 auuresseu		s or her teach		ii ueve	elop allu lealli	iii uiveise c	Jonitex	its and applies			
				•	and c	hallenging less	ons showin	no a cl	ear grasp of the			
			d outcomes of				10113, 3110 WII	16 0 01	car grasp or the			
						esearch to imp	rove practi	CE				
		-				ng with small a						
•	Learning Outcome		Outcomes			ing Indicators			tify which cross-	cuttin	g issues,	
	for the lesson,					3			and transferable			
	picked and								ty and addressing		-	
	developed from							-	these be address	-		
	the course	• Den	nonstrate		• Pre	epared lesson	plans		ugh group discus			
	specification		agogic conten	t		ich incorporat			eas in class stude		_	
•	Learning	•	wledge and sk			Ident activities		the s	kills of communic	cation,	•	
	indicators for		he human boo		ind	lividual work,	group	colla	boration and mu	tual re	spect while	
	each learning		dentteachers t	-		ork, use of e-re		appr	eciating individua	al diffe	rence and	
	outcome	pre	oare lessons o	n		actical activity		abilit	ties. They also aco	quire s	kills in	
		par	s and function	าร	apı	propriate for t	eaching	hand	dling devices, dev	elop cı	itical	
			ne human bod		pai	rts and functio	ns of the		king, honesty, acc			
		for	oossible peer		hu	man body.			onsibility through			
		tead	ching.					parti	cipation in group	work/	discussion.	

identi value: thinki collab group indep reflec desigi and a		onstrate and ify the core is of critical ing, inclusivity, oriention in o work and endent ition in ning teaching issessment igies for	Develop checklist for use in observing the core values and develop appropriate teaching and learning materials/strategies for teaching parts and functions of the human body at the Early Grade level.		
		functi huma	ing parts and ions of the in body to early learners.		
Topic/Title	Sub T	opic	Time or Stage	Teaching and learning to achieve delivery mode selected. Teacher independent study	learning outcomes: depending on ed, collaborative group work or
				Teacher Activity	Student Activity
How to teach	Recar	o of	20 minutes	Face-to-face:	Face-to-face:
parts and functions of the human body	parts and Lesson 4 and Introduction to		20 minutes	Tutor invites individual studentteachers to recap presentations from previous lesson, listing any areas of difficulty. Tutor leads discussion to resolve any outstanding misunderstanding/misconception and difficulties	Student teachers discuss and reflect on previous lessonand discuss any areas of difficulty with tutor and correct any misconceptions
	Parts of the human body		80 minutes	Face-to-face/Group work: Tutor allows student teachers to work in mixed ability groups to discuss the parts of the human body.  Student teachers then develop chats, models and appropriate teaching learning materials necessary for teaching parts of the human body.	Face-to-face/Group work: Student teachers work in mixed ability groups to prepare chats/sketches showing different parts of the human body that appropriate for teaching same.
	the hi body	uman	80 minutes	Face-to-face/Group activity: Tutor provides a short video clip or allows student teachers to role play on functions of the human body. Tutor instructs studentteachers to work in groups (in mixed ability) to discuss the functions of the human body. Tutor allows student teachers plan a lesson on functions of the human body suitable for teaching early grade. One or two groupsmay be allowed a maximum of 5 minutes to make their presentation for peer reviewing.	Face-to-face/Group activity: Studentteachers watch short video on functions of the human body or role play it. They work in mixed ability groups todiscuss the functions of the human body and prepare lesson plans suitable for teaching early grade learners.(PD Theme 8, pg. 40; PD Theme 4, pg. 23-46). Student teachers peer review and report on presentations by groups.
Which cross cutting issues will be addressed or				ate gender and equity sensitive grou ractive and inclusive classroom atmo	

developed and how	
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<ul> <li>Assessment as learning: student teachers group presentations and peer review reports serve as assessment as learning (20 marks)</li> <li>Assessment for Learning: Student teachers lesson plans, teaching learning materials and chats to serves as assessment for learning. (20 marks)</li> </ul>
Teaching Learning Resources	Cardboards, poster papers, poster colours, phones, tablets, desktop computers with internet access. Video clips on parts and functions of the human body e.g. <a href="https://www.youtube.com/results?search">https://www.youtube.com/results?search</a> query=functions+of+the+human+body
Required Text (core)	NaCCA, MoE. (2019; September). <i>Kindergarten Curriculum (KG1&amp;2) for Preschool</i> . Accra: Ministry of Education Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). <i>Ghana association of science teachers integrated science for senior high schools</i> . Accra: Unimax MacMillan; Handbook for PD Coordinators Themes 1 – 10.
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools.  Accra: Unimax Macmillan.  Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers: chemistry for senior high schools. Accra: Unimax MacMillan.  Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I. Winneba: IEDE.  Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD Requirement	Training on preparation of checklist construction and technical report writing.

Year of B.Ed.	2	Semester	1	Place of lesson in semester	12345 <b>6</b> 789101112
---------------	---	----------	---	-----------------------------	--------------------------

Title of Lesson	Course Review I	with STS semi	nar		Lesson Duration	3 hours				
Lesson description			t of the lessons for							
			s learned, reflectio	n on observatior	ns made during th	e supported				
	teaching in school									
Previous student teacher	Lessons learnt from lesson 1 through lesson 5 in all learning approaches and observations/experiences during STS.									
knowledge, prior learning	observations/experiences during STS.									
(assumed) Possible barriers to learning	Lack of understanding and possible misconception to some concepts not adequately dealt with									
in the lesson			rstood by student		nts not adequately	deait with.				
Lesson Delivery – chosen to	Face- Practi		•	Independent	e-learning	Practicum				
support students in	to-face Activ			Study	opportunities	- racticani				
achieving the outcomes	V	Learnin		V	V					
Lesson Delivery – main	Face-to-Face: Dis		work in same abil	ity group works.						
mode of delivery chosen to			oncept Mapping ar							
support student teachers in			student teacher re		ually and collectiv	ely)				
achieving the learning	e-learning Oppo	tunities: OERs	and Video present	tations						
outcomes.										
<ul> <li>Purpose for the lesson,</li> </ul>	Ascertain the	e level of unde	rstanding of conce	pts.						
what you want the	<ul> <li>Test various</li> </ul>	skills and cross	- cutting issues							
students to achieve,	Provide rem	edial tuition/tu	torials where nece	essary for experie	ences during STS					
serves as basis for the	<ul> <li>Correct misc</li> </ul>	onceptions and	d misinformation							
learning outcomes. An	Build the nee	essary suppor	t going forward on	SEN and gender	issues					
expanded version of the										
description.	NTS									
Write in full aspects of			lects to improve to							
the NTS addressed		_	ving leadership qu	alities in the clas	sroom and wider	school.				
	Community of Pr									
			lge, pedagogical kr		dagogical					
			ol and grade they levelop and learn i		te and annline					
	this in his or her		ievelop and learn i	ii diverse context	is and applies					
		•	d challenging lesso	ns showing a cle	ear grash of the					
	intended outcom			mis, showing a cit	car grasp or the					
			n research to impr	ove practice.						
			rning with small ar							
			0	,						
Learning Outcome for	Learning Outcom	nes	Learning Indicato	rs	Identify which o	ross –				
the lesson, picked and					cutting Issues, c					
developed from the					transferable ski					
course specification					inclusivity. Equi					
<ul> <li>Learning indicators for</li> </ul>					addressing dive	•				
each learning outcome					will these be ad	dressed or				
					developed					
	<ul> <li>Identify weakn</li> </ul>		<ul> <li>Make a list of</li> </ul>		Collaborations,					
	strengths in lea		and strengths	'	Communication					
	early grade sci		papers for sh	arıng	Research: Throu					
	for the period	under			work and preser	ntation				
	review				- · · · · · ·					
	Be able to refle		Provide a refl	•	Equity and Refle					
	lessons learnt			emonstrations	developed from	reflective				
	and state new	_		ons on a given	activities					
	and/or grey ar	eas needing	media of less	ons learnt so						
	remedies		far							

Content of lesson picked and developed from the course specification  Topic Title	<ul> <li>Correct         misconception/misi         tion for earlier (less         5) lessons</li> <li>Sub Topic</li> </ul>		Present concept maps and/or models linking misconceptions/misinforma tion to new insights  Teaching and learning to ac depending on delivery mod collaborative group work of Teacher Activity	de selected. Teacher led,
			Facilitate and provide the necessary tools for student activities.	
Course Review 1 with STS seminar	Reviewing the understanding of lessons on plants and their habitats, propagation in plants, classification of animals, the human body and discussion of observations during STS	90 minutes	brainstorming session with student teachers to unearth the weaknesses and strengths of student teachers in the lessons 1 – 5. Initiate discussion using groupings (Same ability and then mixed groups) to identify student teachers' strengths and weakness in the lessons learnt so far.  STS Seminar: Teacher allows two or three resource persons to make presentations on STS based on the NTS. Tutor then guides student teachers through problembased learning on National Teacher's Standards and reflection on observations made during STS.	Face-to-face:Student teachers discuss their problems in the previous lessons and provide a checklist to identify and record all possible weaknesses and strengths.  STS Seminar:Student teachers listen to various presentations from their observation in STS on how science learning is conducted in the schools. Student teachers then discuss observations made during STS based on the National Teacher's Standards, reflect and provide a checklist of lessons learned and problems identified and how they can be addressed. Student teachers then provide a reflection report on STS.
	Remedies to course topics	30 minutes	Face-to-face: Teacher groups student teachers according to remedy need and provide specific task assistance in the areas on concept needing remedy.	Face-to-face: Students work in the special groups (Same remedy need group) on tasks to remedy their learning need. They then present concept maps and/or models linking misconceptions/misinform ation to new insights.

Which cross cutting issues	Equity and SEN: through mixed and same group work to protect vulnerable student teachers
will be addressed or	and establishing an interactive and inclusive classroom atmosphere.
developed and how	Through modelling and group work, collaboration is established.
Lesson assessments –	Student teachers' presentations during group work and model work presentation helps to
evaluation of learning: of, for	assess them of learning (20 marks)
and as learning within the	Assessment for and as learning: Student teachers working in groups on remedial tutoring
lesson	helps to assess them for and as learning (20 marks)
Teaching Learning Resources	Cardboards, Course manual, Flip charts, Poster paper
Required Text (core)	NaCCA, MoE. (2019; September). Kindergarten Curriculum (KG1&2) for Preschool. Accra:
	Ministry of Education
	Abbey, T. K., Alhassan, M. B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008).
	Ghana association of science teachers integrated science for senior high schools. Accra: Unimax
	MacMillan.
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high
	schools. Accra: Unimax Macmillan.
	Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers chemistry for
	senior high schools. Accra: Unimax MacMillan.
	Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I.
	Winneba: IEDE.
	Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V., & Obeng-Ofori, D. (2011). SWL
	integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD Requirement	Training on preparation of checklist and Reflection guides. Workshop on developing simple
	teaching learning materials (improvisation)

Year of B.Ed. 2	2 Semester	1	Place of lesson in semester	123456 <b>7</b> 89101112
-----------------	------------	---	-----------------------------	--------------------------

Title of Lesson	Teaching	Water, Air and So	oils			Lesson Duration	3 Hours				
Previous student teacher knowledge, prior learning	water as involveso presenta	The lesson covers activities to embed pedagogic content knowledge in teaching qualities of clean water as well as the uses of water, Air and its uses and some structure and uses of soils. The lesson involves co-teaching, co-planning and co-assessing, group discussions, practical activities and presentations on the content matter for early grade teaching.  Studentteachers are familiar with the air, water and soils around them									
(assumed) Possible barriers to	Studentt	Studentteachers may have misconceptions and misunderstanding about the causes of water pollution,									
learning in the lesson		hip between air ar			_						
Lesson Delivery – chosen to support students in achieving	Face- to-face √	Practical Activity √	Work- Based Learning	Seminars	Independent Study	e-learning opportunities	Practicum				
the outcomes Lesson Delivery –	Face to f	ace/Group discuss	ioni Disawas'a	oo doroonst	options sold all a	omistions					
main mode of delivery chosen to support student teachers in achieving the learning outcomes.	Practical Work-bas	Activities: Group posed learning: stude g Opportunities: v	oresentations entteachers er	of reports an ngage in co-te	d discussions						
Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An	NTS										
expanded version of the description.  • Write in full aspects of the NTS addressed	2c: Has so content keep 2e: Under this in his 3a) Plans intended 3b) Carrie	ity of Practice ecure content kno knowledge for the rstands how childs or her teaching. and delivers varie outcomes of their es out small-scale ages behaviour and	school and gr ren develop and d and challen teaching. action researc	ade they tead nd learn in di ging lessons, h to improve	ch in. verse contexts showing a clea practice.	and applies					
Learning     Outcome for the     lesson, picked     and developed	Learning	Outcomes	Learning	Indicators	core a	ify which cross- cu and transferable sl y and addressing d nese be addressed	cills, inclusivity. liversity. How				
from the course specification  • Learning indicators for each learning outcome	cont skills • Stud prep qual clear teac	onstrate pedagog ent knowledge and for teaching wate entteachers to are lessons on ities and uses of an water for co- hing and co- ssing.	d plans ir. incorp activi work, of e-r activi co-te and u Devel	epared lesso which corates stude ties, individual group work, esources, practy appropriate aching qualitieses of clean voped templasessing teach	of ide devel al collab use appre actical abiliti e for handl ies thinki water. respo te for partic	igh group discussion as in class student: op the skills of comporation and mutual claim in the state of the s	teachers nmunication, al respect while difference and re skills in op critical acy and ctive				

qualities core valu thinking, inclusivit in group designin assessm for teach			constrate leadership tiesand identify the values of critical ing, equity, sivity, collaboration oup work and ning teaching and sment strategies eaching qualities uses of water to grade learners.	Develop checklist for use in observing the core values and develop appropriate teaching and learning materials/strategies for teaching qualities and uses of clean water at the Early Grade level.			
Topic/Title	Sub T	opic	Time or Stage	Teaching and learning to on delivery mode selecte work or independent stu	d. Teacher le	ning outcomes: depending d, collaborative group	
				Teacher Activity			
How to teach	Recap	n of	20 minutes	Face-to-face:		Student Activity Face-to-face:	
qualities and	-	n 5 and	20 111111111111111111111111111111111111	Tutor invites individual		Student teachers discuss	
uses of clean		duction		studentteachers to recap		and reflect on lessons 5	
water	to les			· ·	presentations from lesson 5 and 6 if		
				·	any, listing any areas of difficulty.		
				Tutor leads discussion to		areas of difficulty with tutor and correct any	
				further	-		
				misunderstanding/miscor	nception		
				and difficulties			
	Qualit	ties of	80 minutes	Face-to-face/Group work	<b>c:</b>	Face-to-face/Group	
	clean	water		Tutor allows student tead	hers to	work:	
				work in mixed ability grou		Student teachers work in mixed ability groups to	
					discuss the qualities of clean water.  (if not available within the immediate environs tutor can organize a field trip to a water purification site prior to the lesson)		
						teaching same. co-plan lessons for teaching.	
				Student teachers then de			
					models and write reports from the field trip and work in groups to co-develop appropriate lesson plans for		
				co-teaching.			
	الاعد	of water	80 minutes	Face-to-face/Group activ	ritv:	Face-to-face/Group	
	0363	or water	oo minutes	Tutor provides a short vic	-	activity:	
				allows student teachers t	•	Studentteachers watch	
				brainstorm on the uses of		short video or brainstorm	
				Tutor instructs studentte		on uses of water. They	
				work in groups (in mixed	ability) to	work in mixed ability	
				report on their brainstorr		groups toreport of the	
				observations from the vic	leo clip.	outcome from the video	
				Tutor allows student tead		or brainstorming session	
				plan a lesson on the uses		and prepare lesson	
				suitable for teaching early	-	suitable for teachingearly	
				2 or 3 groupsare allowed		grade learners.(PD Theme	
				make a maximum of 5 mi		8, pg. 40; PD Theme 4, pg.	
				presentation to the class	while other	23-46).	
				groups co-assess.		Student teachers co-	
						assess group	
						presentations and report	
						on them.	

Which cross cutting issues	Equity and SEN: through appropriate gender and equity sensitive group work to protect vulnerable studentteachers, establish an interactive and inclusive classroom atmosphere.
will be	,
addressed or	
developed and	
how	
Lesson	
assessments –	Assessment as learning: student teachers group presentations and co-assessing reports serve as
evaluation of	assessment as learning (20 marks)
learning: of, for	Assessment for Learning: Student teachers co-planned lesson, teaching learning materials and chats to
and as learning	serves as assessment for learning. (20 marks)
within the	
lesson	Could be and a greater grown as a start and a sure when a start at a start at a sure with intermediate and a start at a sure with a sure w
Teaching	Cardboards, poster papers, poster colours, phones, tablets, desktop computers with internet access. Video
Learning Resources	clips on qualities and uses of clean water e.g. https://www.youtube.com/results?search query=qualities+and+uses+of+clean+water
Resources	nttps://www.youtube.com/results?search query=quanties+anu+uses+oi+clean+water
Required Text	NaCCA, MoE. (2019; September). Kindergarten Curriculum (KG1&2) for Preschool. Accra: Ministry of
(core)	Education
	Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). Ghana association
	of science teachers integrated science for senior high schools. Accra: Unimax MacMillan; Handbook for PD
	Coordinators Themes 1 – 10.
Additional	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools.
Reading List	Accra: Unimax Macmillan.
	Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers: chemistry for senior high
	schools. Accra: Unimax MacMillan.
	Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I. Winneba:
	IEDE.
	Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated science
CDD	for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD	Training on preparation of checklist construction and technical report writing.
Requirement	

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 <b>8</b> 9 10 11 12
---------------	---	----------	---	-----------------------------	-----------------------------------

Title of Lesson	Teaching	composition	of soil and	Air		Lesson Duration	3 Hours			
Lesson description	activities t	The lesson introduces student teachers to the concept of the composition of soil and air. It covers activities to embed the pedagogic know how for teaching in an inclusive environment. The lesson involvesco-teaching, co-planning and co-assessing, group discussions, practical activities and presentations on soil and air.								
Previous student teacher knowledge, prior learning (assumed)	Studentte	itudentteachers are familiar with soils in their environments as well as the existence of air.								
Possible barriers to				ceptions and misunde	erstanding about	the composition of	soils and			
learning in the lesson			ys a critical r		1	1				
Lesson Delivery –	Face-to-	Practical	Work-	Seminars	Independent	e-learning	Practicum			
chosen to support	face √	Activity	Based		Study	opportunities √				
students in achieving		٧	Learning							
the outcomes	Face to fo	co/Croup di	√ V	aussians damanstrat	ions and absoru					
Lesson Delivery – main mode of				cussions, demonstrat ents and presentatior						
delivery chosen to				ents and presentation hers engage in co-tead	•	•				
support student		_		esentations and simul	-	Cooning				
teachers in achieving	c icarriiig	, оррогини	ies. video pre	escritations and simal	acions					
the learning										
outcomes.										
Purpose for the	This lesso	This lesson is intended to further help studentteachers embed pedagogic content knowledge on								
lesson, what you		teaching and to acquire the requisite practical skills for teaching the composition of soil and air.								
want the students to					-					
achieve, serves as	NTS	NTS								
basis for the learning	1a) Critica	illy and colle	ctively reflec	ts to improve teachin	g and learning.					
outcomes. An	1c) Demo	nstrates effe	ctive growin	g leadership qualities	in the classroom	n and wider school.	Community			
expanded version of	of Practice	е								
the description.				pedagogical knowled		gical				
Write in full		_		and grade they teach						
aspects of the				elop and learn in dive	rse contexts and	applies				
NTS addressed		or her teach	•			C + 1				
				hallenging lessons, sh	owing a clear gr	asp of the				
			their teaching	-	ractico					
				esearch to improve pang with small and larg						
Learning	Learning (		ar ariu icariiii	Learning Indicators		Identify which cro	ss- cutting			
Outcome for the	Learning	outcomes		Learning mulcators		issues, core and tr	_			
lesson, picked						skills, inclusivity.				
and developed						addressing diversi	• •			
from the course						these be addresse	-			
specification						developed				
Learning	• Demo	onstrate pra	ctically	Developed mode	el lessons	Through group dis	cussions			
indicators for		gogic conter		plans covering p		and sharing of idea				
each learning	know	ledge and sl	tills for	content knowled	lge of the	studentteachers d	evelop the			
outcome		osition of so		concept of soil a	nd its	skills of communic				
	• Stude	entteachers	to show	composition.		collaboration and				
		etence in pr	•	Student teachers		respect while appr	_			
		mples ofsoil		presentation of t		individual differen				
			resentation	samples of soils		abilities. They also	•			
	and a	s teaching n	naterial.	components clea	arly indicated.	skills in handling d	evices,			

		qual iden critic inclu grou mod com	nonstrate leadership ities, team workand tify the core values of cal thinking, equity, isivity, collaboration in p work and designing lels and for teaching position of soil and air y grade learners.	teaching and learning environment.	develop critical thinking, honesty, accuracy and responsibility through active participation in group work/discussion.
Topic/Title	Sub	Горіс	Time or Stage	Teaching and learning to achieve learn	
				delivery mode selected. Teacher led, c	ollaborative group work or
				independent study	
				Teacher Activity	Student Activity
How to teach	Reca	•	20 minutes	Face-to-face:	Face-to-face:
composition of		on 7 and		Tutor invites individual	Student teachers discuss and
soil and Air		duction sson 8		studentteachers to recap	reflect on lessons 7listing any
	tores	55011 8		presentations from lesson 7, listing any areas of difficulty.	areas of difficulty as well establishing any linkages with
				Tutor leads discussion to link lesson 7	the day's topic for discussion
				to lesson 8 as well as resolve any	with tutor.
				further misconceptions and	with tator.
				difficulties.	
	Com	position	80 minutes	Face-to-face/Group work:	Face-to-face/Group work:
	of so			Tutor allows student teachers to work	Student teachers work in
				in teams to collect at least two	teams to prepare samples of
				different samples of soil from their	soil collected from their
				environment, identify their content	environment, identify the
				and clearly label them.	content and clearly label them
					on the containers. They then
				Tutor guides student teachers	prepare sample lesson plans
				develop appropriate lesson plans for	appropriate for teaching the
	Hees	of Air	00 minutos	teaching composition of soil.	subject matter.
	Uses	of Air	80 minutes	Face-to-face/Group activity: Tutor provides a short video clip or	Face-to-face/Group activity: Studentteachers watch short
				allows student teachers to identify	video or discuss the uses of
				the uses of air, example	air. They work in mixed ability
				https://www.youtube.com/watch?v=	groups toreport on their
				Qpz LXWtWFE	observations from the video
					or discussion session and
				Tutor instructs studentteachers to	prepare lesson suitable for
				work in groups (in mixed ability) to	teaching early grade
				produce a chat and report on their	learners.(PD Theme 8, pg. 40;
				observations from the video clip (a	PD Theme 4, pg. 23-46).
				maximum of 5 minutes presentation	Student teachers co-assess or
				should be allowed for each group)	critique group presentations
				other groups may co-assess and	and report on them.
				critique.	
				Tutor allows studout too share to a	
				Tutor allows student teachers to co-	
				plan a lesson on the uses of air suitable for teaching early grade.	
				Saltable for teaching early grade.	

Which cross cutting issues will be addressed or developed and	Equity and SEN: through appropriate gender and equity sensitive group work to protect vulnerable studentteachers, establish an interactive and inclusive classroom atmosphere.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	<ul> <li>Assessment as learning: student teachers group presentations and co-assessing reports serve as assessment as learning (20 marks)</li> <li>Assessment for Learning: Student teachers lesson plans, teaching learning materials and chats to serves as assessment for learning. (20 marks)</li> </ul>
Teaching Learning Resources	Cardboards, poster papers, poster colours, phones, tablets, desktop computers with internet access. Video clips on the uses of air e.g. <a href="https://www.youtube.com/watch?v=Qpz_LXWtWFE">https://www.youtube.com/watch?v=Qpz_LXWtWFE</a>
Required Text (core)	NaCCA, MoE. (2019; September). <i>Kindergarten Curriculum (KG1&amp;2) for Preschool</i> . Accra: Ministry of Education Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). <i>Ghana association of science teachers integrated science for senior high schools</i> . Accra: Unimax MacMillan; Handbook for PD Coordinators Themes 1 – 10.
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high schools.  Accra: Unimax Macmillan.  Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of science teachers: chemistry for senior high schools.  Accra: Unimax MacMillan.  Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I. Winneba: IEDE.  Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). SWL integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.
CPD Requirement	Training on preparation of checklist construction and technical report writing.

Year of B.Ed. 2	2 Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 <b>9</b> 10 11 12
-----------------	------------	---	-----------------------------	-----------------------------------

Its uses and how it can be taught to early grade learners through activities planned and designed by the students themselves.  Student-teacher shave studied mixtures from introduction to science at year 1 and use air around them.  Student-teachers have studied mixtures from introduction to science at year 1 and use air around them.  Student-teachers have studied mixtures from introduction to science at year 1 and use air around them.  Student-teacher might still have some unscientific ideas about the wind and air learning in the lesson Lesson Delivery – face-to-face   Practical   Work   Seminars   Independent   Study   opportunities   Practicum opportunities	Title of Lesson	AIR				Lesson Du	ration	3 Hours	5		
them.    Student-teacher might still have some unscientific ideas about the wind and air learning in the lesson Delivery—chosen to support students in achieving the outcomes   Lesson Delivery—main mode of delivery-chosen to support student teachers in achieving the learning outcomes.    Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.   Write in full aspects of the NTS addressed   Learning outcomes	Lesson description	its uses and ho	ts uses and how it can be taught to early grade learners through activities planned and designed by								
Possible barriers to learning in the lesson Lesson Delivery—chosen to support students in achieving the outcomes Lesson Delivery—main mode of delivery chosen to support student teachers in achieving the learning of delivery chosen to support student teachers in achieving the learning outcomes.  - Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.  - Purpose for the learning outcomes.  - To deepen student-teacher understanding of the student teacher on the composition of air and lits uses.  - Test various skills and cross — cutting issue students to achieve, serves as basis for the learning outcomes.  - To develop the knowledge and skills to teach the topic NTS:  - To develop the knowledge and skills to teach the topic NTS:  - To develop the knowledge of the official school curriculum, including dearning outcomes  - Learning outcomes  - Learning indicators for Teaching and learning outcomes  - Describe the Composition of Air and state its uses  - Describe the Composition of Air and state its uses  - Describe the Composition of Air and state its uses  - Describe the Composition of Air and state its uses  - Describe the Composition of Air and addressing diversity. How will these be addressed of the composition of air and addressing diversity. How will these be addressed of the composition of air and addressing diversity. How will these be addressed of the composition of air and addressing diversity. How will these be addressed of the composition of air and addressing diversity. How will these be addressed or the composition of air and addressing diversity. How will these be addressed or the composition of air and addressing diversity. How will these be addressed or the composition of air and addressing diversity. How will these be addressed or the composition of air and addressing diversity. How will these be addressed or the composition of air and addressing diversity. How will these be addressed or the composition of air and air thin and addressing diversity	Previous student	Student-teach	ers have st	udied mixtures	from introduction	n to science at y	ear 1 and	l use air	around		
Possible barriers to	teacher knowledge,	them.	chem.								
Possible barriers to learning in the lesson   Lesson Delivery— chosen to support students in achieving the outcomes   Face-to-face: Discussion, multimedia presentations, group presentations main mode of delivery chosen to support student teachers in achieving the learning outcomes.   Face-to-face: Discussion, multimedia presentations, group presentations main mode of delivery chosen to support student teachers in achieving the learning outcomes.   Face-to-face: Discussion, multimedia presentations, group presentations main mode of delivery chosen to support student teachers in achieving the learning outcomes.   Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.   Purpose for the learning outcomes.   Purpose for the learning outcomes.   Purpose for the description.   Purpose for the learning outcomes.   Purpose for the learning out	prior learning										
Lesson Delivery - main mode of delivery chosen to support students in achieving the learning outcomes.   Face-to-face: Discussion, multimedia presentations, group presentations independent Study: Nature walk and inquiry based learning to plan and design activities for teaching early grade learners air e-learning outcomes.   Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.   Build the necessary support going forward on SEN and Gender issue	(assumed)										
Face-to-face   Practical   Mork-   Based   Seminars   Independent   StudyV   Department   Practicum	Possible barriers to	Student-teach	er might st	ill have some u	nscientific ideas a	bout the wind a	and air				
chosen to support students in achieving the outcomes  Lesson Delivery— main mode of delivery chosen to support student Study. Nature walk and inquiry based learning to plan and design activities for teaching edlivery chosen to support student teachers in achieving the learning outcomes.  Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.  Purpose for the learning outcomes.  To deepen student-teacher understanding of the student teacher on the composition and uses  To develop the knowledge and skills to teach the topic  Test various skills and cross — cutting issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  Test various skills and cross—cutting issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  Test various skills and cross—cutting issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge of the official school curriculum, including of the students teacher identity and acts as a good role model for students  Debas comprehensive knowledge of the official school curriculum, including of the students  Learning Outcomes  Learning Outcomes  Learning Indicators  Develops kills notes taking, inclusivity. Equity and addressing diversity. How will these be addressed or developed in and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition of acre to individual needs (SEN)	learning in the lesson										
Lesron Delivery — main mode of delivery chosen to support student teachers in achieving the learning outcomes.  Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.  Purpose for the learning outcomes.  To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  Build the necessary support going forward on SEN and Gender issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  NTS:  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  NTS:  16-Develops a positive teacher identity and acts as a good role model for students 2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Outcomes  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Student Teacher to present concept maps of the composition of air and its uses  Develops kills not care to individual needs (SEN)	Lesson Delivery –	Face-to-face	Practical	Work-	Seminars	Independent	e-learni	ng	Practicum		
Leson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.  Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the BNTS addressed  Learning Outcomes  Learning indicators for Teaching and learning outcome  Develops the Composition of Air and state its uses  Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including directions transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or the composition of air and its uses.  Develops kills notes taking, and report writing  Develops social collaboration and altention and care to individual needs (SEN)	chosen to support	٧	Activity	Based		Study <b>V</b>	opportu	ınities			
Face-to-face: Discussion, multimedia presentations, group presentations   Independent Study:Nature walk and inquiry based learning to plan and design activities for teaching early grade learners air e-learning outcomes.	students in achieving			Learning			٧				
Independent Study:Nature walk and inquiry based learning to plan and design activities for teaching early grade learners air e-learning opportunities:Videos and online resources on air composition and uses  Purpose for the learning outcomes.  Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning and learning outcome  Learning outcomes  Learning outcomes  Learning Outcomes of the description of the lesson, picked and developed from the course specification  Learning outcomes  Learning outcomes  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or the composition of air and its uses  Develop skills notes taking, and report writing  Student Teacher in groups present Reports for the composition and uses  Independent Study:Native search is early grade learning opportunities:Videos and online resources on air composition and uses  To develop the student teacher on the composition of air and its uses  To develop the knowledge and skills to teach the topic  NTS:  1a-Critically and collectively reflects to improve teaching and learning.  1-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including  learning outcomes  Learning Indicators  Learning Indicators  Learning Indicators  Student Teacher in groups present Reports for the port of individual needs (SEN)	the outcomes										
delivery chosen to support student teachers in achieving the learning outcomes.  Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning outcomes.  Purpose for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcomes  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its uses on air and its uses on air and its uses on air and online resources on air composition and uses  To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning.  1b-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including of the student teacher on the composition of air and its uses.  Learning Indicators  Develops is inclusivity. Equity and addressing diversity. How will these be addressed or developed  1	Lesson Delivery –	Face-to-face:	Discussion,	multimedia pr	esentations, group	presentations					
e-learning opportunities: Videos and online resources on air composition and uses  e-learning outcomes.  • Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.  • To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  • Build the necessary support going forward on SEN and Gender issue achieve, serves as basis for the learning outcomes. An expanded version of the description.  • Write in full aspects of the NTS addressed  • Learning Outcome for the lesson, picked and developed from the course specification  • Learning Outcomes  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Describe the Composition of Air and state its uses  • Student Teacher to present concept maps of the composition of air and its uses  • Develops kills notes taking, and report writing  Develops scial collaboration and attention and care to individual needs (SEN)	main mode of	Independent S	Study:Natu	re walk and ind	quiry based learnii	ng to plan and d	lesign acti	ivities fo	or teaching		
teachers in achieving the learning outcomes.  Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes.  • Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.  • Write in full aspects of the NTS addressed  • Learning Outcome for the lesson, picked and developed from the course specification  • Learning outcome  • Design and plan out activities that can be used to teach early grade learners on air and its uses  • Design and plan out activities for early grade learners on air and its composition  • Student Teacher on the composition of air and its uses  • To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  • Test various skills and cross – cutting issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and Gender issue  • Build the necessary support going forward on SEN and G	delivery chosen to	early grade lea	arners air								
<ul> <li>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the Instrument of the lesson, picked and developed from the course specification</li> <li>Learning indicators for Teaching and learning outcome</li> <li>Design and plan out activities that can be used to teach early grade learners on air and its uses</li> <li>To deepen student-teacher understanding of the student teacher on the composition of air and its uses.</li> <li>Test various skills and cross – cutting issue</li> <li>Build the necessary support going forward on SEN and Gender issue</li> <li>To develop the knowledge and skills to teach the topic</li> <li>NTS:         <ul> <li>1a - Critically and collectively reflects to improve teaching and learning.</li> <li>1f-Develops a positive teacher identity and acts as a good role model for students</li> <li>2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes</li> </ul> </li> <li>Learning Indicators         <ul> <li>Identify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed</li> <li>Describe the Composition of Air and its uses</li> <li>Design and plan out activities that can be used to teach early grade learners on air and its uses</li> <li>Develop skills notes taking, and report writing</li> <li>Developing Social collaboration and attention and care to individual needs (SEN)</li> </ul> </li> </ul>	support student	e-learning opp	ortunities	Videos and on	line resources on	air composition	and uses				
Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Design and plan out activities that can be used to teach early grade learners on air and its composition  Design and plan out activities that can be used to teach early grade learners on air and its composition  To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  To deepen student-teacher understanding of the student teacher on the composition of air and its uses.  Test various skills and cross – cutting issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning.  1f-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Indicators  Learning Indicators  Learning Indicators  Learning Indicators  Learning Indicators  Identify which cross – cutting issue  Learning Indicators  Learning Indicators  Identify which cross – cutting issue  Student Feacher to present concept maps of the composition of air and its uses  Develops skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	teachers in achieving										
Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcomes  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  Purpose for the lesson, picked and developed from the course specification  Design and plan out activities that can be used to teach early grade learners on air and its composition  Purpose for the lesson, picked and developed from the course specification  Design and plan out activities that can be used to teach early grade learners on air and its composition  Developing Social collaboration and activities for early grade  activities for early grade  activities for early grade  learners on air and its composition of air and care to individual needs (SEN)	the learning										
its uses.  Test various skills and cross – cutting issue  Build the necessary support going forward on SEN and Gender issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning.  1f-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning  Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Developing Social can be used to teach early grade learners on air and its composition  Developing Social attention and care to individual needs (SEN)	outcomes.										
its uses.  Test various skills and cross – cutting issue  Build the necessary support going forward on SEN and Gender issue  Build the necessary support going forward on SEN and Gender issue  To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning.  1f-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning  Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Developing Social can be used to teach early grade learners on air and its composition  Developing Social attention and care to individual needs (SEN)											
<ul> <li>want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the INTS addressed</li> <li>Learning Outcome for the lesson, picked and developed from the course specification.</li> <li>Learning indicators for Teaching and learning outcome</li> <li>Describe the Composition of Air and state its uses</li> <li>Design and plan out activities that composition of air and its composition.</li> <li>Developing skills and cross – cutting issue</li> <li>Build the necessary support going forward on SEN and Gender issue</li> <li>To develop the knowledge and skills to teach the topic</li> <li>NTS:         <ul> <li>1a- Critically and collectively reflects to improve teaching and learning.</li> <li>1f-Develops a positive teacher identity and acts as a good role model for students</li> <li>2b-Has comprehensive knowledge of the official school curriculum, including</li> <li>Learning Indicators</li> <li>Identify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed</li> </ul> </li> <li>Describe the Composition of Air and its uses</li> <li>Develops kills notes taking, and report writing</li> <li>Develop skills notes taking, and report writing</li> <li>Developing Social collaboration and attention individual needs (SEN)</li> </ul>	<ul> <li>Purpose for the</li> </ul>	To deeper	n student-t	eacher underst	anding of the stud	dent teacher on	the comp	osition	of air and		
Build the necessary support going forward on SEN and Gender issue     achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Build the necessary support going forward on SEN and Gender issue To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning.  1f-Develops a positive teacher identity and acts as a good role model for students 2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Indicators	lesson, what you	its uses.									
Build the necessary support going forward on SEN and Gender issue     achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Build the necessary support going forward on SEN and Gender issue To develop the knowledge and skills to teach the topic  NTS:  1a- Critically and collectively reflects to improve teaching and learning.  1f-Develops a positive teacher identity and acts as a good role model for students 2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Indicators	want the	Test vario	us skills and	d cross – cuttin	g issue						
achieve, serves as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  To develop the knowledge and skills to teach the topic NTS:  1a- Critically and collectively reflects to improve teaching and learning. 1f-Develops a positive teacher identity and acts as a good role model for students 2b-Has comprehensive knowledge of the official school curriculum, including learning Indicators  Learning Indicators  Learning Indicators  Identify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	students to				-	d Gender issue					
as basis for the learning outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air and state its uses  Describe the Composition of air and its composition of air and its uses  NTS:  1a - Critically and collectively reflects to improve teaching and learning.  1f - Develops a positive teacher identity and acts as a good role model for students  2b - Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Indicators  Student-teacher to present concept maps of the composition of air and its uses  Develops skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	achieve, serves										
outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air and be used to teach early grade learners on air and its composition  1f-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Indicators  Udentify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	as basis for the										
outcomes. An expanded version of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air and be used to teach early grade learners on air and its composition  If-Develops a positive teacher identity and acts as a good role model for students  2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Learning Indicators  Identify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	learning	1a- Critically a	nd collectiv	ely reflects to	improve teaching	and learning.					
2b-Has comprehensive knowledge of the official school curriculum, including learning outcomes  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  2b-Has comprehensive knowledge of the official school curriculum, including learning inclusivity. Inclusivity with cross — cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	outcomes. An						students				
of the description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  learning outcomes  Learning Indicators cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	expanded version										
description.  Write in full aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Describe the Composition of Air can be used to teach early grade learners on air and its composition  Student-teacher to present concept maps of the composition of air and its uses  Student Teacher in groups present Reports for their portfolio on teaching activities for early grade learners or air and its composition  Write in full aspects of the NTS addressed  Learning Indicators  Identify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	of the	-		Ü		,	J				
aspects of the NTS addressed  Learning Outcome for the lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  Learning Indicators  Learning Indicators  Identify which cross – cutting Issues, core and transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  Developed  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	description.	0									
Learning     Outcome for the lesson, picked and developed from the course specification     Learning indicators for Teaching and learning outcome      Design and plan out activities that can be used to teach early grade learners on air and its composition      Learning Indicators      Learning Indicators     Learning Indicators      Student-teacher to     present concept maps of the composition of air and its uses      Develop skills notes taking, and report writing      Developing Social collaboration and attention and care to individual needs (SEN)	Write in full										
<ul> <li>Learning         Outcome for the         lesson, picked         and developed         from the course         specification         <ul> <li>Learning indicators for</li></ul></li></ul>	aspects of the										
Outcome for the lesson, picked and developed from the course specification  • Learning indicators for Teaching and learning outcome  • Design and plan out activities that can be used to teach early grade learners on air and its composition  • Dutcome for the lesson, picked and developed transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  • Student-teacher to present concept maps of the composition of air and its uses  • Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)	NTS addressed										
Outcome for the lesson, picked and developed from the course specification  • Learning indicators for Teaching and learning outcome  • Design and plan out activities that can be used to teach early grade learners on air and its composition  • Dutcome for the lesson, picked and developed transferable skills, inclusivity. Equity and addressing diversity. How will these be addressed or developed  • Student-teacher to present concept maps of the composition of air and its uses  • Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)	• Learning	Learning Outo	omes		Learning Indicat	tors	Identif	y which	cross –		
lesson, picked and developed from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  Learning indicators for Teaching and learning outcome  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)											
from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  Treaching and learning outcome  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	lesson, picked						_				
from the course specification  Learning indicators for Teaching and learning outcome  Describe the Composition of Air and state its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  Treaching and learning outcome  Develop skills notes taking, and report writing  Developing Social collaboration and attention and care to individual needs (SEN)	and developed						inclusiv	vity. Equ	uity and		
specification  • Learning indicators for Teaching and learning outcome  • Describe the Composition of Air and state its uses  • Design and plan out activities that can be used to teach early grade learners on air and its composition  • Describe the Composition of Air and present concept maps of the composition of air and its uses  • Design and plan out activities that can be used to teach early grade learners on air and its composition  • Student-teacher to present concept maps of the composition of air and its uses  • Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)											
<ul> <li>Learning indicators for Teaching and learning outcome</li> <li>Describe the Composition of Air and state its uses</li> <li>Design and plan out activities that can be used to teach early grade learners on air and its composition</li> <li>Student-teacher to present concept maps of the composition of air and its uses</li> <li>Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)</li> </ul>	specification							_	-		
<ul> <li>indicators for Teaching and learning outcome</li> <li>Describe the Composition of Air and state its uses</li> <li>Design and plan out activities that can be used to teach early grade learners on air and its composition</li> <li>Student-teacher to present concept maps of the composition of air and its uses</li> <li>Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)</li> </ul>	-						develo	ped			
Teaching and learning outcome  and state its uses  present concept maps of the composition of air and its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  present concept maps of the composition of air and its uses  Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)	•	Describe 1	the Compos	sition of Air	Student-tea	cher to	Develo	p skills r	notes taking,		
the composition of air and its uses  Design and plan out activities that can be used to teach early grade learners on air and its composition  the composition of air and its uses  Student Teacher in groups present Reports for their portfolio on teaching activities for early grade individual needs (SEN)			-		present con	cept maps of		•	-		
<ul> <li>Design and plan out activities that can be used to teach early grade learners on air and its composition</li> <li>its uses</li> <li>Student Teacher in groups present Reports for their portfolio on teaching attention and attention and care to individual needs (SEN)</li> </ul>	_						]		-		
<ul> <li>Design and plan out activities that can be used to teach early grade learners on air and its composition</li> <li>Student Teacher in groups present Reports for their portfolio on teaching activities for early grade</li> </ul>	0										
can be used to teach early grade learners on air and its composition present Reports for their portfolio on teaching activities for early grade individual needs (SEN)		Design an	d plan out	activities that		cher in groups	Develo	ping So	cial		
learners on air and its portfolio on teaching attention and care to composition activities for early grade individual needs (SEN)		_									
composition activities for early grade individual needs (SEN)											
				-							
		Compositi			teaching	. carry brauc					

Content of lesson picked and	Sub Topic	Time or	Teaching and learning to ach		
developed from the course		Stage	depending on delivery mode		
specification			collaborative group work or		
Topic Title			Teacher Activity	Student Activity	
AIR	Composition of Air and Uses of Air (K1.6.8)	20 minutes	Face-to-Face: Lead student teachers to discuss the previous lesson to situate it into the new concept. Allow student teachers to explain how strong winds and whirl winds come about.	Face-to-face: general class discussion on previous lesson and winds.	
		60 minutes	Independent Study/seminar:Tutor provides clear instructions to student teachers to identify direction of air, uses of air and materials that they can use to design activities, outdoor, for early grade learners	Independent Study/seminar: Student teachers in diverse groups undertake nature walk, identify air direction, and collect materials (include paper, plastics etc) that can be used to designlearning activities for early grade learning.	
		100 minutes	Face-to-Face/Seminar: Guide Student teachers to co plan, design and co teach activities for early grade learning on Air and Composition of Air. (activities may include Flying the kite, Blowing the wind, Using the Balloons etc.) Here, again guide student teachers to peer review their own activities.	Face-to-Face/Seminar: Student teacher co plan and design activities in class in diverse groups to co teach early grade learners	
Which cross cutting issues will be			I rules to protect vulnerable stu		
addressed or developed and how			e classroom atmosphere. Throu		
Lesson assessments – evaluation of learning: of, for and as learning within the lesson			I Strengths will be identified an o to assess for component 1 an		
Teaching Learning Resources	The course manual, Flip	Charts, Pens, P	encils, 'A' 4 sheets, markers, Sr	mart phones	
Required Text (core)	NaCCA, MoE. (2019; September). <i>Kindergarten Curriculum (KG1&amp;2) for Preschool</i> . Accra: Ministry of Education Abbey, T. K., Alhassan, B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). <i>Ghana association of science teachers integrated science for senior high schools</i> . Accra: Unimax MacMillan. Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V.&Obeng-Ofori, D. (2011). <i>SWL integrated science for senior high schools</i> : <i>Students book</i> . Accra, Ghana; Sam-Woode Ltd				
Additional Reading List		&Mensah, S. K. (	(2016).Science for primary scho		
CPD Requirement			ing, skills development on cons	struction of T-charts and	
	collage making				

Year of B.Ed. 2	Semester 1	Place of lesson in semester	123456789 <b>10</b> 1112
-----------------	------------	-----------------------------	--------------------------

Title of Lesson		rement of tim		Less	on Duration		3 hours				
		ature and vol									
esson description		In this lesson, the student teacher is guided through activities necessary to facilitate the teaching and									
		earning of the concept of measurement of time, mass, temperature and volume-everyday quantities by									
		early grade learners. While identifying the appropriate concepts for early grade learning, the student									
		eachers will be guided to develop the appropriate assessment tools to facilitate early grade learning.									
Previous student	Studen	t teachers ha	ve been taken	through the in	troduction to	the in	tegrated science (	course SCE 121			
eacher knowledge,											
orior learning											
assumed) Possible barriers to	Chudaa	* *	- +    -  -	:							
	Studen	it teachers m	ay lack the abii	ity to relate co	ncepts to eve	eryday	use/application.				
earning in the											
esson	Голо	Dunatical	Mode	Causinan	la denendan			Dusationes			
esson Delivery –	Face-	Practical	Work-	Seminar	Independer		e-learning	Practicum			
thosen to support	to-	Activity	Based	٧	Study		opportunities				
tudents in	face √		Learning		٧		V				
chieving the	V										
outcomes	Fa.:- /	Face Dies				- /: ur :: '	and ability	-)			
esson Delivery –							xed ability groups	•			
nain mode of			iments of mea	surement and	Si units of the	e quan	tities time, mass,	temperature and			
lelivery chosen to	volume		ation and their an NAC	000 I DUET		•		anti-data a tassa buta			
upport student		•	ties: Using MC	OCS and PHET	solutions to v	view so	ome early grade a	ctivities involving			
eachers in	measur										
chieving the		ndent Study:	inquiry based i	earning to des	ign early grad	ie piay	activities for teac	ning at early			
earning outcomes.	grade										
		<ul> <li>Seminar: Presentations of activities for peer review.</li> <li>Embedding in the student teacher to the essential attitudes and values of professional science</li> </ul>									
Purpose for the							values of professi	onal science			
lesson, what			honesty, care	fulness, accura	acy and many	more.					
you want the		roduce child s									
students to							loping themes.	_			
achieve, serves		-					r educational evic				
as basis for the		quire skills to	evaluate cours	sework, learnir	ng progress ar	nd acad	demic achievemer	nt.			
learning	NTS:										
outcomes. An			ectively reflect								
expanded				pedagogical k	nowledge and	d peda	gogical content kr	nowledge for the			
version of the		and grade the									
description.			-scale action re								
Write in full			y of instruction	ıaı strategies tl	nat encourage	es stud	ent participation	and critical			
aspects of the	thinking						lattica anna l	(A)1			
NTS addressed					or mixed abili		Itilingual and mul				
Learning	Learnin	•	Learning Indi	cators			ify which cross-cu	•			
Outcome for	Outcon	nes					ransferable skills,				
the lesson,	_			1 1 1 1 1 1 1 1			y and addressing				
picked and		strate the		a checklist to id	•		ding checklist of c				
developed		eristics of		f patience, crit	ical		oration and mutu				
from the	an inclu		-	tolerance,			ciating individual				
course		r (values &		odation and fo			es, critical thinkin				
specification		es) in class		ristic of an ear	ly grade	•	nsibility through				
Learning	engage		teacher.			partic	ipation in group o	discussion.			
indicators for	(NTS, 2	e, Pg. 13)		eflective repo							
each learning				ristics of an in							
outcome			teacher a	as observed in	class						
			engagen	nents.							

Topic/Title	Sub Topic	Time or Stage	Teaching and learning to achieve lead on delivery mode selected. Teacher	
			or independent study	,
			Teacher Activity	Student Activity
Measurement of time, mass, temperature and volume	Review of lesson 9	30 minutes	Face-to-face:Tutor allows student teachers to work in mixed ability groups to discuss previous lesson and assists them with areas that need further attention	Face-to-face:Student teachers discuss previous lesson and list areas that need further attention for discussion with tutor.
	Measuring time, mass, temperature and Volume	60 minutes	Face-to face:Tutor leads discussions and demonstration on measuring the quantities time, mass, temperature and volume – listing dimension: Time-t, massm, Temperature-T and Volume-V <sup>3</sup> NB: emphasize fundamental and derived; Units: t – sec, m-g/Kg, T-K/°C and V-m <sup>3</sup> and Instruments: t – Stop watch/clock, m – electronic balance, beam balance (not spring balance), T-Thermometer (identify different kinds), V – Volumetric flask (include others) PD Theme 4, pg 23-30	Face-to-Face:Student teachers engage in mixed group discussions, and demonstration of measuring the quantities time, mass, temperature and volume as facilitated by tutor.  PD Theme 4, 35-46
	Designing activities, co- planning and co- teaching of Measurement of time, mass, temperature and volume	90 minutes	Face-to-Face/e-learning oppotunities/Independent Study/Seminar: Leave students in mixed ability groups, use https://www.pinterest.com/pin/4 44308319481682228/?d=t&mt https://sciencing.com/activities- teaching-hot-cold-temperature- 8115744.htmlhttp://www.texaste acherroundup.com/p/third- grade.html or other video/online sources to guide student teachers to identify materials and design their own activities and describe how they can be used to teach early grade learners measurement of time, mass, temperature and volume	Face-to-Face/e-learning oppotunities/Independent Study/Seminar: Student teachers working in groups, use online examples to design activities and use them to co-teach in peer teaching exercise. They then peer review each other.
Which cross cutting issues will be addressed or developed and how	By practicing how to activities into worka	develop skills i ble themes	ishment of an interactive and inclusive n reviewing, differentiating and catego	orizing early grade science
Lesson assessments - evaluation of learning: of, for and as learning within the lesson	Activities design	ned for co-teach	ning are placed in portfolio to be asses	sed under components 1 ad 2
Teaching Learning Resources			papers. Smart phones, flip chart stand	
Required Text (core)	Education Handbook for PD Co	ordinators The		c scnool. Accra: Ministry of
CPD Requirement	<ul> <li>Practicing how</li> </ul>	-	tional development. grade activities for teaching measure compiling data	ment

Year of B.Ed. 2	Semester	1	Place of lesson in semester	12345678910 <b>11</b> 12
-----------------	----------	---	-----------------------------	--------------------------

Title of Lesson	The student teacher as a resource in diversity					Lesson Duration	3 Hours
Lesson description EGE Science 1	In this lesson, the student teacher further discusses the nuances embedded in the Early Grade Science Curriculum and how it could be translated practically. The importance of understanding the diversity in the early grade classroom and how this diversity may discriminate against science learning at the early grade learning needs to be emphasised. This will enable student teachers to conceptualise their own roles as teachers to be able to deal with diversity in the early grade classroom and manage diverse learners for effective science learning, and a more holistic, inclusive, adaptable and safe learning environments for the early grade learner.						
Previous student teacher		teachers ha	ive already k	een introduced to	the science cu	rriculum studies c	ourse, EGE
knowledge, prior learning	211						
Possible barriers to learning	Student	-teachers n	nay lack kno	wledge about the	features of earl	y grade science.	
in the lesson Lesson Delivery – chosen to	Face-	Practical	Work-		Independent	e-learning	Practicum
support students in	to-	Activity	Based	Seminar √	StudyV	opportunities	Fracticum
achieving the outcomes	face v	, totality	Learning		ocaa, i	Оррогашист	
3400			8				
Purpose for the lesson, what you want the learning outcomes      Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.      Write in full aspects of the NTS addressed	Face-to-Face: Discussion, showerthoughts, demonstrations and student teachers make presentations (in mixed ability groups) on what they consider as issues of diversity Seminar: Presentation of reflective reports on how to identify and manage diversity in early grade classroom Independent Study: Inquiry into diversity scenarios in early grade classrooms e-learning opportunities:MOOCS, videos and simulations of Managing diversity in early grade classrooms.  • Accentuate the student teacher to the essential attitudes and values of professional science teaching such as honesty, carefulness, accuracy and many more.  • Emphasise child study styles taking into consideration cultural and gender issues  • Appreciation of gender responsive and child-adaptive teaching strategies  • Continue to peruse the new Early grade science curriculum and how to interpret the requirements on diversity  • Acquire the skills to compile/document academic work and other educational evidence for portfolios  • Acquire skills to evaluate coursework, learning progress and academic achievement  NTS:  1a: Critically and collectively reflects to improve teaching and learning  2c: Has secure content knowledge, pedagogical knowledge and pedagogical content knowledge for the school and grade they teach in.  3b: Carries out small-scale action research to improve practice.  3e: Employs a variety of instructional strategies that encourages student participation and critical thinking.  3g: Employs instructional strategies appropriate for mixed ability, multilingual and multi-age						
Learning Outcome for the lesson, picked and developed from the course specification	classes)	Learning Outcomes  Learning Indicators  Identify which cross-cutting in the second strains of the second strai					ansferable equity and
Learning indicators for each learning outcome	characte inclusive teacher	trate the eristics of ar e science (values & s) in class	the gra	ovide a checklist to e issues of diversit ade classroom ake a reflective pr o the characteristic	o identify y in early esentation	addressing diversi Providing checklist communication, co and mutual respec appreciating youn individual differen	of ollaboration t while g learners'

	engagements. (NTS,	inclusive	science teacher as	abilitie	s, critical thinking and	
	2e, Pg. 13)	observed engagem			sibility through careful pation in group	
Topic/Title	Sub Topic	Time or Stage	Teaching and learning to achieve learning out depending on delivery mode selected. Teache collaborative group work or independent study		eve learning outcomes:	
			Teacher Activity	01 K 01 III	Student Activity	
The student teacher as a	Modelling Diversity	40 minutes	Face-to face: Tutor		Face-to-face:	
resource in diversity	scenarios in Early Grade classroom		asking student teachers to recall some of the themes/concepts they studied in Lesson 10  Face-to-face/Independent Study:Tutor leads a showerthought discussion on diversity scenarios in early grade classroom with student teachers for 15mis and allows Students teachers to reflect on some themes from www.kidsmatter@edu.au or any identified diversity themes online for 30 minutes Student teachers are then put in mixed ability groups to Model, role play or design any activity that can identify and manage diversity situations and turn them to advantages for early grade science learning		Student teachers reflect, recall and discuss science concepts learned in Lesson 10	
		15 minutes  30 minutes  45 minutes			Face-to-face/Group activity:Student teachers engage in modelling, role playing and rhyming and then discuss with tutor processes for the actualisation of SEN-responsive scientific skills  Face-to-face/Group activity: Student teachers in groups of mixed abilities peruse the EGE science syllabus and translate it through presentations and modelling PD Theme 4, 35-46	
			Face-to-face/Seminar allows student teache remain in their groups mixed abilities, cross s their activities co-asse PD Theme 4, pg 23-30	rs to of hare ssing	Face-to- face/Seminar: student teachers to remain in their groups of mixed abilities, cross share their activities co- assessing	
Which cross cutting issues will be addressed or developed and how	Equity and SEN: Through the establishment of an interactive, inclusive and demonstrative classroom atmosphere.					
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	Peer Reviewed/co-assessed activities and reports are put in student portfolio to be assessed for Component 2					
Teaching Learning Resources	The EGE Science syllal	bus, pens and pap	ers. Smart phones			
Required Text (core)	NaCCA, MoE. (2019; September). <i>Kindergarten Curriculum (KG1&amp;2) for Preschool</i> . Accra: Ministry of Education Handbook for PD Coordinators Themes 1- 10					
CPD Requirement	<ul> <li>Learning perseverance and accuracy in compiling data</li> <li>Developing the checklist to identify manage situations of diversity</li> </ul>					

Year of B.Ed. 2	Semester 1	Place of lesson in semester	1234567891011 <b>12</b>
-----------------	------------	-----------------------------	-------------------------

Title of Lesson	Course P	Review II with	STS seminar		Lesson	Duration	3 hours	
Lesson description	This lesson is a review and audit of the lessons for the second			e second half of	d half of the semester as well a			
	review a	review and discussion of lessons learned, reflection on the supported teaching in schools (STS)						
	and peer	r review of tea	ching and lea	arning portfolios.				
Previous student teacher	Lessons	Lessons learnt from lesson 7 through lesson 11 in all learning approaches and						
knowledge, prior learning	observat	observations/experiences during STS.						
(assumed)								
Possible barriers to	Miscond	ception to som	ie concepts r	ot adequately dea	alt with. Lessons	not appropriatel	У	
learning in the lesson	understo	ood by student	t teachers.					
Lesson Delivery – chosen	Face-	Practical	Work-Base	d Seminars	Independen	e-learning	Practicum	
to support students in	to-face	Activity	Learning	V	t Study	opportunities		
achieving the outcomes	٧	٧			٧	٧		
Lesson Delivery – main	Face-to-	Face: Discussion	on, group wo	rk in same ability {	group works.			
mode of delivery chosen				pt Mapping and C				
to support student	Indepen	dent Study: Tu	itor and stud	ent teacher reflec	tions (individual	ly and collectively	y)	
teachers in achieving the				ns and micro teach	-			
learning outcomes.	e-learnin	ng Opportuniti	es: OERs and	Video presentation	ons			
<ul> <li>Purpose for the</li> </ul>				nding of concepts				
lesson, what you		t various skills		-				
want the students to	• Prov	vide remedial t	uition/tutor	als on where nece	essary for experi	ences during less	ons and	
achieve, serves as		nning and micr	_					
basis for the learning	• Corr	Correct misconceptions and misinformation						
outcomes. An	• Buile	Build the necessary support going forward on SEN and Gender issue						
expanded version of	(NTS							
the description.		1a: Critically and collectively reflects to improve teaching and learning						
Write in full aspects	2c: Has s	secure content	: knowledge,	pedagogical know	ledge and peda	gogical content k	nowledge	
of the NTS addressed		for the school and grade they teach in.						
		3b: Carries out small-scale action research to improve practice.						
	-	3e: Employs a variety of instructional strategies that encourages student participation and critical						
		thinking.						
		loys instruction	nal strategies	appropriate for n	nixed ability, mu	iltilingual and mu	lti-age	
	classes)							
a Lagraina Outagna	Loorning	Learning Outcomes Learning Indicators Identify which cross – cutting						
Learning Outcome  for the leasen misked	_	lssues, core and transferable ski					_	
for the lesson, picked								
and developed from the course		inclusivity. Equity and addressing						
		diversity. How will these be addressed or developed						
specification • Learning indicators	• Iden	atify woakacc	and •	Make a list of		orations, Comm		
for each learning		ntify weakness ngths in learni		Weaknesses and		esearch: Through		
outcome		science lesson	_	strengths on post		resentation	1 81 Out WOIK	
outcome			101			Cochiation		
		the period under papers for sharing review						
	-	able to reflect	on •	Provide a reflection	en Equity	and Reflection is	s developed	
		ons learnt so f		report on STS and		reflective activitie		
		and state new		demonstrations a	-	S. COLITE GOLIVILIA		
		ghts and/or gre		illustrations on a				
		as needing rem		media of lessons l				
		plan and co-te		so far				
		pian and co-tec ne lessons on	2011	J. 101				
		cepts learned i	in the	Present teaching	and			
		on 7-lesson 10		learning portfolio				
		le modelling		developed throug				
İ								
		ersity in the pro	ncess	semester.	liout			

Content of lesson picked and developed from the	Correct     misconception/misinfor     mation for earlier     (lesson 7 – 11) lessons  Sub Topic	and/or mo misconce	odels linking develoritions/misinfo and conew insights  Teaching and learning outcomes: depending	on delivery mode selected.
course specification			Teacher led, collaborative group work or independent study	
Topic Title			Teacher Activity	Student Activity
Course Review 2 with STS seminar			Facilitate and provides the necessary tool for students activities.	
	Reviewing theunderstanding of lessons on teaching concepts in Water, Air and soil, Types and uses of Soil Measurement of time, mass, temperature and volume, Teachers as resources in diversity as well as a discussion and demonstration of co- planning and co-teaching.	60 minutes 70 minutes	Face-to-face:Tutor led brainstorming session with student teachers to unearth the weaknesses and strengths of student teachers in the lessons 7 – 11. Initiate discussion/Talk for learning approach using groupings (Same ability and then mixed groups) to identify student teachers' strengths and weakness in the lessons learnt so far.	Face-to-face: Student teachers discuss their problems in the previous lessons and provide a checklist to identify and record all possible weaknesses and strengths.
		20 minutes	STS Seminar: Tutor Uses mixed ability, and mixed sex groupings to encourage co- planning of lessons and classroom arrangement in preparation to teach early grade science. Allow Student teachers to cross share and peer review their plans.	sts Seminar:Student teachers Working in mixed groups and mixed sex groups co plan and cross share and later peer review their plans.
			Seminar: Student teachers peer review teaching and learning portfolios.	Seminar: Student teachers peer review their teaching learning portfolios as they cross share their portfolios
	Remedies to course topics	30 minutes	Face-to-face: Teacher groups student teachers according to remedy need and provide specific task assistance in the	Face-to-face: Students work in the special groups (Same remedy need group) on tasks to remedy their learning need. They then present concept

			areas on concept	maps and/or models			
			needing remedy.	linking			
			0 1 11,	misconceptions/misinform			
				ation to new insights.			
			NB: A short Quiz				
			(non- scoring) could				
			be used to identify				
			weaknesses in				
			concepts and				
			misconceptions not				
			well addressed at				
			after the				
			introduction.				
Which cross cutting		Equity and SEN: through mixed and same group work to protect vulnerable student teachers and					
issues will be addressed	establishing an interactive and inclusive classroom atmosphere.						
or developed and how	Through modelling and group work, collaboration is established.						
Lesson assessments –	Keep students peer Review ratings of their co-teaching plans for their portfolio for marks to						
evaluation of learning: of,	be added to Assessment component 1.						
for and as learning within							
the lesson							
Teaching Learning	Cardboards, Course manual, P	Poster paper, Fli	p chart stands.				
Resources	NaCCA, MoE. (2019; September). Kindergarten Curriculum (KG1&2) for Preschool. Accra: Ministry						
Required Text (core)		er). <i>Kindergarte</i>	n Curriculum (KG1&2) fo	r Preschool. Accra: Ministry			
	of Education			W (2000) C/			
	Abbey, T. K., Alhassan, M. B., Ameyibor, K., Essiah, J. W., Fometu, E., &Wiredu, M.B. (2008). <i>Ghana</i>						
	association of science teachers integrated science for senior high schools. Accra: Unimax MacMillan.						
Additional Reading List	Abbey, T. K., &Essiah, J.W. (1995). Ghana association of science teachers physics for senior high						
Additional Reading List	schools. Accra: Unimax Macmillan.						
	Ameyibor, K., &Wiredu, M. B. (2006). Ghana association of scienceteachers chemistry for senior						
	high schools. Accra: Unimax MacMillan.						
	Asabere-Ameyaw, A., &Oppong, E. K. (2013). Integrated science for the basic school teacher I.						
	Winneba: IEDE.	J, ().					
	Oddoye, E. O. K., Taale, K. D., Ngman-Wara, E., Samlafo, V., &Obeng-Ofori, D. (2011). SWL						
	integrated science for senior high schools: Students book. Accra, Ghana; Sam-Woode Ltd.						
CPD Requirement	Workshop on preparation of checklist and Reflection guides.						

