Creative Approaches

PROFESSIONAL DEVELOPMENT GUIDE FOR **STUDENT TEACHERS**

Transforming Teacher Education and Learning

Professional Development Programme

Theme 1: Creative Approaches
Professional Development Guide for Student Teachers

Contents

About these Materials

Welcome to the *Transforming Teacher Education and Learning* Professional Development Guide for Student Teachers.

Transforming Teacher Education and Learning (T-TEL) is a Government of Ghana programme seeking to increase learning outcomes - for tutors in Colleges of Education, (student) teachers, and above all for pupils in school. To that end, T-TEL has created a set of professional development resources for use by you, the (student) teacher, to enhance your college-based and school-based teacher education. We also hope that practising teachers, no matter how long ago you did you initial teacher education, will also find this material useful.

The resources is organised into twelve themes focusing on pedagogy and effective college classroom practice, such as creative approaches, questioning, group work, Assessment for Learning, Leadership for Learning, enquiry-based learning, gender, inclusion, and many more. The themes have been chosen because of their relevance to improving learning outcomes through the use of active pedagogies. For each of the twelve themes there are different teaching strategies (or teaching approaches). For instance, the teaching strategies in the theme "Creative Approaches" are songs, role-play, modelling, games, storytelling, poems and rhymes, and play.

For each of the strategies within a theme, the resources consist of three sequences of "Example - Plan - Teach - Reflect" (EPTR): one focusing on English, one on mathematics, and one on science. Many topics taught in the syllabus of the Diploma in Basic Education draw on those subjects, and you should find the examples useful irrespective of the course you teach.

Within each "EPTR" sequence there is an **example** for the use of the strategy (e.g. an example for using songs in English), followed by a section to support you in **planning** an activity using the strategy (e.g. planning the use of modelling in mathematics, or planning the use of role-play to illustrate an idea in science). You can then try out your activity (by **teaching** it to your pupils) after which you will find a number of activities for **reflection**, prompting you to think about your experience. For example: *Did the song achieve the intended learning outcomes? Did everybody (including girls and boys) participate in making the models? What can I do to involve learners with special needs?*

Within T-TEL, the student teacher resources are used within your usual College of Education teacher education programme, particularly within the elements relating to teaching practise. However, the resources are self-contained, and can be used for self-study by (groups of) in-service teachers. Research shows that such extended professional development programmes are an effective means of achieving improved learning outcomes, and we encourage you to review the additional T-TEL materials available, detailing the elements of the professional development programme itself. There is good evidence for the importance of learning together in "communities

of practice". If no college-wide or school-wide programme is available to you, we recommend that, at the very least, you work together with other (student) teachers in self-organised study groups. Note that we will use the words "teacher" and "student teacher" interchangeably throughout, to designate both student teachers (who are still in college), as well as practising teachers.

For each theme, the teaching strategies are presented together in a single book (in print), but they are also available online on the T-TEL website in various formats (such as HTML, ePub, PDF) alongside supporting information. All T-TEL resources are Open Educational Resources (OER), available under a Creative Commons Attribution Share-Alike licence. This means that you are free to use and adapt them as long as you attribute T-TEL and retain the same licence. In fact, we have used that same process to develop these materials from other OER that are available, such as the TESSA Ghana materials, and the OER4Schools programme.

Introduction to Theme 1
Creative Approaches

Creativity is fundamental to human nature, and is evidenced in many learning activities. Think of somebody who is one of your role models. They are likely to be a creative individual. This theme presents several approaches for teaching creatively, both general and specific to certain fields. They make it possible to bring out creativity, in yourself, as well as in your pupils.

Let's briefly look at each of these creative approaches.

- **Games** are a useful tool to use in teaching. They motivate, engage and help pupils to explore concepts and ideas. Games are a form of play. They follow rules that can support pupil learning, and make learning enjoyable.

- **Storytelling** helps us make sense of our lives. Stories are a very powerful medium in the classroom. They can be entertaining, exciting and stimulating, encouraging thinking about new ideas, taking us back in time; and much more.

- Using **songs** in the classroom, as with the other Creative Approaches, is fun and makes the lesson interesting for your pupils.

- **Role-play** is a technique used to put yourself in the position of someone else. You can use this powerful tool with your pupils to engage them in almost any classroom situation.

- **Modelling** means building a model: taking a complex idea, and creating a physical representation of it.

- **Play** fosters children's curiosity and social skills, and your student teachers should know about its value and be able to use it.

- Use of **poems and rhymes** can be a great teaching strategy, for example to develop listening and speaking skills.

While we are focusing on these strategies, you will find that they are all very broad, and can be adapted to suit your own creativity. For the Modelling strategy, Example-Plan-Teach-Reflect (EPTR) sequences are provided for mathematics and science only. For the other teaching strategies, there are EPTR sequences for English, mathematics, and science. Importantly, the materials can help you strengthen the use of English, mathematics and science *across the curriculum*. However, the ideas presented can easily be adapted for use in any subject (including topics in social studies and vocational studies).

Theme Overview
Creative Approaches

	Aspects of Creative Approaches	Main points
T1-1	**Games**	games are a form of play; games are a learning situation with competition and co-operation; games follow rules; games motivate and engage; games give opportunities to learn about following procedures and devising strategies
T1-2	**Storytelling**	stories are a powerful teaching tool; stories help people to make sense of their lives; stories introduce entertainment, excitement and stimulation into the learning process; stories contribute to the acquisition of critical thinking, listening and speaking skills
T1-3	**Songs**	songs introduce melody, rhythm and rhyme into the learning process; songs can contribute to retention; singing is fun, and it is motivating
T1-4	**Role-play**	role-play is a type of simulation technique; pupils play parts in dramatising a situation; participants adopt the motives and behaviours of the characters; role-play develops confidence in social situations; role-play builds an understanding of people's feelings; it actively engages pupils in learning
T1-5	**Modelling (mathematics and science)**	modelling means creating a three-dimensional representation of a complex idea, or of a real-world object; the purpose of a model is often to capture and simplify the essential aspects of a process or an object; building models gives opportunities to engage with concepts in an engaging way
T1-6	**Play (mathematics and science)**	play is a very valuable form of learning; play allows the imaginations of children to run free, and allows children to learn the consequences of actions; through play, learners have a chance to test ideas, and apply ideas in an imaginative way; play develops social skills and team work
T1-7	**Poems and Rhymes (English)**	a poem is a piece of writing which expresses feelings and ideas by using rhyme, rhythm and imagery; rhyme is the correspondence of sounds between words or the ending of words, especially at the ends of lines; poems use a variety of literary devices; poems are a powerful aid to the initial development of listening and speaking skills; young learners like to repeat sounds, words and phrases

Learning Outcomes for Teachers

You will:

- appreciate that there is a range of teaching strategies which allow pupils to take more control of their own learning;

- know a range of creative teaching strategies that can assist in concept development for a wider range of abilities;

- be able to apply specific creative teaching strategies in specific subject topics;

- use games to stimulate and involve pupils when they interact with other pupils;

- tell stories to introduce new ideas and new language in an entertaining way;

- know how to select a melody for a song, and create a lyric to highlight a specific idea;

- appreciate that songs can be used for different purposes, e.g. for language practice, for an introduction to a topic, for highlighting current issues;

- be able to organise role-play effectively to deal with attitudinal issues;

- know how to use role-play to help pupils to feel the pressure of the parts they play;

- be able to organise resources so that pupils can make models to represent ideas or objects;

- know when to deploy model-making as an effective way of making pupils engage with challenging concepts;

- acquire specific creative, manual, and craft skills needed to create 3D representations;

- appreciate that young learners need play situations to help them acquire concepts;

- be able to choose games that can be used constructively in specific subject situations.

Teaching Strategy 1
Games for Learning

Games are a useful tool for teaching as they support learning in many different ways.

- Games motivate, engage and help pupils explore concepts and ideas in a playful way.
- Games provide an opportunity for pupils to learn about following procedures, and to devise strategies within a given framework.
- Games have an element of competition which many pupils enjoy.

Teaching through a game in an appropriate context is a powerful tool, because this can shift the focus of a lesson from the tutor to the pupils. While pupils are engaged, the tutor is free to move around the classroom and support specific groups and individuals. She can assess whether the game is delivering the required understanding.
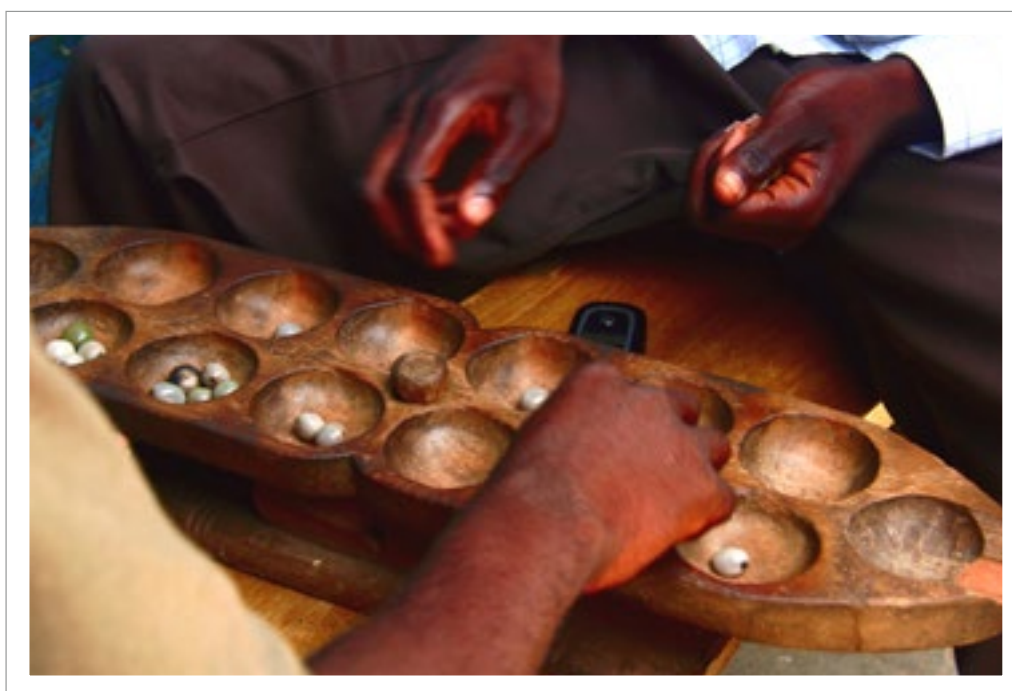

Figure 1. The popular game Oware

Games are an effective way of involving everyone in the class, and can serve many purposes. A game can:

- be used as a review or revision activity at the start of a lesson;
- change the pace of a lesson which is 'dragging';
- summarise what has been learnt, at the end of a lesson;
- promote many important skills, for example, socialising, negotiating, taking turns, problem solving, creating, etc.

A game should be

- relevant to the subject content you plan to teach (and support specific learning outcomes);
- appropriate for the age and ability group;
- suitable for both girls and boys.

Some games, such as 'Draughts' and 'Snakes and Ladders', can help develop mathematical and scientific thinking, for instance counting, rules, and relationships. Games are also very useful for language development. Pupils can learn new vocabulary or language structures in an entertaining way. They can help develop the four core skills of listening, speaking, reading and writing.

The following pages contain a selection of examples, focusing on the use of English, mathematics and science across the curriculum. Each example is followed by a number of tasks, supporting you in planning the use of games in your classroom. There are also questions for reflection, which you can use once you have taught your game.

Figure 2. Student teachers demonstrate a game which involves passing stones while singing a rhythmic song.

Teaching Strategy 1
Games for English Language

Theme	Creative Approaches
Link to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching English in Basic Schools (FDC 211) Primary: Unit 1 Reading for P1-3
Learning Outcomes for Student Teachers	By the end of the session student teachers will be able to: • use Language Games; • define Language Games and discuss the advantages and disadvantages of using them; • use different types of games and discuss the skills they develop in pupils; • demonstrate how the games are organised.

T1-1 E 1 Example

Games for English Language Learning

Below is a selection of games to use with your class. In these examples the games have been used for practising vocabulary and for practising chunks of language. However the beauty of using games is that they can be adapted for different teaching and learning scenarios.

Read through the games provided. As you read them, see which ones you might be able to use in your own classroom (with adaptation if necessary).

Game 1. Find Someone Who . . .

Give pupils a worksheet or put the 'Find someone who . . .' table on the board for them to copy. Run through the cues, checking that pupils understand all the vocabulary.

As a whole class or in pairs, pupils practise making *yes/no* questions out of the cues, for example:

> *Can you swim? Can you play the guitar?*

When the pupils can formulate the questions with ease, tell them to stand up and move about the room, asking each other the questions, answering truthfully. As soon as pupils find someone who says "*Yes,*" to one of the

questions, they write down that person's name in the 'name' column. They cannot fill in any name more than once. The first pupil to complete the table with a different name for each activity is the winner.

Example target language: '*can*' for ability

Find someone who . . .	Name
. . . can swim	
. . . can play the guitar	*Issa*
. . . can cook	
. . . can speak French	
. . . can use a computer	
. . . can dance well	*Dauda*
. . . can sing well	

During feedback or as a follow-up task, you can get pupils to either tell each other what they have found out or write sentences using the information they have gathered, for example:

> *Issa can play the guitar. Dauda can dance well.*

'Find someone who . . . ,' is an excellent game to play as it involves everyone and gets people moving. It can be used effectively as an 'icebreaker', for example, at the start of a new term/semester when pupils do not know each other. However it is also effective for practising new language in a fun and authentic way.

The game can be adapted for different levels of language. Select one or two language items and apply them to the game.

> **Present perfect (experiences): Simple present (habits, routines)**
> *Used to* **(past habits):** *Would* **(hypothetical situations)**
> **Likes and dislikes:** *Will/will be doing* **(future predictions)**
> **Opinions: Needs and wants (verbs of state)**

Game 2. Networks

Write a network on the board, and put some more words below it – as in the example below. The pupils add the given words to the network in the appropriate place. Pupils can then fill in any more words they know to extend the network.

(to) eat	a sofa	(to) cook	a bed	(to) get
dressed	a knife	(to) sleep	rice	a shower

Note: You might only give the topic word in the central circle and leave pupils to brainstorm all the words and how to organise them on the network**.**

Game 3. What and Where

Elicit from the pupils some vocabulary/phrases they have been learning. As they give you each word, write it on the board and circle it. Do not write the words in a list but put them randomly all over the board. When all the words are on the board, point to them in turn and get pupils to repeat them. As you point and they repeat, rub out the words one at a time but do not rub out the circles. Get the pupils to repeat the words including the rubbed-out words by pointing to the empty circles. Continue until all the circles are empty but the pupils can remember *what* the words are and *where* they belong. Get pupils to come to the board and fill in the circles with the correct words.

Note: Point out that this can be used in many scenarios. You can make it a competition with teams. It is a good revision activity and also can liven up a 'tired' lesson!

Game 4. Pelmanism

Put pupils into groups of four. Give each group a set of cards with five or six pairs of cards in each set (e.g. five or six new words and five or six matching definitions, pictures or translations).

ZERO	0	THREE	3
ONE	1	FOUR	4
TWO	2	FIVE	5

The cards should be of cardboard thick enough not to be see-through when placed face-down on the table. Get pupils to gather round one group as you show them how to play the game. The cards are shuffled and placed face-down in a regular pattern on the table. Pupils take it in turns to turn over two cards, face up on the table (not picked up into their hand). They must turn over the cards in this way so that everyone in the group can see what and where the cards are. If they match, the pupil keeps the cards. The winner is the pupil with the most sets of cards.

Note: This game can be used with pupils at any level. It can be organised as described above or with the teacher and the whole class. If you use it with the whole class make sure your cards can be seen by all your pupils. Put the

cards on the board. Divide the class into two teams. Nominate a pupil to come to the board. They choose 1 card at a time, turn it over quickly so that everyone can see, and then replace it. Then they choose another and repeat. If it matches, the pupil/team keeps the cards. If not the next team has a go.

T1-1 E 2 Plan and Practise Together
Games for English Language Learning

Preparation. Which games interested you most? Collectively go through the four games and discuss them with your peers. Briefly consider:

- How would you can adapt the game (if necessary) to your context, and the topic you are teaching?
- What exactly do you want your pupils to practise and learn through the game?

Planning a lesson activity. Now plan a game, using the activity plan found in the appendix. Pair up with a colleague, and select one of the four games above. Think about the topics that you will teach to your pupils in one of your lessons next week. Consult the school syllabus if necessary. Record the game and topic in your learning journal. Make notes about how you will adapt the game, and what instructions you will give. If there is time, you may want to practise the game with colleagues during the session, and discuss any problems you anticipate.

T1-1 E 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-1 E 4 Reflect Together
Games for English Language Learning

Now that you have taught the lesson activity, reflect with a colleague (or a group of colleagues) on how it went. In your reflection, consider the following questions:

Question 1. What did you learn from doing the game in your lesson? Think about classroom instructions you gave, and how your pupils responded. In

the table below, make some notes during or after the discussion with your colleagues.

Reflections on Using Language Games in the Classroom	
Classroom Instructions	**Work Arrangements**

Question 2. Thinking about the game you conducted, how do you think it helped your pupils' learning? Write one or more games into the column below, and tick the areas that it could help with.

Language Game				Helps with
				Memorisation
				Recognition
				Sentence level
				Practice
				Revision

Figure 3. Student teachers play a game

T1-1 E 5 Further Resources

More Games for Practising Language and Vocabulary

In addition to Games 1 – 4 above, here are some more games that you might like to explore.

Game 5. Bingo

Get the class to brainstorm or recall a list of 10–15 words they have recently learned (this can be from a Language or Literature lesson) and put them on the board. The pupils choose any five and copy them into their books.

Read out the words in any order. Each time the pupil has one of the words that you read out, they put a tick next to that word (in their book). The first pupil to tick all five words shouts "Bingo!" Check the pupil's list by asking them to read the winning words out loud.

Continue to read out more words until there are three or four winners.

Note: Remember this is a competition so it should be fun and lively. Make sure you give time limits to set the pace.

Game 6. Noughts and Crosses

Put a grid on the board with a set of nine words in it (words you have been learning). The pupils work in teams or pairs; if in pairs, only one of the pupils copies the grid into their book. One team or player takes 'Noughts' (O), the other, 'Crosses' (X). Noughts start. They choose a word and make a sentence with it. If the sentence is correct they put their mark (O) in that square. The first team or player to get three noughts or three crosses in a row (across, down or diagonally) wins. See the example below:

Example board

COFFEE	RICE	COCONUTS
MANGOES	GROUNDNUTS	PINEAPPLE
YAM	BANANAS	SUGAR

Example game

O: Groundnuts. Ghana exports groundnuts.

X: Bananas. A lot of bananas come from Africa.

O: Yam. We eat a lot of yam in Ghana.

X: Mangoes. A lot of mangoes come from Ghana.

O: Coconuts. …

Note: Monitor carefully to ensure that your pupils are making sentences, and point out that sentences can be simple, as in the example, or more complex e.g. Ghana exports groundnuts but they are also used as a key staple in the Ghanaian diet.

Game 7. Word Thieves

Choose a fairly long passage on a particular topic (e.g. transport) and explain to the pupils that they have to 'steal' words from the passage by hearing and writing down all the vocabulary related to the topic. You read the passage out loud only once so pupils have only one chance to 'catch' them.

In pairs, the pupils then compare their lists of 'stolen' words and add words from each other's lists. You then hand out the text and pupils find the rest of the words that they missed.

Note: Point out that this is a good vocabulary activity to use at JHS.

Game 8. Backs to the Board

The class sends a pupil to sit at the front of the class with his or her back to the board.

Write a word on the board which everyone else can see. The class must then define the word, describe it, give examples of what it is – without saying the actual word itself and the pupil with his or her back to the board must guess it.

For example: You write the word *concrete* on the board. Pupils may say things like:

> **It's something you build houses with.**
> **It's made with sand.**
> **It dries quickly.**
> **It's usually grey.**
> **You can shape it easily.**

Note: Point out that this is a good activity for use at Junior Secondary level and very popular. However it requires good classroom management. Make sure you give clear, simple instructions and check for understanding. You can also make this a competition by dividing the class into 2 or more teams and by giving strict time limits.

Game 9. Chain Game

Put your pupils into large groups and get them to sit in a circle. Give your pupils a 'starter' sentence. The first person in every group starts the chain by repeating your sentence and adding another. For example, if the aim is to practise simple past irregular verbs in statements, you could start the chain off with, "Yesterday I didn't go to school," and the first person in the circle repeats it and adds to it. The second person in the circle repeats what you and the first pupil have said and then adds to it, and so it goes on around the circle, building up a long chain of events that everyone has to remember.

Example target language: simple past irregular verbs

> **You: Yesterday I didn't go to school.**
>
> **Pupil 1: Yesterday I didn't go to school. I slept in.**
>
> **Pupil 2: Yesterday I didn't go to school. I slept in. I had breakfast at 10 o'clock.**
>
> **Pupil 3: Yesterday I didn't go to school. I slept in. I had breakfast at 10 o'clock. Then I went to my friend's house.**
>
> **Pupil 4: etc.**

This game can be adapted for:

Going to **future**	**Conditionals 1, 2 or 3**
I'd like to . . .	*There's a little/there are a few . . .*
Could you please . . . ?	*Can I please have . . . ?*
You should . . .	*The dog ran* **over** *the hill,* **into** *the . . .*
Adjectives with '*be'* *e.g. The view is beautiful etc.*	*There was/there were*

Note: This game is very effective when used in large classes as you can have large groups and therefore can involve everyone. However, it requires the pupil to organise it carefully and also to monitor carefully too. One of your monitoring jobs will be controlling the noise levels. Even though this is 'good noise', you do not want to disturb other classes.

Teaching Strategy 1
Games for Mathematics Learning

Theme	Creative Approaches
Link to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Basic School Mathematics (PFC 222) Primary: Year 5, Unit 5.13, specific objective 5,13,1.
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use simple games to aid understanding.

T1-1 M 1 Example

Where am I? Introducing Position in an Array

The game "Where am I?" can be used to help pupils understand positions of objects in a rectangular array. Here is a scenario for using this game as a lesson activity.

Step 1. You explain to your pupils that the game is played in pairs (or small teams). Ask you pupils to form pairs. Everybody starts by drawing two 4 × 4 grids and labelling them as follows:
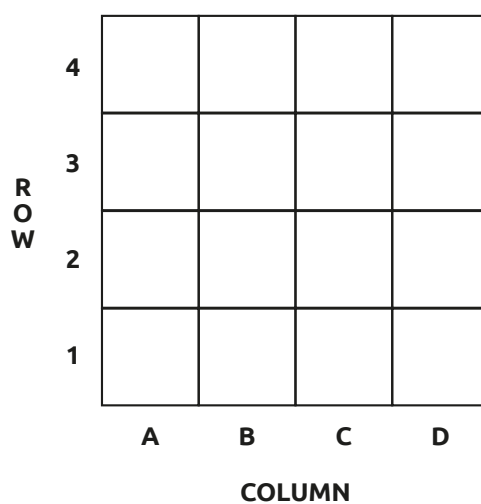

Figure 4. Empty grid

First grid: Each square on the grid corresponds to part of a garden, and pupils in the pair start by marking the positions of three trees in the garden on their grid – but without showing this to their opponent.
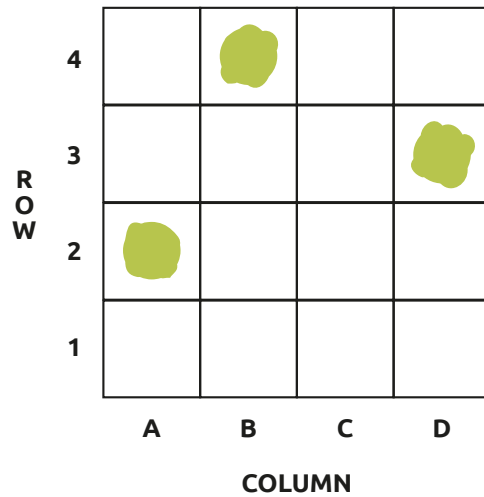

Figure 5. Grid showing possible positions of trees

Step 2. Both pupils in each pair then take it in turns to guess where the trees in their opponent's garden are by guessing the column and then the row. For example, a pupil might say "I think there is a tree at A4".

Second grid: The second grid is used for record keeping. Pupils use their second grid to keep a record of the locations already guessed and what they found out.

Step 3. The pupil who finds all of their opponent's trees first wins the game.

An important learning objective for this activity is that pupils learn that each position on the grid has a unique address, like a cell phone number. They can find the location using its address, just like they can telephone a friend using their cell number. We use the term "address" to refer to the exact location of the objects in the array. This is similar to a residential address (with the house number, name of the street, and town) used by a friend to find your house.

The game helps pupils become aware of the potential for confusion when giving the address of a location. In this game, our convention is that the column is given first (as a letter) and then the row (as a number). Letters and numbers are used rather than just numbers to avoid the confusion about which comes first, the column or the row. You could explain this as "we go along first, then up".

Note that the terms 'rows' and 'columns' apply to the spaces between the lines and not the intersections of the lines. This is a potential source of confusion in the future when pupils learn to plot graphs at the points where lines intersect. Rows and columns are also concepts that appear in spreadsheets and matrices.

T1-1 M 2 Plan and Practise Together

Devising Games for Mathematics Learning

Before using a game in teaching, it is important that you try it out yourself with your student teacher colleagues. Use the activity plan found in the appendix. Trying out games helps you to determine the suitability of the game for a topic you are planning to teach.

Planning task 1: Where am I in the classroom? The game 'Where am I?' can be modified for use in the classroom. Many classrooms are organised in neat rows, as shown below. Otherwise, you could also ask pupils to stand in a grid.
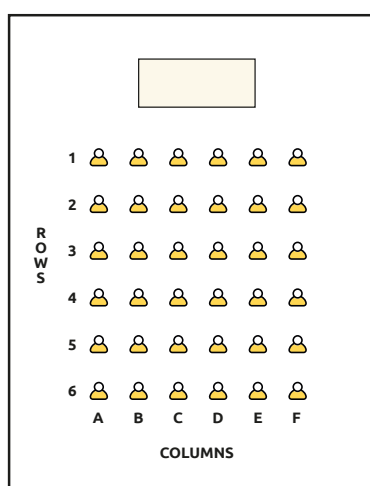
Figure 6. Seating Arrangements

However, before you try this in class, you can play this game with your colleagues in preparation. You can ask each other questions like: "Where is column C row 6?" They could also be assigned tasks such as "Place this book at E4" or "Move the book from A5 to C2".

For planning task 1, now plan how to use this game with pupils as part of a lesson on 'position in an array'. Make a note of the required steps in your learning journal. It is important that your pupils can relate mathematical ideas to real world applications. With your colleagues brainstorm about the where addresses are used. Examples might include a sports stadium, a theatre or seating on an aeroplane. Discuss how you would use this to motivate the game.

Planning task 2: Using games in other parts of the curriculum. The above example may not be what you are about to teach. In this planning task, discuss what you are about to teach (using the school syllabus if necessary) and identify, adapt or devise an appropriate game that you can use to teach. Note in your learning journal what game you are going to use, and what steps you will need to take to play it in the classroom.

Figure 7. Dormitories at the University of Ghana. How would you find your way to a specific room?

T1-1 M 3 Teach

It is important for your professional learning that you actually teach the activity you have planned. Please make sure you have your own activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-1 M 4 Reflect Together

Are Games Useful for Mathematics Learning?

Reflection task 1: Where am I in the classroom? Based on your experience of trying the game 'Where am I in the classroom?' with your class, reflect on how the activity went. What were the other student teachers' experiences? How was the activity received by pupils? Do you think that it enhances their learning? In case you also discussed this with your pupils, did they think games are a useful teaching aid?

Reflection task 2: Your own games. Share how the game went. What topic did you cover? What were the pupils' reactions?

If you are preparing a learning journal, note down what you think is the most challenging aspect of using games in teaching. Also note down what you have learnt from this unit that was most effective in improving your teacher training.

T1-1 M 5 Further Resources

More Games for Mathematics

Playing a co-ordinate system. Similar to the rows and columns game, you could get pupils to role-play an x-y co-ordinate system. You could use this to demonstrate position in the x-y co-ordinate system ("Where is point (1,2)?") or simple equations ("Can all points on the line $y = x + 1$ please raise their hand?").

Features of a useful game. Simple games can often be modified or extended for school teaching. What are the essential characteristics of a mathematical game which can be used or adapted to assist learning in the classroom? For example, you might believe that a game should have an element of:

- competitiveness; this can be achieved by having two or more players who take turns to achieve a 'winning' situation of some kind;
- choice and decision-making about the next move throughout the game;
- interaction between the players in that the moves of one player affect those of the others.

Prepare some guidelines with your fellow student teachers that can be passed on to pupils to help them devise games for their school classrooms.

Games in books and on the Internet. There are plenty of mathematics games to be found in books and on the Internet. Carry out some research to find suitable games for different topics and share your findings.

Teaching Strategy 1
Games for Science Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Science (FDC) LP Natural Science Syllabus (2012) P3 Section 1 Unit 1 Living and non-living things
Learning Outcomes for Student Teachers	By the end of the lesson, student teachers will be able to use games to facilitate pupil learning.

T1-1 S 1 Example

Using a Matching Card Game to Learn about the Properties of Living Things

Ms. Mensah is teaching about groups of plants and animals with her pupils. Ms. Mensah has identified games as very useful and enjoyable for pupils in the teaching of living and non-living things.

She wants to use a game to reinforce the pupils' understanding of the great variety of plants and animals; their properties and their use in everyday life. Here is an example of how she used a card game with her pupils. She has prepared a set of pairs of matching cards. In each pair, there is a picture on one card and a word statement on the matching card.

Playing the Property Game

Ms. Mensah explains to the class how to play the game of picture and property cards. She asks the pupils to play the game in groups, first spreading the set of cards face down on a table. Pupils take it in turns, turning over any two cards, placing them face up. If the cards match e.g., one has a picture of an animal (frog) and the other is a card that says 'lives on land and water (amphibian), the matched pairs are correct, and the player keeps the pair of cards.

Figure 8. Living things – animal pictures and matching property statement cards

The next player then takes their turn and does the same. If the pairs do not match, the player has to turn the cards face down again. Ms. Mensah asks pupils to gather as many matched pairs as possible. As they play, she goes round to see how they are managing. Ms. Mensah helps the pupils explain some problems. She asks whether their selection and answers to questions are right. She asks both female and male pupils questions to check their understanding:

> **"Which animals lay eggs with leathery shells?"**
>
> **"Where do the animals you have on your cards live?"**

Ms. Mensah did not interact at all towards the end of the game. The pupils are totally absorbed in their games. They are also helping each other to find matched pairs among the remaining cards. The winner in each group is the person with the most complete matched pairs.

At the end of the lesson she asked the pupils to copy and complete a table from their textbook about grouping plants and animals according to properties.

T1-1 S 2 Plan and Practise Together

Preparing to Use a Card Game for Teaching

Let us now consider whether we can use or adapt this game for a topic that we are going to teach. Discuss with your colleagues what topics are coming up, and consult the school syllabus if necessary. If you cannot use the card game for the above topic ('Grouping plants and animals'), consider how you can adapt the game to another topic. For example, it might be useful to use cards to match symptoms and diseases when covering "Infections and Diseases". If there is time, you may want to practise the game with colleagues during the session, and discuss any problems you anticipate.

To help you plan, please use the activity plan template, found in the appendix, which looks like this:

Aspect	Details
Theme	
Teaching strategy	
Pupil level (year and / or course)	
Syllabus reference	
Specific Objective(s) of the activity	
Activity focus	
Activity description	
Textbook title and pages (if available)	
Materials / Resources	
Observations (after lesson)	

Activity 1: Make some cards.

To make the cards, you need to gather the resources to make sets of property cards (on animals or otherwise). Prepare another set of cards with appropriate terms (similar to what Ms. Mensah used above: flowering plants, non-flowering plants, cocoa, pawpaw, pine, moss, fern, frog, rats, tilapia, chicken, amphibians, scales, etc). Make the cards from old envelopes and cardboard.

Think about the level at which you might need to make the cards. Do you want to classify all animals, or just classify vertebrates? You will design the property questions according to the classification you want to make.

The act of making the game is part of learning. While you might want to prepare the first set of cards in the session with your colleagues, in the future you could involve all the pupils in helping to make the picture-property cards. You may also want to prepare and write the rules on a piece of flipchart paper to be fixed on the blackboard. Store the set of cards in an envelope or box when they are not being used.

Activity 2: Discuss the game.

Now, discuss in your student teacher group how to play the game with pupils. For example:

- How can you help your pupils to learn about classification after playing the game (e.g. classification of living things)?
- Which concepts can pupils learn or revise by playing the game?
- How will you organise the classroom space to play the game?
- How many groups can you form, considering your class size?
- Do you have enough materials to make all the sets you will need during the lesson?
- Will you make the cards in advance? Or will your pupils create the cards themselves? The pupils can do this in groups, so that everyone is involved.

Figure 9. Living things – animal pictures and matching property cards

T1-1 S 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-1 S 4 Reflect Together

Advantages of Using Games as an Aide to Learning

Now that you have used a game in a school lesson, reflect on how it went. Here are some questions to help you with the reflection:

- Did the pupils enjoy the game?

- What did they learn from playing the game?

- Were the instructions that you provided clear?

- Were there any differences in the way in which female and male pupils participated?

- What materials have you and/or your student teacher colleagues got that you can use to make resources for your pupils?

- Did you involve the pupils in making the cards?

- Do you think the pupils achieved the objective(s) of the activity?

- What concepts and skills are practised through the game?

- What benefits do you think this game could have for all your pupils, especially for those who find learning more difficult?

- How could the game be improved or adapted?

- Can you think of other topics in the school syllabus where games can be used effectively?

In your learning journal, record the resources that your pupils helped to find. Resources are essential for doing activities like this. Mention any challenges you found as you assembled the resources for this activity.

Teaching Strategy 2
Storytelling for Learning

Stories help us to make sense of our lives. Many traditional stories have been passed down from generation to generation. They were told to us when we were young. They explain some of the rules and values of the society we were born into.

Stories are also a powerful tool for teaching and learning in the classroom. Stories are an entertaining way of introducing new ideas and new language. Stories also help to develop critical thinking, listening and speaking skills.

Stories can:

- be entertaining, exciting and stimulating;
- stimulate thinking about new ideas;
- take us back in time;
- help us to appreciate how people used practical solutions to solve problems;
- help to make topics more interesting and less abstract.

Choosing the right story is important. When choosing a story, you might like to think about the following questions:

- In what situation will you use the story?
- Is it culturally appropriate and gender equitable?
- Is it at the right level for your pupils?
- Is it the right length?

It is important to prepare carefully when telling stories. Listening to a story is not just a passive experience for pupils. Good stories provide opportunities for dramatisation and "Total Physical Response" (TPR), as well as visuals. Practise the key events of the story so that you can tell it in your own words (rather than reading it from a book). Consider what props and cues to use, how to use the script and how to rehearse the story.

There are many different ways in which to introduce a story, but you may want to start by explaining its purpose, presenting the key vocabulary, and alerting the pupils to the concepts that underpin the story.

Here are some hints for telling a story effectively:

- engage the pupils, for instance through your own body language (including making eye contact); use different voices for different characters where necessary;

- vary the volume and tone of your voice by whispering or shouting at appropriate times - for example, for a story about animals, you could include animal noises to make the story more lively;

- use puppets or animal toys as props;

- decide in advance where will you pause, and when to repeat phrases for dramatic effect;

- involve the pupils e.g. "What do you think happens next?"

Rather than letting your pupils listen passively, engage them as the story progresses. As they listen, your pupils might write down the key points of the story or draw a picture.

Once you have told the story, you can divide your class into groups, and ask them to retell the story (perhaps from another perspective). Through analysing the story, pupils might separate fact from fiction, debate scientific explanations for phenomena, or solve mathematical problems.

Asking pupils to devise their own stories is another very powerful tool. To ensure that learning objectives are met, you might want to provide some structure, content and language for them to work within. Developing their own stories can help to make sense of complex or otherwise challenging situations or ideas.

The following pages contain a selection of examples illustrating the use of stories for learning across English, mathematics and science. Each example is followed by a number of tasks, supporting you in planning the use of storytelling in your classroom.

Figure 10. Students listen to a story

Teaching Strategy 2
Storytelling for English Language Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching English in Basic Schools (FDC 211) Primary: Unit 3 for P1-3
Learning Outcomes for Student Teachers	By the end of the session student teachers will be able to: • develop their own and their pupils' listening and speaking skills through the use of storytelling; • describe and discuss the importance of storytelling; • select relevant and appropriate stories for your pupils; • develop their own storytelling lesson plans and experience using the lesson with their own pupils.

T1-2 E 1 Example

Storytelling for English Language Learning

Using storytelling as a strategy for delivering subject content to your pupils exposes them to experiential learning, by showing them how to teach in an interesting and engaging way.

Please read the story "A Big Lesson for Little Frog" (written by Korey O'Sullivan, 2013, Andover, Hampshire, National Geographic/Cengage Learning, 2013), and the **lesson plan** below that goes with it. The story is about a little frog, who is sad because her animal friends can do many things that she cannot do. However, she learns that, despite being little, she can do as many things as other animals, such as hop, swim, and catch flies. If you do not have this story available, see whether you can find another story that fits the type of activities below.

Go through the story and lesson plan with your fellow student teachers and discuss the following questions:

- What preparation is required before you use storytelling in a lesson? Think of the following areas: selection of story; dramatisation; props/ cues; using the script; rehearsing.
- What subject could you use this story with and why?

- What level of participation will the pupils have?
- Why are the different stages of the lesson important for learning?
- Why is there a variety of different activities? Look at each activity (all of which are numbered), then give each a name and say why they are all important. Record this in the following table:

Activity Name	Why is this activity important?

- Could you use this strategy **and** a similar plan for your classes?

Lesson Plan: A Big Lesson for a Little Frog

A Big Lesson for Little Frog	
Focus on Language skills	Listening and Speaking
Learner outcomes	By the end of the lesson pupils will be able to say what animals can and can't do and revise 'animal' vocabulary
Materials/ resources	Puppets/background scene on blackboard/picture and word flashcards of animals/storyboard of the story
PRE- Activities	
Activity 1: *Activity 2:*	Make simple stick puppets and introduce your new friend 'Little Frog' to the class. **Student Teacher:** Class, meet my friend. His name is Little Frog. Say Hello, Little Frog. **Little Frog:** Hello class! How are you? I'm so happy to be here. **Student Teacher:** Class say hello to Little Frog. We are going to read a story about Little Frog (show cover of book if available) or a flashcard. What do you see? **Little frog:** That's right. It's me!!! Look through the book or flashcards but do not show the pages to the pupils, and say, "I see Little Frog has some friends. What animals do we know?" Make **an animal web** with pictures or text. Use flashcards to review the animals. When a pupil names an animal, the teacher can put the picture and/or word flashcard on the board in the web.
Pre-teach vocabulary	How do these animals move? Mime different actions including the actions in the story e.g. swing, fly, hop, swim etc. Use word cards for each movement.

Activity 3: *Activity 4:*	Show the Little Frog puppet and the background with a tree. Using the puppet, ask pupils: **As the frog**: Can I swing through the trees? **As the teacher**: Can Little Frog swing through the trees? Then go through each action: Fly, reach the top of a tree, hop, swim etc. As you ask questions either as the Little Frog or as the student teacher, put the word cards for swing, fly, hop, swim, etc. on the board in a chart. Then for each action, put a √ if the pupils say YES and a × if children say NO. **LITTLE FROG** LITTLE FROG SWING ✗ FLY ✗ HOP ✓ SWIM ✗ While pointing at the chart, say, "Let's listen and find out what Little Frog can and can't do".
While Activities	
Activity 5: *Activity 6:*	Tell the story using the puppets and the background. Use different voices for each animal and show the movements with your body. Tell the pupils, "When you hear the action, do it". Point to the words on the chart and practise one.
Post Activities	
Activity 7: *Activity 8:*	Pair work Q&A to check predictions. Put pupils into pairs (A and B). For each action on the chart, A asks B "Can Little Frog ___?" B has to answer "Yes, he can." or "No, he can't". Then swap roles, B asks A. After pair work ask the pupils to confirm each prediction. Check off the correct answers to confirm their predictions on the chart. Prepare **a storyboard** with pictures of the different scenes in the story. In the scenes the animals have speech bubbles. First, pupils put them in order. Then, together, the pupils retell the story. Work with the pupils to write the dialogue in the speech bubbles.

T1-2 E 2 Plan and Practise Together

Storytelling for English Language Learning

It is now your turn to plan to use storytelling in your lesson, and to create a lesson or activity plan. You can use the activity plan template found in the appendix. You should consult the school syllabus, to identify a topic that you are about to teach, and identify a suitable story. If the story below fits, you can use it. Alternatively, consult a text book, or create your own story. If there is time, you may want to practise the story with colleagues during the session, and discuss any problems you anticipate.

The Cat and the Cockroaches
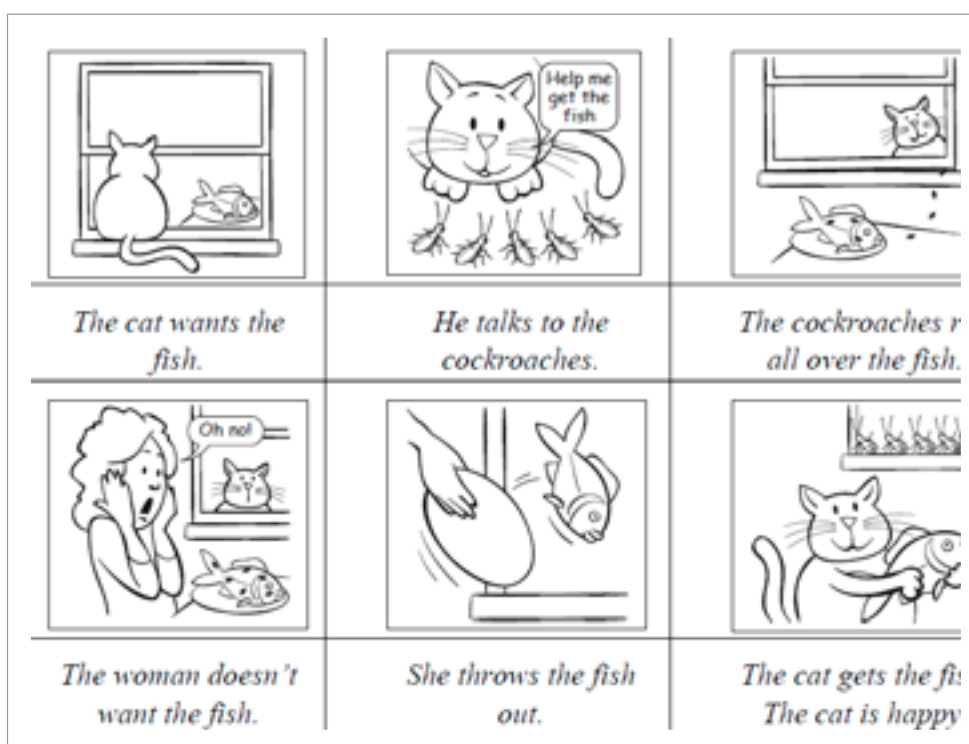
Figure 11. The Cat and the Cockroaches (Source: PIP project, GIZ, 2012)

T1-2 E 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-2 E 4 Reflect Together

Storytelling for English Language Learning

Now that you have taught the lesson plan, reflect together. Consider the following questions:

1. What did you enjoy and why? Discuss what you were not sure about. Make a list of both:

What I enjoyed	What I was not sure about

How should you prepare for a storytelling lesson and why should you prepare? Why is it important to have criteria for choosing a story and what criteria should be used? Think about cross-cutting issues e.g. inclusion, gender and culture.

2. Think about the different activities at each stage of the lesson and together make posters of pre-, while and post- activities for storytelling and discuss **why** they are important to learning.

If you are preparing a learning journal, remember to write down any specific outcomes from your reflection.

Figure 12. A tutor has prepares for storytelling

Teaching Strategy 2
Storytelling for Mathematics Learning

Theme	Creative Approaches
Link to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Basic School Mathematics (PFC 222) Junior High School: Year 3, Unit 3.7, specific objective 3.7.3 (use Pythagoras Theorem to find the missing side of a right-angled triangle).
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use storytelling to introduce a concept.

T1-2 M 1 Example

The Ancient Egyptians and Pythagoras

The following story is about how the ancient Egyptians were able to make constructions with square corners and how their method is related to Pythagoras' theorem.

The ancient Egyptians were great builders. Some of their constructions which, like the great pyramids at Giza, were built over 4,000 years ago still exist for us to enjoy today.

Figure 13. Pyramids at Giza

The Egyptians knew nothing about Pythagoras' Theorem. It would be another 2,000 years before Pythagoras was born. They did, however, have a very simple way of forming right angles that Pythagoras would have immediately understood. They made use of ropes to form right angles during the construction of their pyramids.

Figure 14. Surveyor carrying a rope from an image in the tomb of Menna

The Pharaoh employed land surveyors who used a special rope to form right angles. The rope they carried was knotted in such a way that there were twelve equal parts.

Figure 15. Egyptian survey rope

In order to create a right angle, the surveyor's rope was laid out in a particular way to form a right-angled triangle.
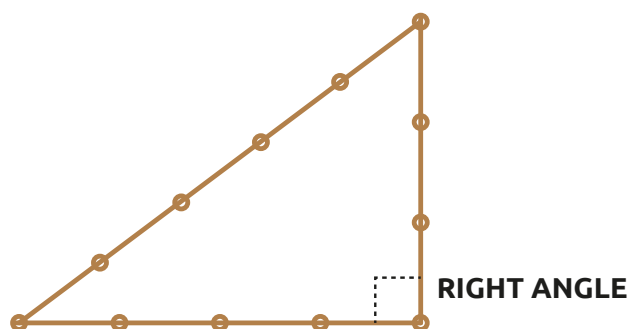
Figure 16. Surveyor's rope laid out to form a right-angled triangle

The longest side of a right-angled triangle is called the hypotenuse. Although the Egyptians knew that when the rope was laid out in the form of a triangle, the angle opposite the hypotenuse was exactly a right angle, they did not – for all we know – concern themselves about the relationships between the lengths in the sides of the right-angle triangle.

This relationship was only established by Pythagoras. Pythagoras was a mathematician and philosopher, born in Samos, Greece, in 570 BC. One of his many interests was the relationship between the sides of a triangle. He found that when three squares are placed to form a triangle and the area of the largest square was equal to the sum of the areas of the two smaller squares, they then formed a right-angled triangle.

Figure 17. Pythagoras Theorem

Since the area of a square is the square of its side, it follows that the sum of the square of the hypotenuse of a right-angled triangle is equal to the sum of the squares of the remaining two sides.

We express this by the formula $A^2 + B^2 = C^2$.

If we look back at the Egyptian survey rope, when it forms a triangle the sides are 3, 4 and 5 units. When we place them into the above equation we find that $3^2 + 4^4 = 5^2$ or $9 + 16 = 25$.

The numbers 3, 4 and 5 are an example of a Pythagorean triple. This is a set of three whole numbers that satisfies Pythagoras' Theorem, and will therefore be the le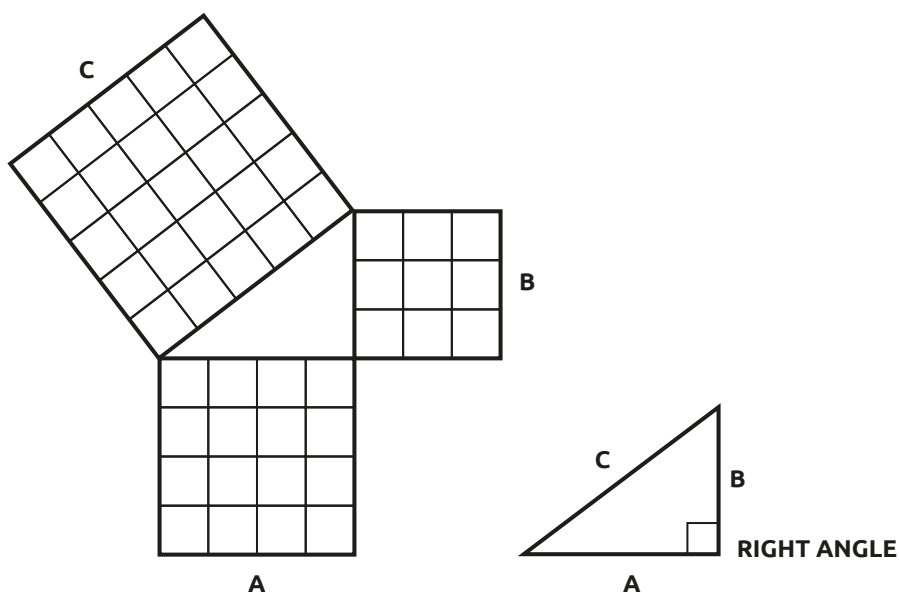ngths of the sides of a right-angled triangle. Other commonly encountered Pythagorean triples are given in the following table.

Side A	Side B	Side C
5	12	13
8	15	17
7	24	25

Figure 18. Pythagorean triples

Multiples of Pythagorean triples are also triples e.g. (3 × 2), (4 × 2), (5 × 2) or 6, 8, 10 is a Pythagorean triple.

As we have seen in this example, stories (in this case an example from Egyptian and Greek history) can provide not only an insight into how certain mathematical ideas were developed, but can also offer an appealing introduction to particular topics.

T1-2 M 2 Plan and Practise Together

Writing a Story to Introduce a Mathematics Topic

Planning task 1. Identifying a suitable topic. Discuss possible uses of stories in mathematics teaching with your colleagues. Look through the syllabus together, and identify an up-coming topic that you can relate to a story. There are many stories that could be created around the use of these different measurements. For example:

- Building a shed – measuring dimensions in order to buy the wood
- Tiling a bathroom wall – measuring the area of the wall, deciding on the number and pattern of tiles
- Making a cake – masses of ingredients.

If you happen to be teaching on this unit you can use these examples. Otherwise, use your own example. You can use the activity plan template found in the appendix. If there is time, you may want to practise the story with colleagues during the session, and discuss any problems you anticipate.

T1-2 M 3 Teach

It is important for your professional learning that you actually teach the activity you have planned. Please make sure you have your own activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-2 M 4 Reflect Together

How Effective is Storytelling for Mathematics Learning?

After you have taught the lesson activity, reflect on how it went. If at all possible, do the reflection tasks together with a colleague who has also tried the activity.

Reflection task 1. How was the story received? How was your story received by your pupils? Did pupils find your story interesting? Was your story appropriate in length or did you find it was too short for pupils to become interested, or too long to hold their interest? With other student teachers, discuss what went well and the challenges that arose. Make a note in your learning journal.

Reflection task 2. Suitability of stories. Stories may sometimes reinforce gender stereotypes or show some ethnic groups in a poor light. They may also draw on examples from countries other than Ghana. Look back at the stories that you and other student teachers collected from their pupils. Were stories always:

- gender-sensitive?
- acceptable to all ethnic groups?
- a celebration of local culture?

What will you do as a student teacher to ensure that any stories you use in your lessons in future are gender-sensitive and acceptable to all ethnic groups?

In your learning journal, note down what was the most challenging aspect of teaching through storytelling. Also note down what you have learnt from this unit that was most effective in improving your work with pupils.

Figure 19. A tutor engages student teachers in story telling

Teaching Strategy 2
Storytelling for Science Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Science (FDC) UP Science Syllabus (2012), P4 Section 1, Unit 2 (rusting).
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use stories to link science learning to real life.

T1-2 S 1 Example

Using a Story to Teach about Rusting

Ms Azumah is teaching the unit on rusting (UP Science Syllabus (2012) P4 Section 1 Unit 2 Rusting). The unit deals with the causes of rusting, the effects and prevention of rusting. She feels that using a story would relate the concept to real life. As a stimulating introduction to the topic, she has brought a large length of rusted steel bar into the classroom. She also draws her pupils' attention to pictures of rusted iron in a reference book. She asks questions about the rusted steel bar, and about the pictures:

> **What do you think happened to the steel bar?**
>
> **Why is an iron roof brown?**
>
> **Have you seen a house with new corrugated sheets? Are they brown?**
>
> **Why are the old ones brown?**
>
> **What do you think might have caused this?**

She presents this rust story verbally:

> *The Leaking Classroom*
>
> *When Kojo visited his grandfather in his home village, he spoke to the head teacher of the village school. The head teacher lamented that most of the classrooms had leaking roofs during the rainy season. Kojo saw that pupils had put buckets all over the classroom floors. The noise of rain droplets disturbed lessons all the time. The noise was so bad that lessons stopped whenever it rained heavily.*
>
> *Kojo learned that this problem was a big contributory factor to the low performance of pupils in the school. The constant disruption meant that learning*

time is seriously reduced. Kojo noted that the school in his own community had very good roofing sheets, even though it was built a long time ago. They were all exposed to moisture and air. However, the people cleaned the sheets with a wire brush, and painted them every three years.

Ms Azumah then asks these questions:

How would you feel if your classroom roof was leaking all the time?

Why do you think the sheets in Kojo's grandfather's village school developed holes?

What do you think the brown substance on the sheets is?

What did the people in Kojo's home place do to their classroom roof? Why did they do this?

What difference did this make?

Ms Azumah now sets up the activity from one of the school textbooks.

Figure 20. Bottles with nails.

T1-2 S 2 Plan and Practise Together

Preparing to Use the Story about Rusting

With your student teacher colleagues, discuss Ms Azumah's lesson on rusting. Prepare to use storytelling in a lesson with your own pupils. If the topic 'rust' does not fit with your teaching programme at this time, identify how storytelling can be used in a topic you are planning to do with your pupils. For instance, for the topic 'Machines', you might create a good story about the introduction of the wheelbarrow into village life. The story might illustrate how the wheelbarrow made farming work easier for your grandparents. If there is time, you may want to practise the story with colleagues during the session, and discuss any problems you anticipate.

You can use the activity plan template found in the appendix to help you plan.
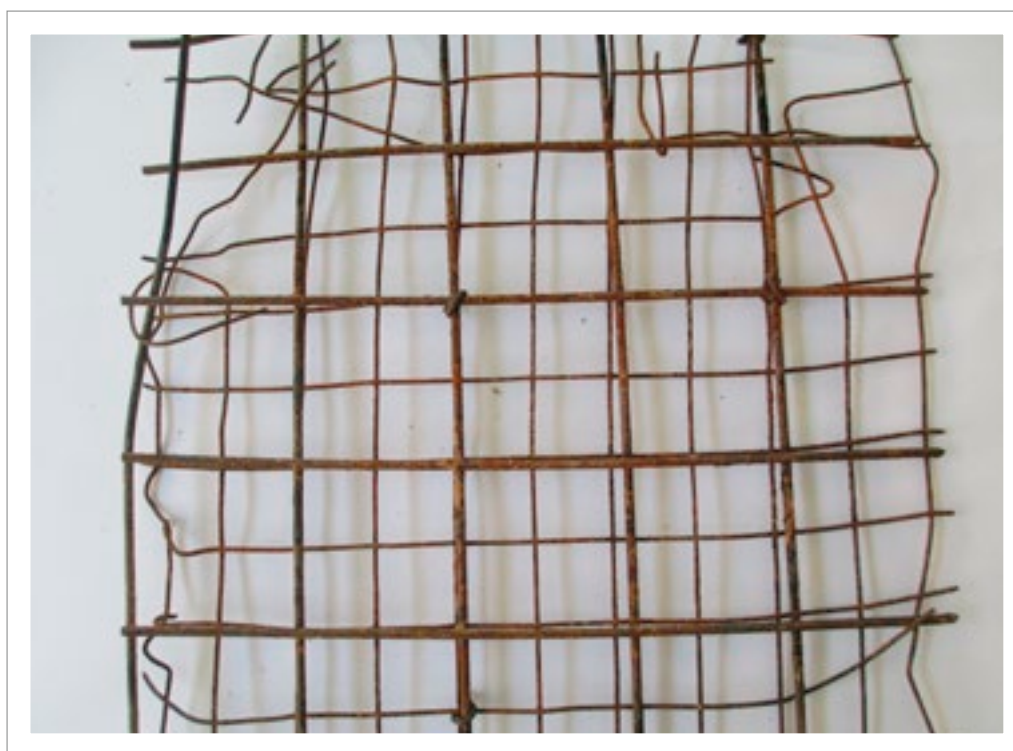
Figure 21. A rusty wire rack

Have a lesson preparation discussion to agree on the approach you are going to take. Consider these issues:

- How will you arrange for your pupils to listen to the story?
- How will you organise your class to talk about the story?
- What questions could you ask the pupils about the story?
- List all the materials they need for this lesson.
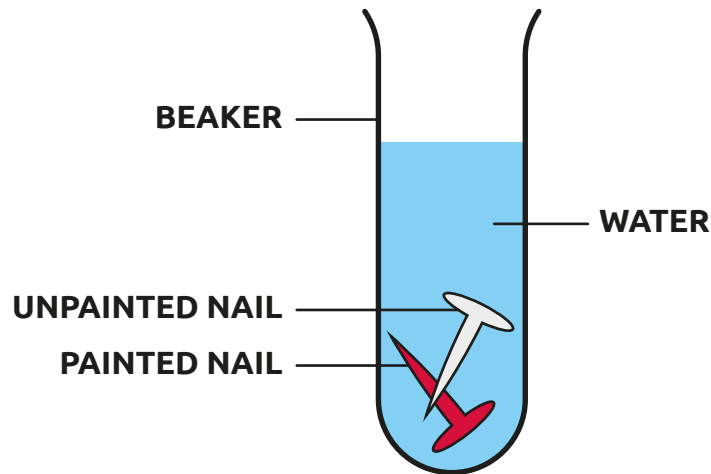
Figure 22. A beaker with two nails

T1-2 S 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-2 S 4 Reflect Together

Did Storytelling Help to Relate the Scientific Concept to Real Life?

With your student teacher colleagues, reflect on how the lessons went. Consider the following questions:

- What impact did you think the story had on the pupils?
- Did you feel comfortable coming up with good questions for your pupils?
- Did your pupils have to find or buy any materials? Were they able to find them all?
- Do you think the objective of the story was met? Do you think the story and the activities helped the pupils to grasp the scientific concept you were teaching?

In your learning journal, record the most challenging aspect of teaching this lesson. Note down what you learned about organising practical activities.

Figure 23. Student teachers engaged in story telling

Teaching Strategy 3
Songs for Learning

Using songs in the classroom, as with the other Creative Approaches, can be fun and motivating for everybody, adding additional interesting elements for you and your pupils.

This teaching strategy is a little different from the other parts of Creative Approaches. Songs are a little harder for you to use as a tutor with your pupils, to actually achieve specific learning objectives. In school, it is a lot easier to find songs that meet certain learning objectives (such as practising vocabulary or counting). In college, this is harder, though not impossible. For instance, you could chose songs that highlight specific social or environmental issues. Also, songs can be very useful when learning foreign languages.

Songs can be sung together by the whole class. Depending on the structure of the song, the class could be divided into groups, and asking the groups to sing separate parts. Singing together has a bonding effect, and makes everybody contribute.

The rhyme and rhythm in songs make them easy to remember. Songs are especially useful in the language classroom as they can help learners in their retention of language. The melody, rhythm and repetition can encourage retention: these elements collaborate together as an effective teaching and learning tool. Indeed, you may find that pupils, who have language and/or learning difficulties particularly benefit from the introduction of music into the classroom.

Figure 24. Student teachers sing a song

It is important that the songs are sung in an active way, and that they relate to the content you are intending to teach. While some songs could be used because they help pupils practise (e.g. teaching sentences or counting), other songs might be used as an introduction to topics for discussion, introducing pupils to current issues. Songs can also illustrate different cultures and raise their cultural awareness. However, care should be exercised in choosing songs that are appropriate. Some songs may promote gender stereotypes, and be derogatory towards certain ethnic groups.

As with many activities, you might consider taking your class outside for singing a song. You may find that this helps the pupils energise, and that they may prefer this as an alternative to a more formal lesson delivery indoors.

The following pages contain a number of examples for using songs, with a focus on English, mathematics and science. Each example is followed by a number of tasks supporting you in planning an activity in your classroom. Once you have planned an activity, do make sure that you actually try it out in the classroom. Once you have taught the activity, there are questions for reflection to explore with a colleague.

Teaching Strategy 3
Songs for English Language

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching English in Basic Schools (FDC 211) Primary: Unit 1 Listening to songs, poems, rhymes; Unit 1 Listening and Speaking - Songs
Learning Outcomes for Student Teachers	In this teaching strategy, you will develop your skills in order to • use songs in the classroom to develop pupils' fluency skills; • develop pupils' acting skills; • gather songs that can be used to teach language; • identify appropriate activities to develop the listening and speaking skills; • do a demonstration lesson on how to teach songs at the basic school.

T1-3 E 1 Example

Modelling, Discussion, Listening: Use of Songs

Using songs in your school classroom can be very beneficial. Here are a number of examples:

Example 1: When I Was a Barber

Here is an example of a song:

> **When I was a Barber**
> When I was a barber,
> A barber, a barber,
> When I was a barber,
> A barber was I.
> It was this way and that way,
> And this way and that way,
> When I was a barber,
> A barber was I.
>
> (Traditional)

In the classroom, when singing this song, you would sing this twice, and then substitute 'barber,' with 'teacher', 'farmer,' 'tailor,' 'cobbler'. Now, read through the lesson plan below and discuss the questions that follow.

Lesson Plan: When I was a barber.

Part 1: Before singing the song.

- Ask the student teachers to mention some jobs they know. Use pictures of people in different jobs as cues to guide them.
- Write the answers on the board and ask pupils to mime how each of these people practise their professions.
- Sing the song once using 'barber'.
- Before you sing again, ask student teachers to listen for the job.

Part 2: Singing the song.

- Sing again and elicit **barber**.
- Now this time listen for ALL the different jobs. Either write them down when you hear them **or** do the action.
- Sing the song with actions.
- Stop and give them time to write down or show an action. Elicit some answers e.g. Who was I singing about? What do they do? A **barber** (do action), a **teacher** (point to self), a **farmer** (do action), a **tailor** (do action), a **cobbler** (do action).
- Sing one more time with your student teachers using all the jobs.

Part 3: After singing the song.

- Present the song on a chart on the board with blank spaces for the **jobs**.
- Pupils first work in pairs to fill in the names. Randomly ask student teachers to come and fill in the gaps.
- Then let them add some more by choosing a different profession from the one in the song.

Student Teacher Discussion

What do you think about that use of songs? Discuss it with your fellow student teachers. Can you think of other songs that they could use to teach different language points or curriculum areas?

Example 2: Using Songs to Generate Discussion

Read the case study below:

> Ms. Kwao teaches at Amosima D/A Basic school class 6. She observes that most of the pupils in the school do not exhibit the moral values they sing about in the national anthem. The children engage in unpatriotic activities such as littering the compound with papers

and empty water sachets. Most of them are rude and cheat in examinations. However she notices that during sporting activities the pupils were quick to compose interesting, short songs to cheer their team in the school. The teacher decided to help raise awareness of some important moral values and to help the pupils develop their creative abilities. Ms. Kwao set out to use the national anthem, a song the pupils sing every day at morning assembly.

National Anthem

God bless our homeland Ghana

And make our nation great and strong

Bold to defend forever the cause of freedom and of right

Fill our hearts with true humility make us cherish fearless honesty

And help us to resist oppressors' will

With all our might and mind forevermore

How could you use this anecdote with your pupils? Can you think of other songs that could generate discussion about topical issues?

Example 3: Using Songs as a Stimulus for Creative Activities

Read the following scenario: and discuss the following with your peers.

Freda teaches at Akosombo Community JHS. One day, as she approached her class JHS 1, she hears clapping and cheering coming from her classroom. She slowly walks to a corner and stands for 15 minutes to watch what is going on. To her surprise she sees two of her students holding improvised microphones reciting something to the class. Another group has made musical instruments from anything available on desks to pens and pencils.

Freda realises they are making rap music. She listens and hears something poetic. It has a strong rhythm and sometimes the lines rhyme at the ends. She realises it could be a great idea to introduce a literature lesson in poetry to develop listening and reading skills.

As she enters the class, she begins to cheer and clap too. She pats Nartey on the back and congratulates him. She asks him to do it again while she writes the words of the music on the board. She uses brainstorming to get the people to come out with the issues in the song. Freda then gets them to start a discussion. Another surprise. Amina, who seldom speaks in class, becomes active and contributes to the discussion. They also talk about rhyming words and rhythm. Before the lesson ends, they agree to write similar raps and have a class competition.

How could you use this anecdote with your pupils? What tasks might you give them to reflect or plan? How would you guide the class to choose interesting topics for their rap songs? For instance, how will you help those that find rap difficult to enjoy the lesson?

Example 4: Using Songs as a Listening Activity

Here is an example of how to use songs to improve listening skills.

Ordering/rearranging of jumbled pictures. Prepare a set of 8 pictures relating to the **action verbs** of the song. Keep them simple ("stick pictures"). Prepare 5 or 6 sets so you can give them to groups of 6-8 pupils. Ask the pupils to **first** guess the order. Then explain you will sing the song/rhyme and they will check/change their order. Give the pupils a set of pictures all mixed up. The pupils listen to the rhyme and put the pictures in the right order.

> **The Farmer Sows the Seeds**
>
> The farmer sows the seeds, the farmer sows the seeds
>
> Corn, beans and millet-o, the farmer sows the seeds.
>
> The wind begins to blow, the wind begins to blow
>
> Corn, beans and millet-o, the wind begins to blow.
>
> The rain begins to fall, the rain begins to fall
>
> Corn, beans and millet-o, the rain begins to fall.
>
> The sun begins to shine, the sun begins to shine
>
> Corn, beans and millet-o, the sun begins to shine.
>
> The wheat begins to grow, the wheat begins to grow
>
> Corn, beans and millet-o, the wheat begins to grow.
>
> The farmer cuts the grain, the farmer cuts the grain
>
> Corn, beans and millet-o, the farmer cuts the grain.
>
> The farmer binds the sheaves, the farmer binds the sheaves
>
> Corn, beans and millet-o, the farmer binds the sheaves.
>
> And now the harvest's in, and now the harvest's in
>
> Corn, beans and millet-o, and now the harvest's in.
>
> (Traditional)

T1-3 E 2 Plan and Practise Together

Songs for English Language

Look at the different ways in which songs have been used in the examples above:

- to generate discussion;

- as a stimulus for creative activities;

- to practise listening skills.

Now plan to use a song in class. To help you plan, identify one song that might be suitable to use for each of the categories above. With your fellow student teachers, discuss which of the techniques you could use in a lesson you have to teach next week.

Now, think of a song, and plan how you will integrate your song into your lesson. In particular, think about what activities you will do before the song, during the song, and after the song. Make notes in your learning journal to record your thoughts. You can use the activity plan template found in the appendix. If there is time, you may want to practise the song with colleagues during the session, and discuss any problems you anticipate.

T1-3 E 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-3 E 4 Reflect Together

Songs for English Language

Now that you have taught the lesson activity, reflect on how it went. If at all possible, do the reflection together with a colleague who has also tried the activity. In your reflection, consider the following questions:

1. When is it appropriate to use songs with pupils?

2. What are some of the aspects of using songs that pupils need to be aware of?

3. Discuss in pairs how you can use songs (e.g. rap songs) to encourage your pupils to participate in your class.

Now that you have studied a few teaching strategies in "Creative Approaches", reflect on the following:

1. In the examples you have studied in Creative Approaches, how have the skills been integrated e.g. speaking, listening, reading and writing?

2. How do Creative Approaches in the classroom help us and pupils learn and develop?

3. Think of all the Creative Approaches that you have learnt about in this unit. Which ones have you used/tried out? Which ones were most successful and why? What lessons have you learnt from using them e.g. in terms of involving all your pupils (girls and boys), classroom management and so on. Write them here:

Teaching/learning area	Lesson(s) learnt
Involving every pupil in my class	
Giving instructions	
Work arrangements	
Monitoring my pupils	

Figure 25. Tutors practising together

Teaching Strategy 3
Songs for Mathematics Learning

Theme	Creative Approaches
Link to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Basic School Mathematics (PFC 222)
Learning Outcomes for Pupils	You will understand how song can be used effectively to teach basic concepts.

T1-3 M 1 Example

Using Songs to Introduce Counting Numbers

Singing can be accompanied by actions, body movements, and moving around the classroom. For example, when singing Song 1 (below), pupils could hold up fingers corresponding to the counting numbers as they sing. The teachers could hold up the appropriate numbers on flash cards in order to familiarise the pupils with the numerals.

Once the song has been sung a few times, a class could be organised in such a way that the girls sing the first two lines, the boys sing the second two lines and the whole class sings the final four lines. Or the whole class sings the first four lines and then the girls and boys alternate the last four lines as question and answer – girls sing line 5, boys sing line 6, girls sing line 7, boys sing line 8.

Similarly in Song 2, when pupils sing each number, they can hold up the appropriate number of fingers or a teacher could display the appropriate numbers on flash cards and/or hold up the appropriate number of flowers.

Song 1: One, Two, Three, Four, Five

One, two, three, four, five,

Once I caught a fish alive.

Six, seven, eight, nine, ten,

Then, I let it go, again.

Why did you let it go?

Because it bit my finger so.

Which finger did it bite?

This little finger on the right.

Song 2: One Pot of Water

The first line of the song should be repeated for 1 up to 9.

I poured one pot of water and one flower blossomed.

I poured two pots of water and two flowers blossomed

. . . .

I poured nine pots of water and nine flowers blossomed.

T1-3 M 2 Plan and Practise Together

Using Songs in the Classroom

Make yourself familiar with suitable rhymes or songs prior to using them in your teaching. Before attempting to use these rhymes with your pupils, it would be a good idea to try out some of the activities as a teacher. It would be even better if you could try them out with your colleagues as that will help you when you reflect on the experiences. Trying them for yourself will mean you get insights into a learner's experiences which can, in turn, influence your teaching and your experiences as a teacher.

Plan in groups. You can use the activity plan template found in the appendix. Each group identifies at least one topic from the primary or JHS syllabus, which can be taught with the help of a familiar rhyme or song. It is important that, where possible, the groups include examples of appropriate rhymes or songs in the local dialect. Discuss how you would use the rhymes or songs to teach about the selected topics. Compile a list of suggested syllabus topics and associated songs and rhymes that can be used in the classroom, and make a note in your learning journal.

Do make sure that you have noted down everything you need to remember for your lesson in your activity plan. You could write a list of the songs you intend to use, with a space alongside each where you should comment on how effective each song was. Add your comments immediately after the lesson.

If there is time, you may want to practise the song with colleagues during the session, and discuss any problems you anticipate.

T1-3 M 3 Teach

It is important for your professional learning that you actually teach the activity you have planned. Make sure you have your own activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-3 M 4 Reflect Together

Are Songs and Rhymes useful in Teaching Mathematics?

When you do such an exercise with your pupils, it is important as a teacher to reflect afterwards on what went well and what went less well. After you have taught the lesson activity, it is now time to reflect on how it went. If at all possible, do the reflection together with a colleague who has also tried the activity.

Reflection task 1: Encouraging the use of rhymes and songs. Discuss your experience of teaching using a songs. How did you pupils learn? Discuss with colleagues the role that rhymes and songs can play in developing mathematical concepts and understanding. Do colleagues agree that this particular teaching approach will give a pupil the sense that pupils are contributing to the lesson?

Discuss in your teacher group how pupils can be encouraged to be more resourceful in finding ways of using rhymes or songs to make mathematics interesting and enjoyable.

In your learning journal, note down what the most challenging aspect of teaching using songs was. Also note down what it was that you have learnt from this unit that was most effective in improving your teaching.

Figure 26. Student teachers practise songs

Teaching Strategy 3
Songs for Science Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Science (FDC) JHS Integrated Science Syllabus (2012) JHS 1 Section 6 Interactions of Matter Unit 1 Ecosystem
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use songs to raise pupil sensitivity to ecosystem and habitat ideas.

T1-3 S 1 Example

Using Songs to Enrich Learning about Habitats

Ms Adamu, a new teacher teacher at Koforidua Primary School, is teaching a science lesson on ecosystems. She uses content-rich songs to enhance pupils' understanding of the concepts of ecosystem, habitat and adaptation. She develops content-based vocabulary for the concepts. She uses a song as a sense-making experience to help the pupils build a conceptual understanding of 'ecosystem'. The song is also a mnemonic device for remembering key concepts. These are 'environment', 'community', 'food chain', 'food web', 'prey' and 'predators'. She wants to develop the pupils' idea of 'ecosystem' as a special home of plants and animals.

Here is what she did. She initially took the class out for a nature walk in the area close to the college. She also put some good environment pictures on the classroom notice board (see example below).

Figure 27. Forest ecosystem

Composing the Song

She then asked her pupils to think of any song they know that talks about plants and animals. She has composed a song about plants and animals and where they live (Habitat). She asked all who have thought of their song to get ready to sing it to the class. She called four pupils to sing their songs to the class. Ms Adamu complimented the pupils for singing their songs so well. Next she asked them to sit and listen to the song she has created about plants and animals. She wrote five questions on the chalkboard and asked pupils to think about them as she sang the song.

A habitat is a place to live

A habitat is a place that gives

A habitat is a special home

to plants and animals - their very own

Chorus

Oh yes, a habitat

Oh yes, a habitat

Oh yes, a habitat

 . . . a habitat

A habitat is forest with animals and plants. . .

Chorus

A habitat is a beach with sand...

Chorus

A habitat is a mountain peak...

Chorus

Habitat . . . habitat . . . habitat . . .

HABITAT!! (**shout!**)

Using the Song

During the song Ms Adamu moved around the classroom as the pupils sang. She identified those who were not participating well and helped them to participate in the activity. She used movement and gestures to enliven the song and help convey meaning. For example, she asked pupils to produce a roaring sound when singing about the lion.

After singing the song, she discussed the questions she had written on the board. Here is an excerpt from the discussion:

Ms Adamu: Where do plants and animals live?

Pupils: Forest, zoo, beach, mountain, house, savannah, water.

Ms Adamu: That's great! But what can you say about zoo and house as habitats?

A pupil: They are man-made.

She asked a series of questions in relation to habitats and ecosystem based on the song. Ms Adamu was very happy about the enthusiasm with which the pupils participated in the lesson. "It was an interesting lesson for me and my pupils". The pupils left the class singing the song about habitat.

T1-3 S 2 Plan and Practise Together

Using the 'Habitat' Song in School

Together with student teacher colleagues, discuss Ms Adamu's lesson. Prepare to take a lesson with your pupils using song. Use the activity plan in the appendix to help you.

Together with student teacher colleagues, identify songs that are appropriate for the teaching of the concept 'ecosystem' to your pupils. Follow these steps:

- Identify one of your favourite songs. Can you find a song, which might be appropriate for learning about the ecosystem?

- Use some illustrations of the environment as stimuli for creating the lyrics for a song about an aspect of the ecosystem. If necessary, you can use the song that Ms Adamu used.

- You may not be a confident singer yourself. However, one or two of your colleagues may be good singers. Also, identify pupils who can help you.

With your student teacher colleagues, consider these five questions that can motivate the pupils to sing a song:

- Where do animals live?

- How do animals like the lion and tiger get their food?

- What would happen to human beings if there were no plants?

- What factors influence the choice of a place as a habitat?

- Mention five ways of protecting endangered species.

Work out how you will arrange the pupils to perform the song. Consider organising the class in groups to talk about the song. Gather the resources you need for the lesson.

You may not have the opportunity to use this particular song about the ecosystem. If not, think about the topic you are doing with your pupils. Consider whether you can use a song to bring the topic to life. This might have good potential for a song. If there is time, you may want to practise the song with colleagues during the session, and discuss any problems you anticipate.

T1-3 S 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In

particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-3 S 4 Reflect Together

Did the Pupils Enjoy Creating a Song about the Ecosystem?

Now that you have used a song in a lesson, reflect on how it went. With a group of student teacher colleagues, use these questions to review your lesson:

- Did the pupils enjoy singing songs for this lesson?
- How difficult was it for them to learn the melody of the song?
- Did they manage to find an appropriate music file on the internet?
- Was the song appropriate for the age of the pupils?
- Did the song help to focus pupils' thinking on aspects of the ecosystem?
- How did the song and gestures stimulate the pupils?
- Are there other science topics where songs can be useful?
- Would you try more songs in your college classes?

In your learning journal, record the answers to these questions. If you composed a new song for a different topic, mention it.

Figure 28. Student teachers practise songs

Teaching Strategy 4
Role-play for Learning

Role-play is an activity in which participants choose to take on a certain role that is likely to be different from their usual role. For instance, a teacher might role-play a head teacher of a school, or a pupil. For role-play, there is usually a certain scenario, which the participants act out. The scenario provides enough background information to enable participants to assume their roles. The participants speak and act in their roles, and adopt the behaviours and motives of the characters they are playing. Note that, unlike with theatre, the purpose of role-play is the individual's experience of the situation, rather than delivering a polished dramatic performance.

Role-play has a number of benefits, including

- Role-play explores real-life situations.
- Role-play develops an understanding of other people's points of view and feelings.
- Role-play promotes development of decision-making skills.
- Role-play can develop participants' confidence to speak in social situations (for example, pretending to shop in a store, providing tourists with directions to a local monument or purchasing a ticket).
- Role-play helps pupils to practise new languages.
- Role-play is useful for exploring complex and challenging social issues, such as conflict and conflict resolution.

Role-play can be used effectively in many subjects, but the role-play scenarios need to be chosen carefully. Often, participants need encouragement, especially when working on emotive issues.

In literature, role-play lends itself perfectly to texts. It enables pupils to 'bring to life' the characters or situations they are reading about. In comprehension and essay writing lessons, pupils can use role-play to re-enact scenes from a text, dramatise topics from literature, re-enact debates on controversial issues.

In science and mathematics, pupils can use role-play to explore and solve problems. The idea of modelling is similar to role-playing, and similar ideas can work. Examples for role-play in science and mathematics include:

- pupils play an x-y co-ordinate system (showing different locations);
- pupils play different planets in the solar system;
- pupils play different parts of an electric circuit.

It is possible to organise role-play in different ways. At times, a role-play can involve everybody in the class. Alternatively, participants can work in smaller groups, giving more speaking time to each person.

The following pages contain a selection of examples, focusing on English, mathematics and science. As for the previous teaching strategies, the example is followed by a number of planning tasks for using role-play in your classroom.

Figure 29. A tutor and student teachers prepare for role-play

Teaching Strategy 4
Role-play for English Language Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching English in Basic Schools (FDC 211) Primary: Unit 2, Storytelling for P1-3.
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use role-play in a variety of scenarios.

T1-4 E 1 Example

Role-play for English Language Learning

Read the scenario below and discuss these questions with your colleagues:

1. Why did Ms. Lamptey and Mr. Eshun decide to use role-play? What were the advantages of using role-play instead of another teaching strategy?

2. What was the role of the tstudent teacher during the role-play? What did she do?

3. Why did Ms. Lamptey ask the question after the role-play? What was she doing?

4. How would you end this class?

Here is the scenario:

Two student teachers, Ms. Lamptey and Mr. Eshun, were discussing their B3 classes. Both teachers teach English and maths and wanted to link their lessons in some way. Mr. Eshun was teaching numbers with addition and subtraction in his class and Ms Lamptey was teaching new vocabulary to do with 'food' and 'drink' in her class. They sat down together and decided that the best way of combining the two was to use role-play. So this is what they planned:

First they asked their pupils to bring any empty cartons, bags, packets, bottles from home to the classroom. This was in preparation for later time

in the week. Ms. Lamptey and Mr. Eshun would bring some real objects, such as, eggs, mango and rice.

In class Ms. Lamptey and Mr. Eshun explained to their pupils that the classroom would become a market. They asked how the classroom should be arranged. They let their pupils organise the 'market.'

The next day was the role-play, so in the English class Ms. Lamptey used the real objects and the things the pupils had brought to class to elicit the words they had been learning: eggs, rice, mango, banana, a carton of milk, a bottle of water. She then placed them in the 'market'. Next she divided her class in two. She explained, half the class will be the customer and half the class the market seller. However before she put them in pairs, she asked them to form groups to discuss their roles: imagine you are these roles; what words and sentences, questions would they use for their role. For example:

Customer: *Good morning! Please may I have some eggs / mangoes / rice / bananas.*

Market seller: *Yes of course. How many would you like? One, two, three?*

Customer: *Six eggs, 5 mangoes and 10 bananas please.*

Market seller: *Okay. Six eggs, 5 mangoes and 10 bananas.* *Customer:* *How much is that?*

Market seller: *That is 2 plus 3 plus 4, so it is 9 Cedis please.*

Customer: *9 Cedis. Here is 10 Cedis.*

Market seller: *10 Cedis minus 9 Cedis. Here is one Cedi change.*

Customer: *Thank you, bye bye*

When the pupils were ready with their roles, the teachers put them in pairs and asked them to begin. The pupils stood up and walked around and used the props. The student teachers walked around to listen to the 'customers' and 'market seller'.

Back in their classes, the student teachers gave feedback on how the pupils performed, and on the correct use of their maths and English.

T1-4 E 2 Plan and Practise Together
Role-play for English Language Learning

Look at the language role-play examples below. Decide:

1. What class you would use them with, and with which level?

2. What language point you would focus on **or** which skills?

3. How you would manage it? Think about roles, role cards.

4. How would you adapt it to your locality or region?

Role–play 1: A Ghanaian police person and a tourist. The tourist is lost in Accra. They want to go to Labadi Beach. The police person gives directions from Osu, Oxford Street.

Role-play 2: A doctor's surgery. Doctor Amma is talking to someone who has a bad cold.

Role-play 3: A jobseeker (a newly qualified teacher) and an employer (the head of a Primary School). The newly qualified teacher is looking for their first teaching post. The head is looking for an enthusiastic new teacher with fresh ideas.

Do these ideas fit a topic that you are about to teach? Think of your upcoming literature, essay or comprehension classes: Which texts lend themselves well to using role-play?

Now with your colleagues plan an activity that you will be able to teach in the coming week. You can use the activity plan template found in the appendix.

If you have time, you might like to try out what you have planned with your colleagues first, in order to refine the activity prior to trying it in the classroom.

T1-4 E 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-4 E 4 Reflect Together

Role-play for English Language Learning

Now that you have taught the lesson activity, reflect on how it went. Do the reflection as a group or together with a colleague who has also tried the activity. In your reflection, consider the following questions:

1. How would you use role-play with your pupils again? Do you think all your pupils would enjoy it? Why/why not?

2. Discuss with your fellow student teachers the advantages and possible disadvantages of using role-play. Think of the solutions too and write them in the table below:

Advantages	Disadvantages	Solutions

3. What sort of classroom management issues do you have to think carefully about when using role-play? Write down the area in the table below and how you would deal with it. Examples have been provided and **one** has been done for you.

Classroom management area	Action
Confusion over roles	**Preparing Role Cards** This is not always necessary and depends on the level of your class. It is useful to prepare role-cards which can describe the role. This helps get the pupil into character. However keep descriptions clear, short and to the point. **Preparing pupils** Give pupils time to prepare/discuss roles as a group before putting them into the role-play. This is particularly important if they are practising new language – give them time to practise in a group first and then put them into the role-play. **My role (student teacher)** In a role-play your role will be 'facilitator' – you should monitor the role-play carefully – you can take notes to feed back later, after the role-play or just listen and encourage. This will help you assess how well your pupils are doing and where some 'learning gaps' might be. Avoid asking 'the strongest' role-players to come to the front as this makes it a performance and can make other pupils feel inadequate. Give feedback to the whole class, perhaps, focusing on common errors made.
Confusing instructions	
Teacher interference	
Error correction	

4. How could you use role-play in a literature/reading comprehension/ essay writing lesson. Look through your textbooks and find examples of where role-play could be used. What are the advantages of using role-play with content?

If you are preparing a learning journal, remember to write down any specific outcomes from your reflection. Also note down what you have learnt from this unit that was most effective in improving your teacher education.

Teaching Strategy 4
Role-play for Mathematics Learning

Theme	Creative Approaches
Link to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Basic School Mathematics (PFC 222) Junior High School: Year 3, Unit 3.5, specific objective 3.5.1 calculate wages and salaries); Year 3, Unit 3.5, specific objective 3.5.4 find and explain the income tax payable on a given income).
Learning Outcomes for Student Teachers	You will be able to use role-play to teach mathematical concepts.

T1-4 M 1 Example

Using Role-play to Teach about Wages and Tax

Every year when Mr Kinto teaches about money and taxes, he finds that his Grade 3 pupils have difficulty in understanding this part of the syllabus. This year he decided to use a new approach involving role-play. Role-play is an activity in which pupils take parts in a short play. It is always popular with classes. The class is divided into small groups. Each group will act out a scenario which is linked to the curriculum content.

In this example, Mr Kinto linked the scenarios to the Junior High School syllabus Unit 3.5 "Money and Taxes". He used the unit content to create a series of different scenarios. Each scenario focuses on one or two aspects of the unit.

Figure 30. A tutor discusses role-play with student teachers

To make the role-play a little more realistic Mr Kinto allowed pupils to use desks and chairs, and other simple items, like paper money. There was no formal script but he gave each group of pupils some guidance as to what to do.

Each group was given some time to prepare and practise their performance. Mr Kinto was able to move around the classroom observing the progress of each group and provide guidance and advice where necessary.

We will just consider one scenario which Mr Kinto hoped would help pupils to understand the relationship between earning wages and paying taxes. The group of pupils consisted of:

- workers who collected their wages – they had to say that have worked so many days;
- wages clerks who paid the wages – they had to calculate the wages for each worker at the rate of GH¢20 a day;
- tax collectors who took some of the wages as tax – they had to calculate the tax due at 15% of the wages earned.
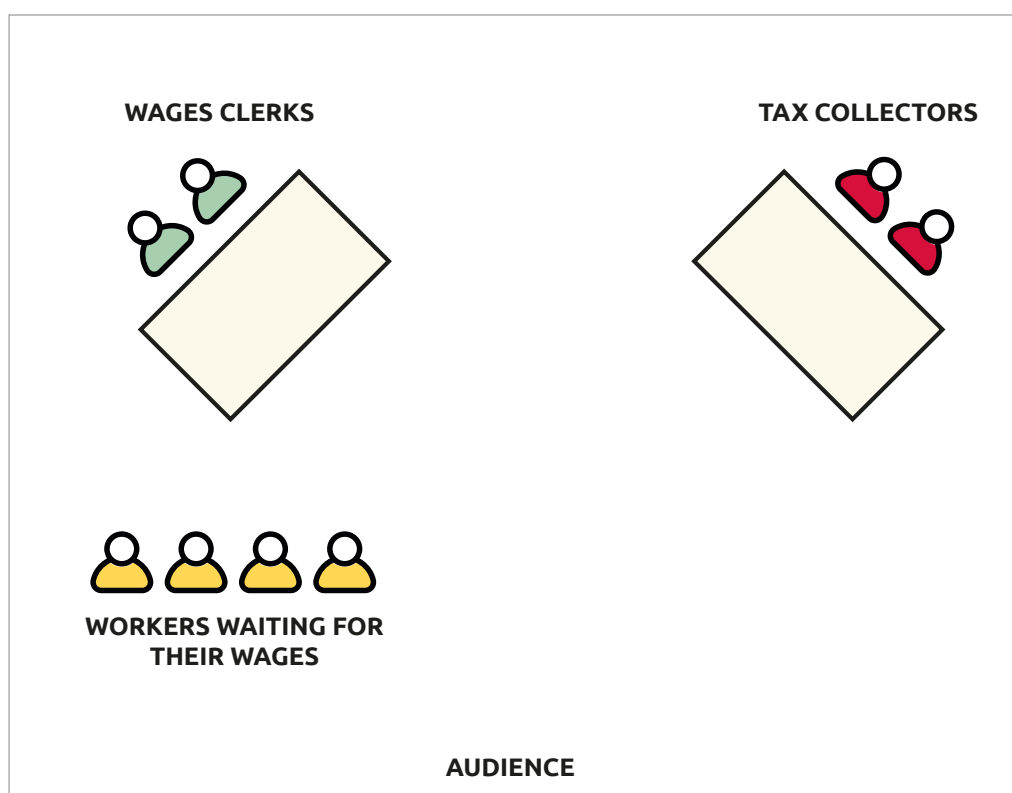
Figure 31. Possible layout for wages and taxes

This is the layout the pupils created for this role-play. Here is how the role-play proceeded:

- **Worker** (walks up to the wages clerks): *'I worked for 20 days.'*
- **Wages clerk:** *'Your pay is 20 days at the rate of GH¢20 per day which is equal to GH¢400.'*
- **Worker** (walks to the tax collectors): *'I have earned 400 Cedis'.*
- **Tax collector:** *'You must pay 15% of your wages in tax. 15% of GH¢400 is GH¢60.'*
- **Worker:** *'After paying tax I have GH¢400 take away GH¢60 equals GH¢340 remaining'.*

T1-4 M 2 Plan and Practise Together

Writing a Role-play for a Topic in Mathematics

Here are some specific objectives relating to the measurement of money:

- The pupil will be able to identify and explain various transactions and services at the bank.
- The pupil will be able to identify and explain types of insurance and calculate insurance premiums.
- The pupil will be able to calculate VAT/NIHS on goods and services.

Now plan your own role-play, for use with your pupils. If you are teaching the above topics, you can use this role-play example, otherwise work with the topic you are about to teach (refer to the Junior High School syllabus). Consider:

- What are the specific learning outcomes (in the syllabus) and how will these be achieved?
- How can a class of 40 pupils be organised so that everybody plays and active part?

If there is time, you may want to practise the role-play with colleagues during the session, and discuss any problems you anticipate. For your planning, you can use the activity plan template found in the appendix.

T1-4 M 3 Teach

It is important for your professional learning that you actually teach the activity you have planned. Please make sure you have your own activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-4 M 4 Reflect Together

How Useful is Role-play in Teaching for Mathematics?

After you have taught the lesson activity, reflect on how it went. If at all possible, do the reflection together with a colleague who has also tried the activity.

Reflection task 1: Evaluating role-play. In what ways did writing and observing the role-play provide you, as a student teacher, with a better understanding of the problems of teaching about different aspects of money?

Which issues did you become more aware of, that you believe would not have become apparent by teaching this topic in a more traditional way? Discuss this with other student teachers to find out if they are in agreement.

Reflection task 2: When can you use role-play? In your student teacher group, identify some topics that lend themselves to role-play. Discuss with colleagues what other teaching methods you could use to best complement the role-play when teaching these topics?

If you are preparing a learning journal, note down any particular problems you encountered in creating and using role-play as a teaching aid. Also note down what you have learnt from this unit that was most effective in improving your teacher training.

Teaching Strategy 4
Role-play for Science Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Science (FDC) UP Integrated Science Syllabus (2012), P6, Section 5 (Interactions of Matter), Unit 4 (HIV / AIDS).
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use role-play to develop empathy with people who live with HIV.

T1-4 S 1 Example

Using Role-play to Learn about HIV/ AIDS

Ms. Opare plans to teach the topic HIV/AIDS. She wants her pupils to develop feelings of empathy for people living with HIV. She decides to use role-play to help the pupils to appreciate what people living with HIV go through. Ms. Opare writes a short and simple script for the role-play. The script is about Kofi, Ama and their baby who became infected with HIV and how they suffered as a result of the infection. Ms. Opare narrates the script to her class and then asks volunteers from the class to role-play.

She uses the script below. In preparing the role-play, she considers the various characters appearing in the role-play, and their specific roles.

HIV/AIDS Role-play

Characters

Kofi (boyfriend of Ama) 17 years

Ama (girlfriend of Kofi) 15 years

A 'quack' doctor – Dr Taglo (unqualified)

A properly qualified doctor – Dr Rufus

Auntie Adjoa (Ama's Auntie)

Nurse – Betty Dorvlo

Scene One

Kofi and Ama share sharp instruments (simple props made of paper/card for

safety e.g. blade, safety pins, nail cutter etc.).

Ama becomes sick and needs a blood transfusion, instead of going to the hospital they go to Dr Taglo. They can't afford to pay the hospital bills as they are unemployed. Kofi donates his blood which is given to Ama. Dr Taglo did not screen the blood.

Kofi and Ama have a baby boy a year later. The baby is always weak and sick.

Scene Two (Effects)

Kofi and Ama are talking

They had dropped out of school.

They were doing menial or low-skilled jobs - like farm-hand, labourer etc. which was temporary work.

The cost of treatment for their baby was high. Maybe their baby would become an orphan in the future. They had become so depressed. They concluded that their dream of becoming doctors in future may not be realised.

Ama was experiencing intermittent bouts of illnesses, like fever, TB, etc.

Ama decided to look to Auntie Adjoa to help her take care of the baby, since he was always weak and sick.

Scene Three

Ama and Kofi are able to get into contact with Auntie Adjoa. Ama is almost at the point of death. Ama is taken to the hospital. Unfortunately she dies. The tests done revealed that she was HIV positive, although it was opportunistic infections like, TB, fever, shingles, etc. that actually killed her. Auntie Adjoa decides to take care of the baby.

Auntie Adjoa is a trained nurse. She and Dr Rufus counsel Kofi. They encourage him to find out his HIV status. During the counselling session, Kofi mentions that Ama had been with her former boyfriend before they met. During that period, she got the virus. Kofi learns how to live a positive life. Kofi also tested positive. He also got to know a lot about HIV and AIDS. Auntie Adjoa and Dr Rufus told Kofi the range of behaviours to prevent contracting the virus:

Abstinence.

Being mutually faithful (for married couples).

Correct and consistent use of condom.

Delaying sex until marriage.

Not sharing sharp instruments with others.

T1-4 S 2 Plan and Practise Together

Including Role-play in School

Together with student teacher colleagues, discuss Ms Opare's role-play lesson.

Considering the topics that you are about to teach, is that lesson useful to you? If not, can you think of another topic that would lend itself to role-play? As a group, prepare to use a role-play idea and script with pupils in your school.

For instance, for the sub-topic 'energy transformations', a role-play may help with the idea of a form of energy changing into another form. In a vehicle engine, the chemical energy of the fuel changes into heat energy when the fuel burns in the cylinder. The heat energy causes the gas to expand. This force moves the piston. This is motion energy. The motion energy transfers to the axle - the wheels turn. Pupils might be able to play the roles of 'energy forms' and depict how one form transforms into another form. You can use the activity plan template found in the appendix.

Figure 32. A tutor discusses role-play with her student teachers

Note the topic for the role-play that you are going to do in your learning journal.

Here are some important considerations:

- Identify the pupils who will play the characters.
- Organise the space for the role-play. Will you need to have costumes or props?
- Ask the pupils to gather the materials they need, and consider how the set for the role-play will be arranged.

Learning from the Role-play

It is important to do role-play with the purpose of learning something. Brainstorm a range of questions that would help your pupils to learn lessons about the topic that you have planned.

Here are some examples and tasks from our example role-play:

- How did Ama acquire HIV?
- Did Kofi get the virus from Ama? If Yes, explain the possible ways he might have contracted it.
- Why was the baby so sick and weak?
- From the story, what were some of the bad things that happened to Kofi and Ama as a result of having a baby at a young age and Ama getting sick so often?
- Could Ama have prolonged her life? If yes, explain how?
- Explain why Kofi needed to know about his HIV status.
- Give four ways in which Kofi could have prevented himself from contracting the virus.
- Describe ways in which Kofi could prevent infecting others with HIV, now that Kofi and his baby boy are living with HIV.
- Why is it necessary for blood to be checked before other people receive it?

Having considered these questions, discuss similar questions for the role-play that you have planned.

If there is time, you may want to practise the role-play with colleagues during the session, and discuss any problems you anticipate.

T1-4 S 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-4 S 4 Reflect Together

Did the Pupils Use Role-play Effectively?

Now that you have taught the lesson activity, reflect on how it went. With your student teacher colleagues, use these questions to consider how effective the role-play was for the topic that you chose:

1. Were the roles allocated well?

2. Did the pupils play their roles with realism?

3. Did the pupils increase their understanding of the challenges (similar to the challenges faced by people living with HIV/AIDS from our example)?

4. How did the role-play help to do this?

5. For which other science topics would role-play be an effective strategy?

6. Do you think this helped the pupils to appreciate the power of role-play?

In your learning journal, record the most challenging aspect of handling the role play.

Teaching Strategy 5
Modelling for Learning

Modelling involves creating a representation of a real-world object, a complex idea or of a system. A simple example is a model of a building, made out of cardboard.

Figure 33. A model of a boat from the African West Coast

Another example is a model of an atom made out of beads or seeds, or whole molecules made with beads joined by pieces of cardboard or wire. Models (and modelling) are a useful tool to assist learning and understanding. If a pupil has a tangible model to interact with, this allows her to visualize an abstract idea. Some systems are hard to observe directly. An example is the electrical circuit. Electricity can be measured. However, pupils sometimes find it difficult to develop an understanding of what is going on in a circuit. In a physical model of an electrical circuit, bottle tops might act as electrons. Pupils could pass them around, to depict the movement of electrons. They can observe such a model and manipulate it.

Figure 34. A simple model of an atom

Purposes and Benefits of Models

Some purposes of using models include

- capturing a particular aspect of an object or process, in order to simplify it;
- introducing ideas and concepts;
- introducing pupils to important terms;
- recreating microscopic or atomic-level processes on an everyday scale;
- creating representations of large-scale industrial systems;
- visualising complex processes or abstract ideas.

Instead of just creating written outputs, pupils can also make models. Like a written text, a pupil-produced model can demonstrate understanding. Making models enables pupils to engage with mathematics and science topics in a different way. This might help to interest pupils in topics that they were previously not interested in.

Classrooms in colleges sometimes are resource-poor learning environments. Displaying models is a good way of making classroom spaces more interesting, giving pupils a sense of achievement, thus taking ownership and pride in their work.

Building Models

Effective model building requires creativity, some craft skills and manual dexterity. "Making" is an important way of expressing and checking on understanding. It is an important form of learning. Building models usually requires materials and tools, which needs planning. The necessary materials and tools mean that there is sometimes a cost but with ingenuity many resources can be found for free. Waste items such as plastic bottles, plastic bags, food tins, pieces of plastic, metal, rubber, cardboard, and bits of old machines are all useful resources for model making. Using tools means thinking about safety, following school regulations and making pupils aware of what to do in the event of an accident.

The following pages contain a selection of examples, focusing on mathematics and science. Some more ideas that can be adapted for modelling (including for English) are found in the teaching strategy on role-play. As before, there are planning tasks, for concrete classroom activities. Make sure that you try to build the model yourself, so that you can develop a sense of the purpose of the activity, and know how to carry it out in the classroom.

Figure 35. Engineers can test buildings by making models

Teaching Strategy 5
Modelling for Mathematics Learning

| Theme	Creative Approaches
Link to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Basic School Mathematics (PFC 222)
Learning Outcomes for Student Teachers	You will be able to use modelling to reinforce concepts and provide pupils with an opportunity to demonstrate manual skills and artistic flair.

T1-5 M 1 Example

Creating a Model of the College Compound and Buildings

The goal of this example is to show how is to create a model of the school compound showing the approximate positions of the main buildings. It provides an opportunity for group work in which each group contributes to a final product.

Modelling provides an ideal way of introducing concepts such as ratios and scale, and provides learners with opportunities to apply them in an interesting way.

In the following example, we are not aiming to create an exact scale model, requiring careful measurement. It is fine to create a rough model, using approximate distances and heights.
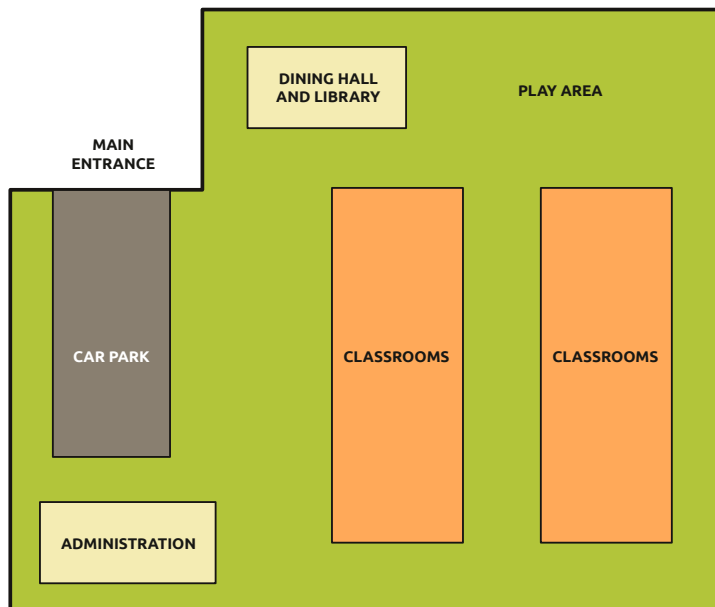
Figure 36. Example outline of a compound

The pupils were divided into six groups. Each group was given a specific task, as follows:

- Measure the overall dimensions of the compound. (A measuring tape was not available so they did this in paces.) Establish the approximate position of the main buildings to the perimeter and to each other, and draw an outline of the compound. (Groups 1 and 2.)

- Find or estimate the approximate dimensions of the main buildings. Construct the main buildings to approximate scale using cardboard boxes (modifying size and shape as necessary), or other materials. Paint the model to make it look more realistic. (Groups 4-6; each allocated a specific building.)
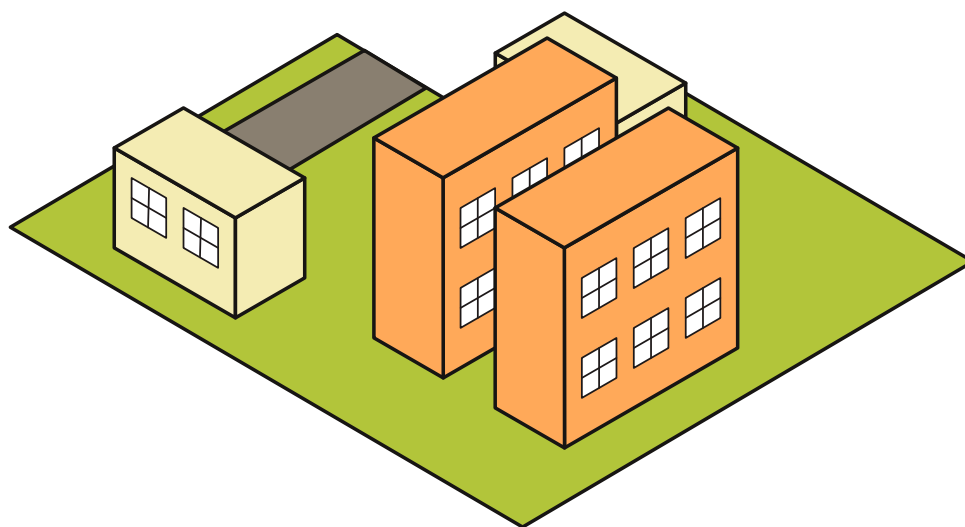
Figure 37. Model of the compound

T1-5 M 2 Plan and Practise Together

Modelling to Introduce Ratio and Scale

Prepare a lesson in which pupils will build an approximate scale model, similar to the activity described in the example. You can use the activity plan template found in the appendix. Here are some ideas you might use for your lesson. The first two involve drawing a 2-dimensional map while the remaining three involve creating a 3-dimensional model.

1. The position of the school relative to surrounding towns and the principal roads between them.

2. The layout of the countryside and roads in the area surrounding the school.

3. The school and the principal buildings surrounding it such as churches, the police station, shops, the community centre, the post office etc. The buildings can be modelled using boxes of suitable sizes and shapes.

4. An imaginary classroom to be equipped with a given number of desks, cupboards etc. all of given dimensions. Small boxes of suitable sizes are used to represent the furniture. Pupils must design a layout that makes best use of the available space.

5. A garden of given dimensions to be laid out with a variety of features such as paths, a pond, trees, bushes, seats, rocks etc. Features are modelled from suitable materials. Pupils must design a garden that is both functional and attractive in appearance.

For some of the suggested lesson plans pupils can work individually or in small groups. For others, they should be divided into groups and each group should be expected to make a contribution to a final model.

Leave sufficient space on your lesson plan to add comments about aspects of the lesson that went well and others that were problematical, such as the time taken to gather measurements and data, or the availability of suitable materials to construct models. Add your comments immediately after the lesson.

If there is time, you may want to practise building the model with colleagues during the session, and discuss any problems you anticipate.

T1-5 M 3 Teach

It is important for your professional learning that you actually teach the activity you have planned. Please make sure you have your own activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-5 M 4 Reflect Together
Modelling for Mathematics Learning

After you have taught the lesson activity, reflect on how it went. If at all possible, do the reflection together with a colleague who has also tried the activity.

Reflection task 1: Was making a model well received? How was the lesson received by pupils? Did they enjoy it as a welcome alternative to the more traditional sitting at their desks being taught and taking notes? Discuss with colleagues the logistical difficulties that pupils are likely to face when making use of modelling as an approach to teaching. Compile some tips on preparing for practical sessions that can be passed on to them.

Reflection task 2: Time required for making models. Did the modelling activity take a long time to complete? Teachers sometimes shy away from practical activities like modelling because they believe that what is achieved educationally is a poor return for the time and effort required by them. Discuss this with colleagues and identify some positive advantages of practical activities.

Reflection task 3: Providing clear instructions. It is often said in teaching that a good diagram is worth a paragraph of text. One way of making a practical activity run smoothly is to provide carefully worded and well-illustrated instructions.

Discuss with colleagues how pupils can be made aware of the advantages of diagrams in their teaching and how to use them to greatest effect both in the context of practical activities and elsewhere.

If you are preparing a learning journal, note down what the most challenging aspect of modelling as a teaching strategy was. Also note down what you have learnt from this unit that was most effective in improving your teacher education programmes.

Teaching Strategy 5
Modelling for Science Learning

Theme	Creative Approaches
Links to Syllabus	Principles and Practice of Education (EPS 111) Principles and Methods of Teaching in Basic Schools (EPS 211) Methods of Teaching Science (FDC) Junior High School: Integrated Science, Year 2 (atoms).
Learning Outcomes for Student Teachers	By the end of the session, you will be able to use modelling skills as a pedagogical tool.

T1-5 S 1 Example

Making a Model of an Atom

A student teacher at a Junior High School wants her Year 2 pupils to grasp the notion of an atom as a collection of pieces of matter, constantly moving in 3D space, a little bit like the Solar System. Typically, atoms are represented as 2D diagrams. It gives a picture of an atom as a 'flat' set of concentric circles. The student teacher wants to help the pupils to build the concept of the atom as a collection of pieces of matter whose pieces are in 3D space. She feels that the pupils need to make a model of the atom. The model is concerned with presenting the key ideas on the structure of the atom.

Building the Model

Before the pupils can build their model, they will need to know how many protons, neutrons and electrons the atom has. They decide on the atomic number of the atom they will model. They research how many electrons can be in shell 1, in shell 2, and in shell 3, etc.

The model in the picture below has two shells.

Figure 38. Model of an atom

Shell 1 of this atom has the maximum of two electrons. This atom has six electrons in shell 2 (the maximum for any shell 2 is eight electrons). So, there are eight electrons in the shells of this atom. The element is Oxygen. The Atomic Number is 8. So, there are eight protons in the nucleus, and eight neutrons in the nucleus. Each group will need twenty-four balls or beads to make this model. Eight of them are red (for the electrons). Eight of them are green (for the neutrons). Eight of them are blue (for the protons).

The student teacher presents the process of making the model to her pupils.

Materials

Small round objects (such as beads or balls) of three different colours. Gather three times as many balls/beads as the atomic number. Use one colour for the protons, one for the neutrons and one for the electrons.

String, cardboard large enough to accommodate the model, adhesive material.

How to make the model

Build a group of balls/beads together to represent a collection of protons and neutrons. This is the nucleus. Try to arrange them in an alternating pattern.

Glue the nucleus to the centre of the cardboard.

Determine how many rings you need for the electrons. Starting from the innermost ring, you can have up to two electrons in the first ring, up to eight in the second ring, up to 18 in the third ring and up to 32 in the fourth ring.

Arrange the string in circles around the nucleus.

Apply a few drops of glue to each electron bead/ball.

Glue the electrons on the rings, spacing them evenly. Make sure you don't exceed each ring's maximum number of electrons.

T1-5 S 2 Plan and Practise Together

Helping College Pupils to Make a Model of an Atom

With your student teacher colleagues, discuss the process of making the model of the atom. Will you be able to use this example in your own lessons? If not, what other topics that you are about to teach will lend themselves to modelling? Prepare a model-making lesson in your own school science lesson. You can use the activity plan template found in the appendix.

Use a double science period for the lesson, so that your pupils have enough time to make the model. Discuss with student teacher colleagues the materials that pupils will need to collect so that they can build a model. If there is time, you may want to practise building the model with colleagues, and discuss any problems you anticipate.

Pupils Making Models

Decide with your colleagues how you will build this model. Decide on the materials you will try out. Share the tasks of finding the resources you need. As a student teacher, how will you help your pupils?

You need to organise the pupils to assemble the resources. They should work in groups to make the model. Some important considerations are:

- What materials were used to make the model above?
- Identify things that are good about this model. Identify things that are not so good about it.
- Can you improve on this? Suggest what you could use to improve it.

Prepare questions to ask when using the model with your pupils.

T1-5 S 3 Teach

It is important for your professional learning that you actually teach the activity that you have planned. Please make sure that you have your activity plan available when you teach. Also make sure that you note down any issues that arose during the lesson immediately after you have taught. In particular, remember to fill in your observations section of the activity plan immediately after you have taught.

T1-5 S 4 Reflect Together
Modelling for Science Learning

Now that you have taught the lesson activity, reflect on how it went. You guided pupils on how to make the model in a lesson (or a series of lessons). Share the experiences of guiding and supervising the pupils in the making of the model. Here are some lead questions:

- Do you think your instructions were clear?

- Did the pupils manage to make the model?

- How can you encourage all pupils to participate actively? Were there pupils who did not participate?

- Were there any pupils who did not collect resources?

- Did you note the problems that pupils encountered?

- What did you do to help them succeed in the construction of the model?

- What questions did you use to probe your pupils' understanding?

- In what way did the model help your pupils to extend their understanding?

- Did you modify the task in any way? If so, what was your reason for doing so?

In your learning journal, record the impact you think the model had on pupils' understanding. What is a key aspect of using a model to help in concept building?

Figure 39. Another model of an atom

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T1-5

Africa, West Coast, boat

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Kinematically equivalent building models on a shake-table.jpg

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Aminata Pafadnam

> https://www.flickr.com/photos/53871588@N05/6325296007/in/photostream
>
> Aminata Pafadnam is 11 years old and well placed to be a girl and attending school in Burkina Faso. She is second to top in her class and would like to be a school teacher when she grows up.
>
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Open Educational Resources

Some of our text (especially the teaching strategy overviews) are based on Open Educational Resources from OER4Schools (www.oer4schools.org), available under Creative Commons Attribution-ShareAlike 4.0; TESS-India (www.tess-india.edu.in) and TESSA (www.tessafrica.net), available under Creative Commons Attribution-ShareAlike 3.0.

Graphic Design

Graphic design and illustrations by Steven Bannister. Jamie McKee supported the development of the graphic design process, and prepared our Word documents for InDesign.

Font Ubuntu http://font.ubuntu.com/, http://font.ubuntu.com/licence/ Ubuntu font licence

Photography

We would like to thank the students and tutors at OLA college for demonstrating activities and giving us permission to take the photographs.

Production Team

This book was produced by Björn Haßler, Helen Drinan, Freda Quao, Regina Mensah, Derek McMonagle, Douglas Agyei, Michael Amppiah, Mike McRory, Laud Nartey, Eric Anane, and Charlie Gordon.

Appendix
Activity Plans

The appendix has a number of activity plans for you to use to plan your classroom activities.

Activity Plan

Aspect	Details
Theme	
Teaching strategy	
Student level (year and/or course)	
Syllabus reference	
Specific Objective(s) of the activity	
Activity focus	
Activity description	
Textbook title and pages (if available)	
Materials / resources	
Observations (after lesson)	

Date (written):	Date (taught):

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