



**Continuing Professional
Development (CPD)
Program for
Primary School
Teachers for the
Academic Year
2022-23**



**Mathematics
Session Plans**

**DIRECTORATE OF PROFESSIONAL
DEVELOPMENT KHYBER PAKHTUNKHWA**

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Approved by: Directorate of Curriculum and Teacher Education Khyber Pakhtunkhwa, Abbottabad Vide **Letter No. 3327-29/DCTE/DPD-IP/CPD/Session Plan/Primary. Dated 07-07-2022.**

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PREFACE

In 2017, the Continuing Professional Development (CPD) programme was launched by the Elementary and Secondary Education Department (E&SED), Government of Khyber Pakhtunkhwa, as it is a regular feature of the professional career of the Primary School Teachers (PSTs) across all districts of the province. The purpose of CPD is to enhance student learning by continually improving teachers' professional knowledge and skills through emerging teaching learning methods including ICT based cooperative learning.

The CPD programme is comprised of four components; these are Self-Reflection (SR), Classroom Observation (CRO), Quarterly Monitoring Meeting (QMM) and Professional Development Days (PDDs).

Professional Development Day (PDD) is the core element of the CPD programme. Overall, eight Professional Development Days (PDDs) are held in an academic year, attending by all primary school teachers. Keeping in view the evolving needs of ICT in the field of education, video based session plans have been developed for the academic year 2022-23. The contents of all the session plans, PDDs have been fully aligned with textual material of the relevant grades.

This document (PDD Session Plans) introduces the structure, design, and delivery mechanism of the PDDs. It provides detailed guidelines to facilitators along with tips on facilitation and teaching-learning strategies/methods.

I hope these session plans will enhance teaching skills and knowledge of the facilitators in order to conduct the PDDs effectively which will further augment the teaching skills of the teachers for efficient and effective delivery in the classroom.

Gohar Ali Khan

Director, Directorate of Professional Development
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PDD-01 Video Based Session

Topic: Reading and writing whole numbers

60 min

Objectives: After this session, the teachers will be able to teach students to:

- Read and write the numbers up to 1,000,000 (one Million) in numerals.

Material Required: Video-PDD 1 – Mathematics, Textbook Mathematics G-5, charts, markers.

Activity 1

60 min

1. Divide participants into four groups.
2. Share the video with participants.
NOTE: Please make sure that the video is available to all groups.
3. Advise participants not to gossip while watching the video and volume watch it with appropriate volume.
4. Ask them to play video up to 3:12 and pause.
5. Assign a question to each group to discuss and prepare a presentation. (15 min)

Group 1	How to handle a situation where students repeatedly give wrong answers?
Group 2	Do you use wrong answers as a resource to scaffold learning? if yes, how? if no, why?
Group 3	How does appreciating students help in creating positive learning environment? Share examples based on your experiences.
Group 4	What are benefits of appreciating students in their holistic social and cognitive development?

6. Invite each group to present their work. (08 min each)
7. After the delivery of each presentation, invite feedback, questions, comments, suggestions etc., from the other participants.
8. Conclude the session by summarizing the discussion using key points explained by each group.
9. Ask participants to:
 - a. Present a short case study on the application of different techniques of appreciating and motivating the students in the next PDD.
 - b. Choose three low performing students from the class(es) that they teach.
 - c. Apply different techniques of appreciating and motivating the students (as discussed in the session today) during the month and record the changes.
 - d. Share their findings based on the following points:
 - i. What specific actions/techniques did you use?
 - ii. What difficulties did you face in implementing the above?
 - iii. How did you overcome these difficulties?
 - iv. What change in the overall behavior of the student was observed?
 - v. What changes in the overall academic performance of the student(s) were observed? In case no change was observed concerning points 4 and 5, share reasons and discuss what could have been done differently?

What we have learned today?

Use the following statement(s) to highlight the key learning(s) points of the session:

- Learned different strategies to teach place value of numbers up to million.



NOTE:

The task assigned (presentation) to trainee teachers at the end of PDD #1 must be presented in the beginning of PDD #2 session for 15 minutes.

PDD-2 Video Based Session

Topic: Whole Numbers LCM, HCF and Fractions

60 min

Objectives: After this session, the teachers will be able to teach students to:

- 2.1 Count and write whole numbers in 10s and 100s
- 2.2 Solve real life situation involving HCF and LCM
- 2.3 Add and subtract two or three fractions with different denominator.

Material Required: Videos-PDD 2 – Mathematics, Textbook Mathematics G-2,3,4 and 5 charts, markers etc.

Activity 1

30 min

1. Divide participants into four groups.
2. Share the video 2.1 with participants.
NOTE: Please make sure that the video is available to all groups.
3. Advise participants not to gossip while watching the video and keep the volume according to listening mode.
4. Ask them to play video up to 3:12 and pause.
5. Ask the following question.
 - i. Why subject expert while teaching to their students in this video relate these mathematical concepts to daily life situations?
6. Take their responses and discuss it with them in detail
7. Ask them again to play video from 3:13 to 4:31 and pause.
8. Ask the following questions one by one.
 - i. What are guided questions?
 - ii. What are the advantages of guided questions in teaching Mathematics?
 - iii. Have anyone of you already used this technique in your classroom?
9. Take their responses about each one question and deduce the correct answer to each question by sharing the following input.

Facilitator's Input:

- Mathematics is a subject of learning by doing. Anyone who teach Mathematics to their learners conceptually must relate it to the daily life situations. By doing so the learners will not only able to solve mathematical problems but they will have the capacity to understand and solve it correctly.
- Guided questions are those questions which help the learners to understand and solve the mathematical questions.
 - It leads towards the main topic which is under consideration.
 - It helps to understand and solve mathematical problems.
 - It cover the topic in less time and also provide opportunity for revision and assessment.

Activity 2

30 min

1. Reshuffle the participants and make four groups.
2. Share the video 2.2 with participants.
NOTE: Please make sure that the video is available to all groups.

3. Advise participants not to gossip while watching the video and volume watch it with appropriate volume.
4. Ask them to play video up to 1:34 and pause.
5. Ask the following questions.
 - i. Which technique is used for asking questions in this video?
 - ii. What are the advantages of posing questions?
6. Note their responses on writing board and discuss with them the following input.

Facilitator's Input:

In this video session subject expert used posing questions technique. Which is very meaningful because he/she tries his/her best to create a critical thinking and concentrate learners on the concerned topic.

According to this technique subject expert wants to know the correct information that to what extent they know about this concept. It is the easiest way to keep engaged learners in the lesson.

7. Ask them to play video 1:34 to 4:57 and pause.
Now ask the following questions
 - i. What do you mean by self-assessment?
 - ii. Which kind of quality enhances of a learner due to self-assessment?
 - iii. Has anyone of you used self-assessment activity in your classroom or not?
8. Take their responses and discuss the following facilitators input with them.

Facilitator's Input:

Self-assessment means as a learner to what extent he/she has learned what is taught to him/her. While as a teacher to know about his/her pedagogical skills of delivery and also to know that to what extent the learner has learned.

9. Ask participants to:
 - i. Prepare a presentation for teaching any other topic of Mathematics (from current month topics) by using the above techniques and Present in the next PDD session.
 - ii. Share their findings based on the following points:
 - What specific actions/techniques did you use?
 - What difficulties did you face in implementing the above?
 - How did you overcome these difficulties?
 - What change in the overall behavior of the students were observed?
 - What changes in the overall academic performance of the student(s) were observed?

What we have learned today?

Use the following statement(s) to highlight the key learning(s) points of the session:

- Learned different strategies to teach counting and writing in 10s and 100s.
- Learned different strategies and techniques how to teach HCF to our students in class room.



Note-1: The videos which are left in today session, must be watched in LMS and discuss the queries, if any in the next PDD session.

NOTE-2 : The task assigned (presentation) to trainee teachers at the end of PDD #2 must be presented in the beginning of PDD #3 session for 15 minutes.

PDD-3 Video Based Session

Topics: Number Operations and Fractions

60 min

Objectives: After this session, the teachers will be able to teach students to:

- 3.1 Add numbers up to 50 using mental calculation strategies.
- 3.2 Add three digit numbers with three digit numbers with carry of tens and hundreds
- 3.3 Divide a fraction by another fraction involving proper, improper and mixed fractions

Material Required: Videos-PDD 3 – Mathematics, Textbook Mathematics G-2,3,4 and 5 Charts, Markers, etc.

Activity 1

30 min

1. Divide participants into appropriate groups.
2. Share the video 3.1 with participants.
***NOTE:** Please make sure that the video is available to all groups.*
3. Advise participants not to gossip while watching the video and volume watch it with appropriate volume.
4. Ask them to play video 3.1 up to 01:00 and pause.
5. Ask the following questions.
 - i. What do you expect from your Mathematics students after sharing anecdote (Additional Information) strategy?
6. Take their responses and discuss it with them in detail.
7. Ask them again to play video from 1:13 to 2:08 and pause.
8. Ask the following question from the participants;
 - i. What is the most useful strategy used for clarity of concept in teaching Mathematics?
 - ii. Have anyone of you used this technique in your classroom?
9. Take their responses about each one question and deduce the correct answer to each question by sharing the following input.

Facilitator's Input:

- Anecdote strategy not only help in understanding the concept but it also increases the interest of the learners in Mathematics. It provides opportunity to relate the concept with daily life examples.
- By using examples to explain the concept is the most relevant method to understand it clearly.
- In Mathematics examples illustrate the concept very easily to learners and they understand it conceptually.

Activity 2:**30 min**

1. Participants stay in the same groups.
2. Share the video 3.3 of fraction with participants.
3. Ask them again to watch whole video of fraction and pause.
4. Ask the following question from the participants;
 - i. What is metacognition strategy in Mathematics?
 - ii. Why is metacognition important in Mathematics?
5. Note their responses on writing board
6. Facilitator summarize the activity by sharing following input

Facilitators Input:

It is a process of self-monitoring and regulation. eg for any math's problem first you will try to understand the problem secondly make a plan for the solution 3rdly process the problem to solve and finally revisit the problem and remove the mistake to get correct result.

It is the ability to monitor and control our own thoughts, how we approach the problem, how we choose the strategies to find a solution, or ask about ourselves about the problem.

7. Ask participants to:
 - a. Prepare presentation for teaching any other topic of Mathematics (from current month topics) by using the above techniques and Present in the next PDD session.
 - b. Share their findings based on the following points:
 - i. What specific actions/techniques did you use?
 - ii. What difficulties did you face in implementing the above?
 - iii. How did you overcome these difficulties?
 - iv. What change in the overall behavior of the student was observed?
 - v. What changes in the overall academic performance of the student(s) were observed?

What we have learned today?

Use the following statement(s) to highlight the key learning(s) points of the session:

- Learned different strategies to teach add numbers using mental strategy and solve fractions involving division by applying metacognition strategy.

Note-1: The videos which are left in today session must watch in LMS and discuss it in next PDD session if any query.



NOTE-2: The task assigned (presentation) to trainee teachers at the end of PDD #3 must be presented in the beginning of PDD #4 session for 15 minutes.

PDD-4 Video Based Session

Topic: Number Operations, Decimal Numbers and Percentages

60 min

Objectives: After this session, the teachers will be able to teach students to:

- 4.1 .Solve real life numbers stories of subtraction up to three digits without borrowing.
- 4.2 .Subtract numbers up to 50 using mental calculation
- 4.3 .Rounding off 4 digit numbers up to 3 decimal places to the nearest tenth or hundredth

Material Required: Videos-PDD 4 – Mathematics, Textbook Mathematics G-3,4 and 5, Charts, Markers etc.

Activity 1

30 min

1. Divide participants into manageable groups.
2. Share the video 4.1 with participants.
NOTE: Please make sure that the video is available to all groups.
3. Advise participants not to gossip while watching the video and keep the volume of video as per listening mode of trainee teachers.
4. Ask them to play video up to 1:36 and pause.
5. Ask the following question.
 - i. How game board technique can improve the cognitive functions of learners in teaching mathematics?
6. Take their responses and discuss it with them in detail.
7. Ask them again to play video from 1:40 to 5:20 and pause.
8. Ask the following questions.
 - i. How the facilitator teaches the concept of subtraction to their learners in this video?
 - ii. What are the advantages of telling story in teaching Mathematics?
 - iii. Have anyone of you used this technique in your classroom? If yes, then what was the response of learners?
9. Take their responses about each one question and deduce the correct answer for each question than share the following.

Facilitator's Input:

- Mathematics is a subject of logical thinking and reasoning. Teaching concept of subtraction through game board strategy enhance the logical thinking and reasoning of learners.
- In this video facilitator relate the concept of subtraction to daily life situations in a story mode. In this technique the learners not only listen the story carefully but also try to understand the concept more actively and interestingly. By doing so, not only increasing interesting level but learning level of learners also developed.

Activity 2:**30 min**

1. Reshuffle the trainee teachers and make appropriate groups.
2. Share the video 4.3 with learners.
NOTE: Please make sure that the video is available to all groups.
3. Advise participants not to gossip while watching the video and keep the volume as per listening mode of trainee teachers.
4. Ask them to play video from 3:10 to 7:20 and pause.
5. Ask the following questions.
 - i. Which methods were used by facilitator to teach rounding off 4 digit numbers?
 - ii. How did the facilitator assess their learners?
 - iii. Why learners learnt well while using the above methods?
6. Note their responses on writing board and discuss with them the following input.

Facilitator's Input:

In this video session facilitator used both inductive and deductive methods to teach to their learners. During the session facilitator assess their learners using formative assesment. Facilitator asks different questions to solve it and discuss with them.

During the session the facilitator not only teach to their learners but also assess them and during the session he/she may change his/her techniques for meaningful results.

7. Ask trainee teachers to:
 - a. Prepare a presentation for teaching any other topic of mathematics (from current month topics) by using the above techniques and Present in the next PDD session.
 - b. Share their findings based on the following points:
 - i. What specific actions/techniques did you use?
 - ii. What difficulties did you face in implementing the above?
 - iii. How did you overcome these difficulties?
 - iv. What change in the overall behavior of the student was observed?
 - v. What changes in the overall academic performance of the student(s) were observed?

What we have learned today?

Use the following statement(s) to highlight the key learning(s) points of the session:

- Learned different techniques and strategies that how to teach the concept of subtraction to their learners and rounding off 4 digit numbers up to tenths and hundredths.



Note-1: The videos which are left in today session must watch in LMS and discuss it in next PDD session if any query

NOTE-2:

The task assigned (presentation) to trainee teachers at the end of PDD #4 must be presented in the beginning of PDD #5 session for 15 minutes.

PDD-5 Video Based Session

Topics: Number Operations, Distance and Time

60 min

Objectives: After this session, the teachers will be able to teach students to.

5.1 Complete number sequences in steps of 2, 3, 4 and 10 (e.g., in steps of the sequence is expressed as 2, 4,6...

5.2 Develop multiplication tables of 2,3,4,4 and 10 till the multiplication of 10×10

5.3 Solve real life situation involving conversion, addition and subtraction of time.

Material Required: Videos-PDD5–Mathematics, Textbook Mathematics G-2, 5 charts, markers,

Activity 1

30 min

1. Divide trainee teachers into appropriate groups.
2. Share the video 5.2 with trainee teachers.
NOTE: Please make sure that the video is available to all groups.
3. Advise trainee teachers not to gossip while watching the video and keep the volume of the video according to the listening level of learners.
4. Ask them to play video up to 4:54 and pause.
5. Ask the following questions.
 - i. Why facilitator in this video relate these mathematical concepts to daily life examples?
 - ii. What is the effect of thumb up and thumb down on learners?
6. Take their responses and discuss it with them in detail.
7. Ask the following questions one by one.
 - i. Which method is used in this video to teach the tables?
 - ii. What strategy you will use to teach tables to your students?
8. Take their responses about each question and share the following.

Facilitator's Input:

1. Mathematics is a subject of learning by doing. Anyone who teach Mathematics to their learner conceptually must relate it to the daily life examples, by doing so the learners will not only able to solve mathematical problems but they will have the capacity to understand it conceptually.

2. Thumb up mean" I have good understanding" (Sign of appreciation) and **Thumb down** mean "I don't get it" (sign needed imprudent).it is a quick formative assessment technique. You know quickly how well the students understand the concept of topic.

3. Both deductive and inductive methods are used in this video by presenter to teach tables to the trainee teachers. Question answer technique is also used in this video.

4: By grouping the concrete things in order (role play technique)

Activity 2**30 min**

1. Divide trainee teachers into appropriate groups.
2. Share the video 5.3 with trainee teachers.
NOTE: Please make sure that the video is available to all groups.
3. Advise trainee teachers not to gossip while watching the video and keep the volume of the video according to the listing level.
4. Ask them to play video up to 1:15 and pause.
5. Ask the following questions.
 - i. Why flash cards are useful in teaching arithmetical operations?
 - ii. What are advantages of teaching aids in Mathematics?
6. Take their responses and discuss with them in detail.
7. Ask them to play video from 1:20 to 4:40 and pause.
8. Ask the following questions.
 - I. What are the main steps used in problem solving method?
 - II. How can you use this method in your classroom?
9. Take their responses about each one question and discuss.

Facilitator's Input:

1. Using flashcards is one of the most common technique and it help the learners to engage them in active recall or a process where learner is actively engaged in learning by stimulating our memories and creating long lasting connection to the materials.
2. Teaching aids make Mathematics interesting and learners show great interest in solving mathematical problem. These materials are used in classroom by teachers and learners to encourage teaching learning process and make it easier for them. Teaching aids are the best tools for making teaching learning effective and durable provides verity in teaching, helpful in getting student attention, save time and energy.
3. The following are the main steps used in problem solving method.
 - i. Read and understand the problem.
 - ii. Plan for the solution of problem.
 - iii. Steps or Process of solution.
 - iv. Revisit the solution and find the correct result.

8. Ask the Trainee teachers to:
 - a. Prepare a presentation for teaching any other topic of Mathematics (from current month topics) by using the above techniques and Present in the next PDD.
 - b. Share their findings based on the following points:
 - i. What specific actions/techniques did you use?
 - ii. What difficulties did you face in implementing the above?
 - iii. How did you overcome these difficulties?
 - iv. What change in the overall behavior of the student was observed?
 - v. What changes in the overall academic performance of the student(s) were observed? In case no change was observed concerning points 4 and 5, share reasons and discuss what could have been done differently?

What we have learned today?

Use the following statement(s) to highlight the key learning(s) points of the session.

- Learned to develop multiplication tables of 2,3,4,5 and 10 using Thumb up and Thumb down technique.
- Learned to solve real life problems involving addition, subtraction, multiplication and division using problem solving technique.



Note-1: The videos which are left in today session must watch in LMS and discuss it in next PDD session if any query

NOTE-2:

The task assigned (presentation) to trainee teachers at the end of PDD #5 must be presented in the beginning of PDD #6 session for 15 minutes.

PDD-06 Video Based Session

Topics: Fraction and Geometry

60 min

Objectives: After this session, the teachers will be able to teach students to.

- 6.1. Identify half, one third and quarter with the help of objects and figures.
- 6.2. Use ruler to draw a straight line of a given length.
- 6.3. Use protector and ruler to construct right angle, straight angle and reflex angles.
- 6.4. Measure the length of the remaining sides and angles of the triangle.

Material Required: Videos-PDD6–Mathematics, Textbook Mathematics G-2,5,Charts, Markers,

Activity 1

30 min

1. Divide trainee teachers into appropriate groups.
2. Share the video 6.1 with trainee teachers.
NOTE: Please make sure that the video is available to all groups.
3. Advise trainee teachers not to gossip while watching the video and keep the volume of the video according to the listing level.
4. Ask them to play video up to 2:42 and pause.
5. Ask the following questions.
 - i. Why drawing technique is useful in the teaching of fraction?
 - ii. Have any one of you used this technique, if yes then how?
- 6 Take their responses and discuss it with them in detail following input.
 - 7 Ask them again to play video from 2:50 to 3:40 and pause.
- 8 Ask the following questions one by one.
 - I. How can you make the half part of whole object by using Drawing technique?
 - II. What are the advantages of drawing technique in teaching fractions?
- 9 Take their responses about each one question and share the following input.

Facilitator's Input:

1. **Mathematics** is a subject of learning by doing. Any who teach Mathematics to their learner using drawing technique, it increases the interest of learners in learning process. In this technique different colors are used to represent equal parts of a whole thing, which explain the concept of fraction clearly.
2. Give a different shapes paper to the learners and ask them to fold it in half and write this in written form on the paper. In this way the learners take great interest in this activity.
3. Drawing technique is beneficial in the teaching of fractions. It increases the interest of learners and develops skills of practical work. It also motivates the learners for the topic and makes learning more interesting.

Activity 2**30 min**

1. Rearrange the trainee teachers in four groups.
2. Share the video 6.3 with trainee teachers.
NOTE: Please make sure that the video is available to all groups.
3. Advise trainee teachers not to gossip while watching the video and keep the volume of the video according to the listening level.
4. Ask them to play video up to 1:17 and pause.
5. Ask the following questions.
 - i. What is the effective way to start the lesson?
 - ii. Why questions are asked before teaching a new topic?
 - iii. Enlist different AV aids which are used in this video.
6. Take their responses and discuss it with them in detail.
7. Ask them again to play video from 1:30 to 7:30 and pause.
8. Ask the following questions one by one.
 - i. Which techniques are used in this video for teaching the lesson?
 - ii. How can you get the interest of learners while teaching Geometry?
 - iii. What are the benefits of teaching aids in Geometry?
9. Take their responses about each one question.

Facilitator's Input:

1. The most effective way to start the lesson is QUESTIONING and discussion to know the previous knowledge of the learners and to link it with the new topic. It motivates the learners and enhances their learning.
2. Asking questions is essential for the checking learners understanding and keeps them engaged with the lesson. It encourages the deep and critical thinking of the learners.
3. Drawing techniques are very useful for the teaching of geometry. It develops the practical skills and basic concepts of the learners through the use of teaching aids, because teaching aids make the learning process interesting and meaningful.
4. AV aids make Mathematics interesting and learners show great interests in solving mathematical problem. These instruments are used in classroom by teachers and learners to encourage teaching learning process and make it easier for them. AV aids are the best tools for making teaching learning effective and durable provides verity in teaching, helpful in getting student attention, save time and energy.

10. Ask the trainee teachers to:
 - a. Prepare a presentation by using the above technique for any other topic of mathematics (from current month topics) and present it in the coming PDD session.
 - b. Share their findings based on the following points:
 - i. What specific actions/techniques did you use?
 - ii. What difficulties did you face in implementing the above?
 - iii. How did you overcome these difficulties?
 - iv. What change in the overall behavior of the student was observed?
 - v. What changes in the overall academic performance of the student(s) were observed? In case no change was observed concerning points 4 and 5, share reasons and discuss what could have been done differently?

What we have learned today?

Use the following statemnt(s) to highlight the key learning(s) points of the session.



- Learned to identify half, one third and quarter with the help of objects and figures by using questioning technique.
- Learned to draw a straight line and use protector and ruler to construct right angle, straight angle and reflex angle with help of drawing technique.

Note-1: The videos which are left in today session must watch in LMS and discuss it in next PDD session if any query

NOTE-2: The task assigned (presentation) to trainee teachers at the end of PDD #6 must be presented in the beginning of PDD #7 session for 15 minutes.

PDD-07 Video Based Session

Topic: Measurement (Length, Mass, Capacity) and Geometry.

60 min

Objectives: After this session, the teachers will be able to teach students to.

- 7.1. Use addition and subtraction within 100 to solve real life situation involving length in same units.
- 7.2. Recognize and use the standard metric units of capacity i-e litter and mille litter.
- 7.3. Recognize different types of symmetry (Reflective and Rotational) in 2-D figures.
- 7.4. Recognize and Name 3-D objects (Cube, Cuboids, cylinder, Cone, Sphere, Pyramid)

Material Required: Videos-PDD7–Mathematics, Textbook Mathematics G- 2, 5, Charts and Markers,

Activity 1

30 min

1. Divide trainee teachers into five groups.
2. Share the video 7.2 with trainee teachers.
NOTE: *Please make sure that the video is provided to all groups.*
3. Advise the trainee teachers to keep the volume of the video according to the level of listener and also tell them not to gossip during watching the video.
4. Ask them to play video up to 0:46 and pause.
5. Ask the following questions.
 - i. How presenter relates the concept of capacity to daily life situation in this video?
6. Take their responses and discuss it with them in detail.
7. Ask them again to play video from 0: 47to 2:57 and pause.
8. Ask the following questions one by one.
 - i. What is the purpose of asking questions in the learning process?
 - ii. Why practice questions are given to the students in Mathematics?
 - iii. How the concepts of student make strengthening about the topic?
 - iv. How did he/she assess the work done in this activity?
9. Note their responses on writing board and discuss by sharing the following in put with them.

Facilitator's Input:

- Mathematics is a subject of learning by doing. So everyone who teaches mathematics, they give examples from the daily life to learn it by doing them practically. By this way they not only solve problems but also understand the concept easily.
- Asking questions is a useful technique in teaching learning process and its purpose is to know the level of learner. It enables learners to think about the rationale behind the answer.
- Practice questions are given to the learners to apply the learnt concepts in the lesson. It is most useful for strengthening the conceptual understanding. It will also develop all the four skills of learning (listening, speaking, reading and writing).
- Activity technique is used in this video. In this technique teacher teaches the topic through activity, in which all students are participating, which develop the student's

self-learning and skills. It also develops the confidence level of the students.

5. Different volumetric containers (worksheet) were provided to the trainee teachers and ask them to measure different capacities having different units for assessment.

Activity 2

30 min

1. Divide trainee teachers into appropriate groups.
2. Share the video 7.4 with trainee teachers.
NOTE: Please make sure that the video is provided to all groups.
3. Advise the trainee teachers to keep the volume of the video according to the level of listener and also tell them not to gossip during watching the video.
4. Ask them to play video up to 2:04 and pause.
5. Ask the following questions.
 - i. What is the effective way to start the lesson?
 - ii. How kinesthetically active learners can be effectively involved in teaching learning process?
6. Take their responses and discuss it with them in detail.
7. Ask them again to play video from 2:19 to 6:50 and pause.
8. Ask the following question.
 - i. Which technique is used in the video?
9. Take their responses and discuss in detail with them.
10. Make four groups of them and Assign a question to each group to discuss and note key points on your note pad.

Group 1	Why questions are asked before teaching the topic?
Group 2	How the concepts of student make strengthening about the topic?
Group 3	Discuss strategies for active engagement of students through learning by doing?
Group 4	How can you use learning by doing in your classroom, share your experiences?

11. Facilitate them during the group work .
12. Invite any one from each group to share their work with whole class.
13. Summarize the discussion by sharing the following facilitator input.

Facilitator's Input:

- The most effective way to start the lesson by asking questions and discussion to know the previous knowledge of the learners and to link it with the new topic. It motivates the learners and enhances their learning.
- Kinesthetic learning is movement based learning, use physical movement to teach learner new concepts. It is an integral part of child centered approach to teaching.
- Pictorial concrete technique is a highly effective technique in teaching learning process. It develops a deep and sustainable understanding of mathematical concepts. It enhances problem solving skills and build learner existing understanding.
- Asking questions is essential to know the learners understanding and keep

them engaged with the lesson. It encourages the deep and critical thinking of the learners.

- In practice / exercise activity the learner's get expertise in that specific area. It also provides opportunity to the learners how to handle the daily life situation in such circumstances.

14. Ask the trainee teachers to:

a. Prepare a presentation for teaching any other topic of Mathematics (from current month topics) in this unit by using the above techniques and Present in the next PDD session.

b. Share their findings based on the following points:

- i. What specific actions/techniques did you use?
- ii. What difficulties did you face in implementing the above?
- iii. How did you overcome these difficulties?
- iv. What change in the overall behavior of the student was observed?
- v. What changes in the overall academic performance of the student(s) were observed? In case no change was observed concerning points 4 and 5, share reasons and discuss what could have been done differently?

What we have learned today?

Use the following statemnt(s) to highlight the key learning(s) points of the session:

- Learned to recognize and use the standard metric units of capacity by using asking question technique.
- Recognize and name 3-D objects (Cube, Cuboids, cylinder, Cone, Sphere, Pyramid) by using pictorial concrete technique



Note-1: The videos which are left in today session must watch in LMS and discuss it in next PDD session if any query

NOTE-2: The task assigned (presentation) to trainee teachers at the end of PDD #7 must be presented in the beginning of PDD #8 session for 15 minutes.

PDD-08 Video Based Session

Topics: Time, Perimeter and Area.

60 min

Objectives: After this session, the teachers will be able to teach students to.

8.1 .Use solar colander to find a particular date/time.

8.2 . Find and apply formula to find perimeter and area of a square and rectangular region.

8.3. Solve real life situation involving perimeter and area of a square and rectangular region.

Material Required: Videos-PDD-8 Mathematics, Textbook Mathematics G-2, 5 Charts, Markers,

Activity 1

30 min

1. Divide trainee teachers into appropriate groups.

2. Share video 8.1 with trainee teachers.

NOTE: Please make sure that the video is available to all groups.

3. Advise participants not to gossip while watching the video and keep the volume of the video according to the listening level.

4. Ask them to play video up to 1:05 and pause.

5. Ask the following questions.

i. What is Hypothetical problem?

ii. Why we apply Hypothetical problem technique in this lesson?

6. Take their responses and discuss it with them in detail

7. Ask them again to play video from 1:18 to 5:04 and pause.

8. Ask the following questions one by one.

I. What are the advantages of Hypothetical problem technique in teaching Mathematics?

II. How can you use this technique in your classroom?

9. Take their responses about each one question and share the following input.

Facilitator's Input:

- Hypothetical problem are world problems which are mostly consist of such questions that needs mathematical analysis and equations to be solved. It is based on supposition, opinion and personal beliefs. This technique is used by the teacher to promote creative thinking, problem solving, evaluation and other high order skills.
- Hypothetic technique can be used to solve the problem with in the content of the lesson, so this is an effective way to introduce the lesson.

Activity 2

30 min

1. Divide trainee teachers in appropriate groups.

2. Share the video 8.2 with trainee teachers.

NOTE: Please make sure that the video is available to all groups.

3. Advise participants not to gossip while watching the video and keep the volume of the video according to the listening level.

4. Ask them to play video up to 2:08 and pause.

5. Ask the following questions.
 - i. What are the positive effects of storytelling technique on the learner during teaching a lesson?
 - ii. How can we use Story Telling technique in classroom?
6. Take their responses and discuss with them in detail.
7. Ask them again to play video from 2:22 to 7:12 and pause.
8. Ask the following questions one by one.
 - i. What do you know about assessment?
 - ii. What is the importance of assessment in learning process?
9. Take their responses about each question and discuss it with them by share the following input.

Facilitator’s Input:

- Storytelling helps learner to understand the situation in a better way. It helps the learner to visualize themselves in similar situation as the story teller. Children love listening stories which boosts their listening skills. It improves social skills and making learning process easier and interesting.
- Telling a story is a great way to introduce a new topic. It can be used an icebreaker. It allow learners to relate it with the topic and provide opportunities to them for learning.
- Assessment is a continuous process to determine what a learner knows, can do and understand. It is a feedback from the learners to the teacher. Assessment is an integral part of instructions, as it determines whether or not the goals of education are being achieved.
- Assessment is a key component of learning because it helps the learner to learn. When learners are able to see how they are doing in a class, they are able to determine whether or not they understand the course materials. It can also help to motivate the learner. It provides an insight to the teacher about the level of understanding of learners about a particular concept or topic.

What we have learned today?

Use the following statemnt(s) to highlight the key learning(s) points of the session.

- Learned to Use solar colander to find a particular date/time.
- Learned to apply formula for finding perimeter and area of a square and rectangular region.



Note: The videos which are left in today session must watch in LMS and discuss it in next PDD session if any query