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Lesson Exemplar for Mathematics 5

Quarter 1
Lesson
6

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Lesson Exemplar for Math Grade 4
Quarter 1: Lesson 6 Week 6
SY 2024-2025

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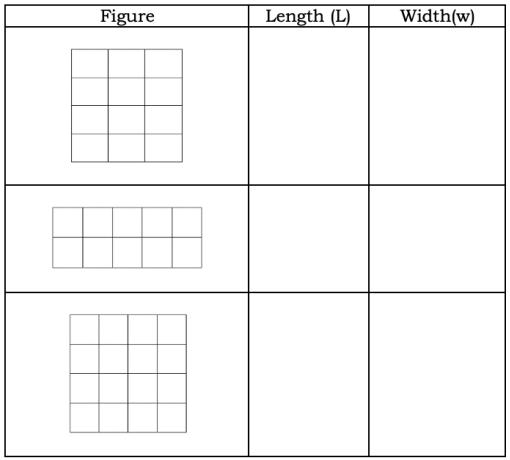
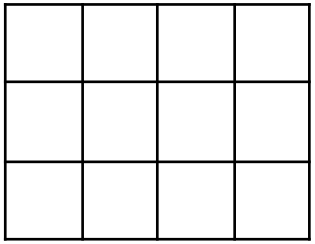
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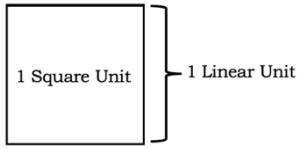
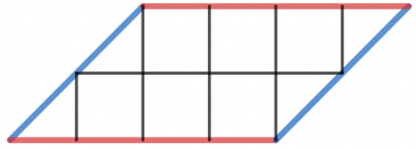
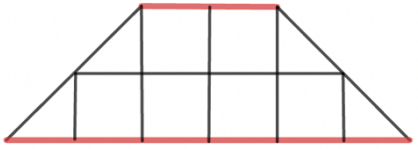
MATHEMATICS/QUARTER 1/ GRADE 5

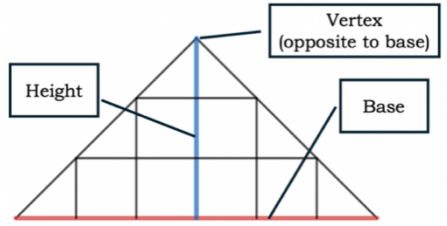
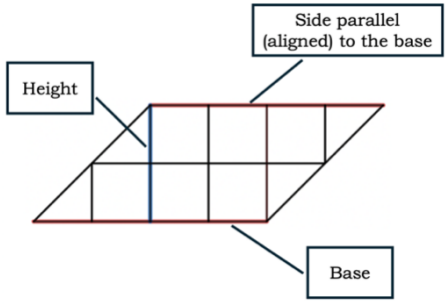
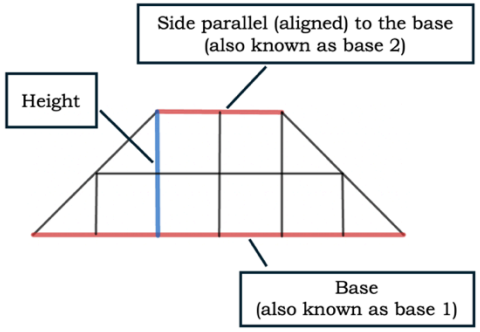
I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners should have knowledge and understanding of the area of a parallelogram, triangle, and trapezoid.
B. Performance Standards	By the end of the quarter, the learners are able to determine the area of a parallelogram, triangle, and trapezoid. (MG)
C. Learning Competencies and Objectives	***Learning Competency*** *Lesson Objective 1:* Illustrate using a model the area of a square, rectangle, parallelogram that is not a rectangle, triangle, and trapezoid *Lesson Objective 2:* State the formula for the area of a square, rectangle, parallelogram that is not a rectangle, triangle, and trapezoid using grid
C. Content	• Model areas of parallelograms (that is not a rectangle), triangles, and trapezoids. • Derive formulas for the areas of parallelograms (not rectangles), triangles, and trapezoids.
D. Integration	Critical Thinking

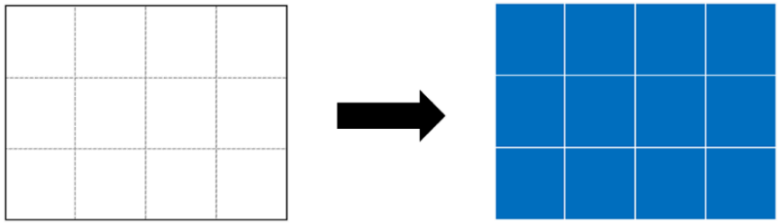
II. LEARNING RESOURCES
Creag H.C. (2018). Real Life Mathematics 2nd Edition. Abiva Publishing. Quezon City, Manila. Geogebra. https://www.geogebra.org/

III. TEACHING AND LEARNING PROCEDURE		**NOTES TO TEACHERS**
A. Activating Prior Knowledge	**Day 1** **Review the concept of length and width of a quadrilateral** Step 1: Ask the learners to determine the length and the width of the given	**Start of Day 1 (Suggestion)** Step 1: Use the square below in determining each unknown length and width of the

	quadrilaterals.  	quadrilaterals. side length of a square  = 1 unit Answers: Length = 4 units; width = 3 units Length = 5 units; width = 2 units Length = 4 units; width = 4 units
B. Establishing Lesson Purpose	**Lesson Purpose** **Developing Concept of Area** Step 1: Ask the learner to fill in a rectangular piece of paper using small pieces of cut squares, triangles, and circles. *Which shape could be used to cover the rectangular piece of paper wholly without overlaps?*  	**Task 2** aims to trigger the mind of the learners about the concept of area. Step 1: You may prepare a set of rectangular pieces of papers, cut small pieces of squares, triangles, and circles. Place them in an envelope. Include paste for pasting. **Note:** Make sure that the cut small squares are enough to fill in without gaps the rectangular piece of paper in each envelope.

	Step 2: After the activity, allow learners to show their outputs, and collect those who used squares to cover the rectangle. Tell the learners that the number of squares used to cover the inside part of the rectangle has a special name in mathematics. It is called an **Area.** Step 3: Present the objectives of the lesson. 1. Illustrate using a model the area of a square, rectangle, parallelogram that is not a rectangle, triangle, and trapezoid 2. State the formula for the area of a square, rectangle, parallelogram that is not a rectangle, triangle, and trapezoid using grid **Unlocking Vocabulary** Step 1: Discuss the following in the definition of terms according to the subtopic. **Definition of Terms** - The figures could be covered by smaller squares. A single square is a ***square unit,*** while the one side length of a square unit is what we call a *linear unit*.  - The ***length*** is the number of linear units of the longer side, while the ***width*** is the number of units of the shorter side. - The ***area*** is the number of square units that cover the surface of the figure. - A ***triangle*** is a three-sided polygon. - A ***parallelogram*** is a four-sided polygon with two pairs of opposite sides parallel. - A ***trapezoid*** is a four-sided polygon with one pair of opposite sides parallel.	Step 2: Show cutouts with grids to the class. Step 3: Introduce that shapes, other than rectangles, have areas. Thus, the objective of the lesson is to explore areas of different shapes. Step 1: In case the learners already forgot the difference between parallelogram and trapezoid, you may present these to them:  A parallelogram has TWO pairs of parallel (aligned) sides (red sides and blue sides).  A trapezoid has only ONE pair of parallel (aligned) sides (red

	- Height - Triangle: The length of a perpendicular line segment from a vertex to the opposite side.  - Parallelogram and Trapezoid: The length of the perpendicular line from the base line to the line parallel to it.   	sides only). Best if you write the **definition of terms** in a manila paper or cartolina and post it in one of your bulletin boards. You can point at it every time you will define the definition.
C. Developing and Deepening Understanding	**Day 2** **SUBTOPIC 1: Area of a Square, Rectangle, and Parallelogram that is not a rectangle** **Explicitation** Step 1: Connect this discussion on the previous activity, see task 2: developing concept of area.	**Start of Day 2 (Suggestion)** *State the same lesson objectives.* Step 1: Recall to the learners that a single square is a *square unit*. 



May use the following questions for processing to develop the area concept and the area of the square and the area of the rectangle.

a. How many  square units did they use to fill in the interior part of the rectangle?

Answer: 12 or 12 square units.

(This is just an example, use your actual rectangles)

b. What is the length? the width?

Answer: L = 4 units and W = 3 units

(This is just an example, use your actual rectangles)

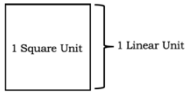
c. What connection do you see with the area of the rectangle and the product of its length and width?

Answer: Area = 12 square units is the product 4 units and 3 units.

Step 2: To help learners understand the concepts better, ask the learners to do activity no. 1. See Worksheet Activity No. 1.

Discuss these to learners.

- The rectangle is made-up of smaller squares. A single square is a *square unit*, while the one side length of a square unit is what we call a *linear unit*.



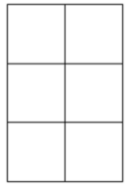
- The *length* is the number of linear units of the longer side, while the *width* is the number of units of the shorter side.

Area is 1 square unit

Tell the learners that the area of the rectangle is 12 square units and that the number of square units that they used to cover the rectangle is called area.

Step 2: If learners can't start activity no 1.; you can review the concept of area by using the example below:

Find the length, width, and area of the rectangle below.



Hence, length is 3 units of the rectangle id while its width is 2 units.
- The *area* is the number of square units that cover the surface of the figure. Hence the area of the rectangle is 6 square units.

Step 3: Once the learners are done with activity 1, ask them to recite answers in activity 1 one-by-one. Write on the board the table from activity no. 1 and list down their answers in it.

Showing the filled-up activity no. 1, ask the learners what the formula for the area of a rectangle is.

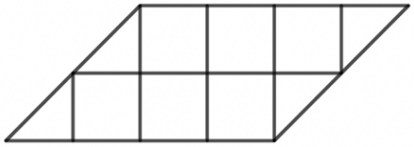
Step 3: Make the learners see that when they multiply the length and the width of the rectangle, they will get the area. Hence, the formula is supposed to be.

$$A = l \times w$$

where: A = area; l = length; w = width

Step 4: Present to the learners the figure below. Tell the learners that they will try to find out the area of a parallelogram.

Find the area of the parallelogram below.



Remind the learners of what they did in finding the area of the rectangle (counting the number of small squares). Using what they know to find the area of rectangles, ask them to try to find the area of the parallelogram.

Give them 5 minutes to figure it out. After 5 minutes, ask them to **Turn and Talk**.

Step 4: Emphasize to the learners that at this point, the focus is more on them to try to figure out the task instead of getting the correct answer; hence, recognize learners' effort.

Turn and Talk is a keyword which means you will ask learners to turn to their seatmates to compare their answers and solutions. Best if you discuss the meaning of ***turn and talk*** the first time you use it in this step.

After the turn and talk, ask learners for answers regardless if it is correct or wrong. List their answers down on the board. Then, either you or the learner discuss how to find the area of the parallelogram.

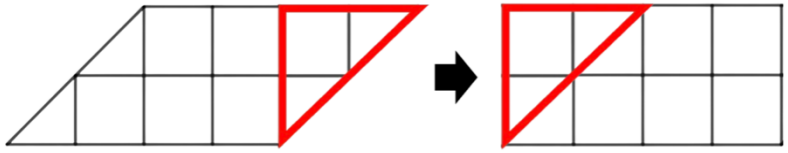
If there are correct answers from learners, make them discuss their solution.

Worked Example

Step 1: Tell the learners that they don't know how to find the area of a parallelogram, but they know how to find the area of a rectangle. So, they need to make a rectangle from the parallelogram.

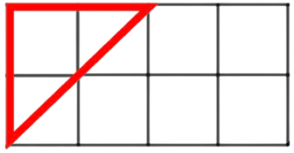
Step 1: If there are no correct answers from the learners, you discuss the solutions, as shown in the worked example.

Step 2: Cut a triangle at the right of the parallelogram and place it on the left side. See figures below for reference.



Step 2: The figure can be shown using PowerPoint presentation or make a cut out using cartolina. The important thing is they see the red triangle moving.

Step 3: Showing the equivalent rectangle, ask the learners again to find the area of the parallelogram. Make them explain how they found it.

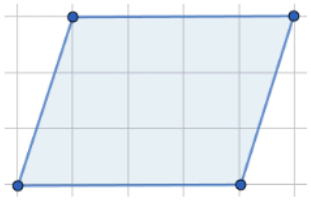


Step 3: Learners should answer **12 square units**. They could either count the number of square units or multiply the lengths and widths. Regardless, you or the learners present both methods.

Lesson Activity

Step 1: Learners will work on activity no. 2, see sample item below. See Worksheet Activity No. 2.

Step 1: Return to the meaning of base and height of a parallelogram. Point the learners to the **definition of terms** written in the manila paper or cartolina. Refer to task 3 notes to teachers.

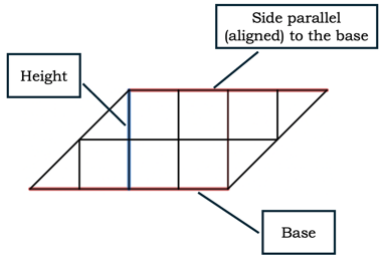
Figure	Base	Height	Area
	4	3	12

Step 2: Discuss the answers to the learners.

Step 3: Ask the learners to observe the answer in the table. Then, ask them:

If the formula for the area of the rectangle is $A = l \times w$, what is the formula for the area of the parallelogram?

Formula for area of the parallelogram ***A = b x h***



Step 2: You have the freedom on how to do this step.
Step 3: Make learners realize the formula $A = b \times h$.

Day 3

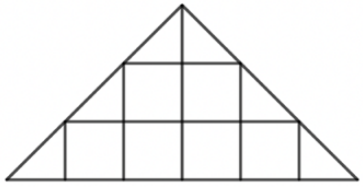
SUBTOPIC 2: Area of a Triangle

Explicitation

Step 1: Recall that the formula for the area of a parallelogram is $A = b \times h$, where A is the area, b is the base, and h is the height.

Step 2: Post to the learners the problem below.

Find the area of the triangle.



To help the learners, show that if you copy the triangle, flip it vertically, and

Start of Day 3 (Suggestion)

State the same lesson objectives.

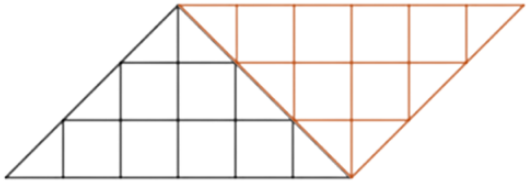
Step 1: You might want to return to the answers in task 6 (the activity) for examples.

Give them 5 minutes to figure it out. After 5 minutes, ask them to **Turn and Talk**.

Turn and Talk is a keyword which means you will ask learners to turn to their seatmates to compare their answers and solutions.

attach it to the original triangle, you can form a parallelogram. Remind the learners that they may not know the how to find the area of a triangle, but they know how to find the area of a parallelogram (refer to step 1). Add the red triangle to the original one as shown below for reference.

(this can be shown using PowerPoint presentation or make a cut out using cartolina)



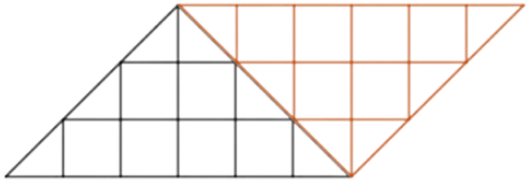
Step 3: Ask for learners" answers regardless if it is correct or wrong. List their answers down on the board. Then, either you or the learner discuss how to find the area of the triangle.

Step 3: If there are correct answers from learners, make them discuss their solution.

Worked Example

Step 1: Return the figure you formed in Task 7, step 2.

Step 1: Learners will provide several "correct" solutions to the problem. Acknowledge them. But if no one presented a solution similar with the worked example, discuss the worked example. It is important in deriving the formula of the area of the triangle.



Show that the area of the parallelogram formed is **18 square units** using the formula A = b x h.

Return to the original question, find the area of the **triangle**. Emphasize that the original triangle is half of the parallelogram you formed. Hence, the area of the triangle is also just half of the area of the parallelogram.

Given the argument, the area of the triangle is **9 square units**

Step 2: Explain to the learners that if:

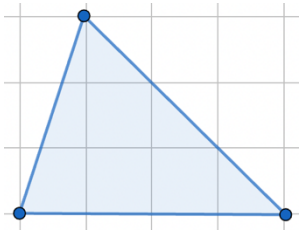
- a triangle is just **half** of the area of a parallelogram; and
- the formula for the area of a parallelogram is **A = b x h**,

then:

- the formula for the **area of a triangle** is $A = \frac{b\,x\,h}{2}$.

Step 3: Present the example below.

Find the area of the triangle



Task 9: Lesson Activity

Step 1: Learners will work on activity no. 3, see sample item below. See Worksheet Activity No. 3. Return to the meaning of base and height of a triangle.

Figure	Base	Height	Area
	4	1	2

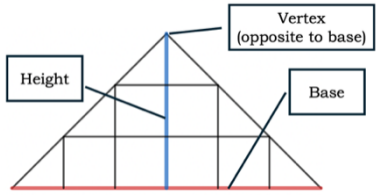
Step 2: Discuss the answers to the learners.

Step 3: Explain the example using the solution below.

$$A = \frac{b\,x\,h}{2}$$

$$A = \frac{4\,x\,3}{2} = \frac{12}{2} = 6$$

Step 1: Point the learners to the **definition of terms** written in the manila paper of cartolina. Refer to task 3 notes to teachers.



Step 2: You have the freedom on how to do this step.

Day 4

SUBTOPIC 3: Area of a Trapezoid

Explicitation

Step 1: Recall that the formula for the area of a parallelogram is $A = b\,x\,h$, where A is the area, b is the base, and h is the height.

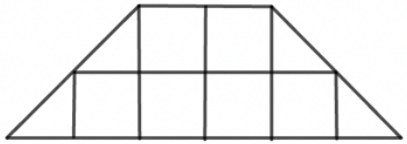
Start of Day 4 (Suggestion)

State the same lesson objectives.

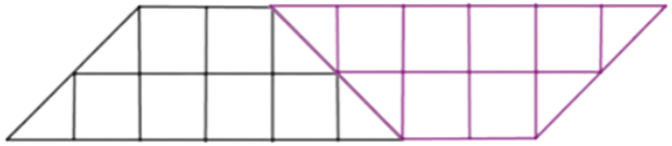
Step 1: You might want to return to the answers in task 6 (the activity) for examples.

Step 2: Post to the learners the problem below.

Find the area of the trapezoid.



To help the learners, show that if you copy the trapezoid, flip it vertically, and attach it to the original triangle, you can form a parallelogram. Remind the learners that they may not know the how to find the area of a trapezoid, but they know how to find the area of a parallelogram (refer to step 1). Add the red trapezoid to the original one as shown below for reference.



Give them 5 minutes to figure it out. After 5 minutes, ask them to **Turn and Talk**.

Step 3: Ask for learners" answers regardless if it is correct or wrong. List their answers down on the board. Then, either you or the learner discuss how to find the area of the trapezoid.

Worked Example

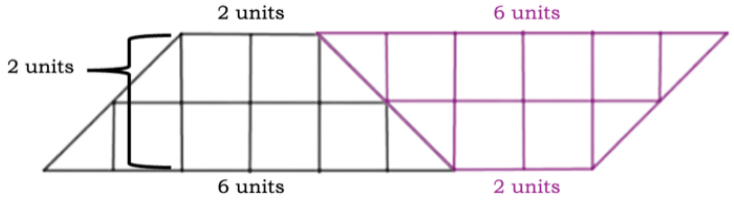
Step 1: Tell learners that the trapezoid is just **half** of the formed parallelogram. Hence, to find the area of the trapezoid, find the area of the parallelogram first, then divide it by two.

Step 2: Show that the base of the parallelogram is the sum of the two bases of the original trapezoid. While the height of the parallelogram is the height of the original trapezoid. Add the notations below.

Step 2: The figure can be shown using PowerPoint presentation or make a cut out using cartolina. The important thing is they see the red trapezoid moving.

Turn and Talk is a keyword which means you will ask learners to turn to their seatmates to compare their answers and solutions.

Step 3: If there are correct answers from learners, make them discuss their solution.



Base of parallelogram = base of trapezoid 1 + base of trapezoid 2
= 6 + 2 = 8
Height of the parallelogram = height of the trapezoid = 2

Step 3: Explain that to compute the area of the trapezoid, find the area of the parallelogram first by…
multiplying the base, which is the sum of the bases of the trapezoid…

$$b1 + b2$$

with the height of the trapezoid…

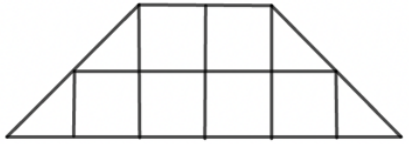
$$(b1 + b2)\, x\, h$$

Then, once the area of the parallelogram is found, divide it by two since the trapezoid is just half of the parallelogram…

$$\frac{(b1+b2)\, x\, h}{2}$$

Hence, the formula of the area of a trapezoid is $A = \frac{(b1+b2)\, x\, h}{2}$

Step 4: Return to the problem and solve the area of the trapezoid.



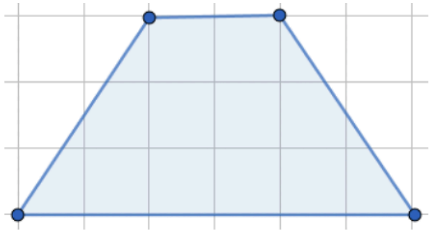
Base 1 = 6
Base 2 = 2
Height = 2

Solution:

$$A = \frac{(b1+b2)\,x\,h}{2} = \frac{(6+2)\,x\,2}{2} = \frac{8\,x\,2}{2} = \frac{16}{2} = 8\ square\ units$$

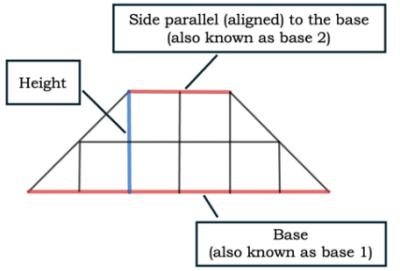
Lesson Activity

Step 1: Learners will work on activity no. 4, see sample item below. See Worksheet Activity No. 4. Return to the meaning of base 1, base 2 and height of a trapezoid.

Figures	Base 1	Base 2	Height	Area
	6	2	3	18

Step 2: Discuss the answers to the learners.

Step 1: Point the learners to the **definition of terms** written in the manila paper of cartolina. Refer to task 3 notes to teachers.



Step 2: You have the freedom on how to do this step.

D. Making Generalizations

Day 5

Learners' Takeaway

See Worksheet Activity no. 5. Working example means learners will draw their own parallelogram, triangle, and trapezoid with dimensions. Then, they will show a solution on how to compute the area of each shape.

Reflection on Learning

Step 1: Ask learners to **turn and talk** to discuss their answer to the question…

From deriving formulas for areas of parallelogram, triangle, and trapezoid, how finding areas using figures is related to finding areas using formulas?

After 5 minutes, select pairs of learners to share their reflections to the class

Start of Day 5 (Suggestion)

Including formative assessment

Ask the learners to complete the table as a summary of what they have learned for the week.

Turn and Talk is a keyword which means you will ask learners to turn to their seatmates to compare their answers and solutions.

<table>
<tr><th colspan="4">IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION</th><th>NOTES TO TEACHERS</th></tr>
<tr><td>A. Evaluating Learning</td><td colspan="3">Learners will answer the formative assessment. See Worksheet Activity No. 6.</td><td></td></tr>
<tr><td rowspan="5">B. Teacher's Remarks</td><td>Note observations on any of the following areas:</td><td>Effective Practices</td><td>Problems Encountered</td><td rowspan="5">Teachers are encouraged to record relevant observations or any critical teaching events that influence the attainment of the lesson objectives.
Use or modify the provided template in recording the notable instructional areas or concerns.

In addition, notes here can also be on tasks that will be continued the next day or additional activities needed.</td></tr>
<tr><td>strategies explored</td><td></td><td></td></tr>
<tr><td>materials used</td><td></td><td></td></tr>
<tr><td>learner engagement/ interaction</td><td></td><td></td></tr>
<tr><td>Others</td><td></td><td></td></tr>
<tr><td>C. Teacher's Reflection</td><td colspan="3">Reflection guide or prompt can be on:
▪ <u>principles behind the teaching</u>
What principles and beliefs informed my lesson?

Why did I teach the lesson the way I did?

▪ <u>learners</u>
What roles did my learners play in my lesson?

What did my learners learn? How did they learn?

▪ <u>ways forward</u>
What could I have done differently?

What can I explore in the next lesson?</td><td>Entries on this section are teacher's reflections about the implementation of the whole lesson, which will serve as input for the LAC sessions. Use or modify the provided guide questions in eliciting teacher's insights.</td></tr>
</table>