

Lesson Exemplar for Mathematics

Quarter 1
Lesson

3

Lesson Exemplar for Mathematics Grade 4
Quarter 1: Lesson 3 (Week 3)
SY 2024-2025

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MATHEMATICS / QUARTER 1 / GRADE 4

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES

A. Content Standards	The learners should have knowledge and understanding of the perimeter of quadrilaterals and composite figures composed of triangles and quadrilaterals.
B. Performance Standards	By the end of the quarter, the learners are able to... find the perimeter of quadrilaterals and composite figures composed of triangles and quadrilaterals.
C. Learning Competencies and Objectives	Find the perimeter of quadrilaterals that are not squares or rectangles At the end of the lesson, the learners will be able to: - calculate the perimeter of parallelograms; - give the formula for finding the perimeter of a parallelogram, rhombus, trapezoid, and other trapezoidal shapes; - solve for the perimeter of quadrilaterals such as parallelogram, rhombus, and trapezoid; - follow the correct formulas in solving for the perimeter of quadrilaterals.
D. Content	Perimeter of Quadrilaterals (Parallelogram, Rhombus, and Trapezoid)
E. Integration	Arts, Woodworking

II. LEARNING RESOURCES

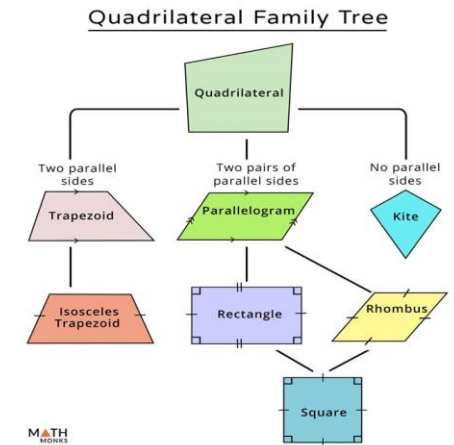
eSpark. (2023, February 2). Quadrilateral Song | Geometry and Polygons | 2nd-3rd Grade Math | eSpark Music. YouTube. <https://www.youtube.com/watch?v=MpDSqtD4DNg>
 Quadrilateral Hierarchy. (2023, August 3). Math Monks. <https://mathmonks.com/quadrilateral/quadrilateral-hierarchy>

III. TEACHING AND LEARNING PROCEDURE

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	DAY 1 1. Short Review Show students the Quadrilateral family and ask if they remember it. Processing Questions: Can you identify a real-world object that matches each type of quadrilateral (e.g., square, rectangle, rhombus, trapezoid/trapezium, parallelogram, kite)?	DAY 1 You can also start the lesson by using this short clip for a review of quadrilaterals. https://www.youtube.com/watch?v=MpDSqtD4DNg&ab_channel=eSpark

- Describe the object and explain why it fits the definition of that specific quadrilateral. For example, you might think of a square tile for a square or a kite toy for a kite.
- How do the properties of these objects align with the geometric properties of the corresponding quadrilaterals?

2. Feedback (Optional)



B. Establishing Lesson Purpose

DAY 1

1. Lesson Purpose

Show images of everyday objects and structures that have quadrilateral shapes, such as a picture frame (rectangle), a diamond-shaped window (rhombus), a tabletop (parallelogram), and a trapezoidal garden bed. Ask the following:

- Have you ever wondered how much material is needed to frame a picture?
- Why do builders need to know the perimeter of different shapes when constructing buildings?"

2. Unlocking Content Vocabulary

Match Column A to Column B.

Column A

- Perimeter
- Quadrilateral
- Parallelogram
- Formula
- Square

Column B

- A four-sided polygon
- The total distance around the edge of a shape
- A mathematics rule expressed in symbols
- A quadrilateral with opposite sides that are parallel and equal in length
- Four equal sides and angle

DAY 1

After asking, you may explain the purpose of the lesson: By the end of this lesson, you will be able to determine the amount of material needed to go around the edges of these shapes. This skill is helpful in many real-life situations, such as building, crafting, and designing games!

Answers:

- b
- a
- d
- c
- e

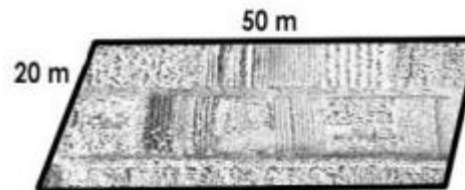
C. Developing and Deepening Understanding

DAY 2

SUB-TOPIC 1: Parallelograms and Rhombus

1. Explicitation

Mang Pedro planted his vegetable garden with varieties of vegetable seedlings for his family. His garden is in the shape of a parallelogram with a length of 50 m and a width of 20 m. What is the total distance around Mang Pedro's vegetable garden?



- What did Mang Pedro do to his vegetable garden?
- Why did he plant his garden with varieties of vegetable seedlings?
- What is asked in the problem?
- What are the given facts that can help you solve the problem?
- What can you say about Mang Pedro?

Explain that the perimeter is the total distance around a closed plane figure. To determine the perimeter of the vegetable garden of Mang Pedro, follow these steps:

- Identify the length and the width of the garden. Length= 50 m Width = 20 m
- Add the measurements of all the sides of the garden. Since the figure has 4 sides, we say that,

Perimeter = length + length + width + width. Then $P = l + l + w + w$

- Using the formula you developed, substitute the measurement of each side, then add.

$$P = l + l + w + w$$

$$P = 50 \text{ m} + 50 \text{ m} + 20 \text{ m} + 20 \text{ m}$$

$$P = 140 \text{ m}$$

Therefore, the perimeter or the distance around Mang Pedro's vegetable garden is 140 meters.

Perimeter of Parallelogram:

The perimeter of a parallelogram is calculated by adding the lengths of all its sides, as opposite sides are equal in length. Thus, you only need to know the lengths of two adjacent sides.

$$P = l + l + w + w$$

$$P = (2 \times \text{length}) + (2 \times \text{width}) \text{ or } P = 2l + 2w$$

DAY 2

Present a simple story problem for them to read, analyze, and solve. Guide learners using the processing questions provided. The following questions are SOLO questions from Unistructural to Relational. You may use this type of question to further assist the students learning.

Present a visual representation of the parallelogram-shaped garden as illustrated

Elicit Formulas Through Inquiry using Guided Discovery:

For a parallelogram: prompt students with the following questions:

- "How many sides does a parallelogram have?"
- "What do you notice about the opposite sides of a parallelogram?"
- "If we know the lengths of the adjacent sides, how can we find the total perimeter?"

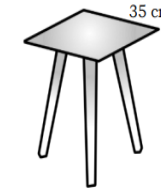
Guide them to derive:

$$P = 2(a + b)$$

$$P = 2(a + b)$$

Mang Jose built a rhombus- study table for his son. The sides of the table measure 45 cm. What is the perimeter of the table?

- What did Mang Jose build?
- What is the shape of the table?
- What is asked in the problem?
- What are the given facts that can help you solve the problem?



Present a visual representation of the rhombus table and explain their characteristics, emphasizing the four equal sides. Introduce the idea that calculating the perimeter of a rhombus involves adding up all the side lengths. Ex. The perimeter of the rhombus study-table

To find the perimeter of a rhombus table as illustrated above, follow these steps:

- Identify the measurement of the side. Side = 35 cm
- Since a rhombus has 4 equal sides, simply add all the lengths of the sides.

$$P = \text{Side} + \text{side} + \text{side} + \text{side}$$

$$P = 35 \text{ cm} + 35 \text{ cm} + 35 \text{ cm} + 35 \text{ cm}$$

$$P = 140 \text{ cm}$$

Perimeter of Rhombus:

$$P = s + s + s + s$$

$$P = 4 \times \text{side} \text{ or } P = 4 \times s \text{ or } 4s$$

2. Worked Example

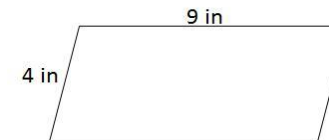
Example 1: Compute the perimeter of the parallelogram given below:

$$P = (2 \times \text{Length}) + (2 \times \text{Width})$$

$$P = (2 \times 9 \text{ in}) + (2 \times 4 \text{ in})$$

$$P = 18 \text{ in} + (8 \text{ in})$$

$$P = 26 \text{ in}$$



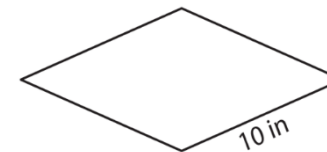
Example 2: Find the perimeter of a rhombus below:

$$\text{Side length} = 10 \text{ in}$$

$$P = 4 \times \text{side}$$

$$P = 4 \times 10 \text{ in}$$

$$P = 40 \text{ in}$$



3. Lesson Activity

See Worksheet Activity No. 1

See Worksheet Activity No. 2

where a and b are the lengths of the adjacent sides (length and width).

For a rhombus, use similar questions:

- "How many sides does a rhombus have?"
- "What is unique about the sides of a rhombus?"
- "If all sides are equal, how do we calculate the perimeter?"

Guide them to derive:

$$P = 4a$$

$P = 4a$, where a is the length of a side.

Lesson Activity No. 1 Answer:

A.1. 38 cm

2. 24cm

3. 40 cm

4. 24 cm

5. 50 cm

B.1. 130 cm

2. 22 cm

3. 230 cm

4. 350 cm

5. 144 cm

C.1. C

2. E

3. B

4. D

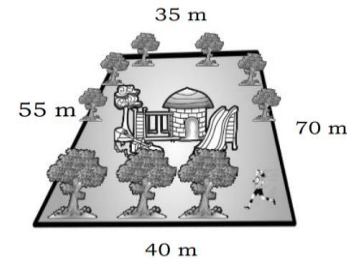
5. A

DAY 3

SUB-TOPIC 2: Trapezoid and Trapezoidal Shapes

1. Explication

Mrs. Mary Jane Reyes wants to stay fit, so she walks around the trapezoidal park every day before going to school. The Park measures 35 m, 40 m, 55 m and 70 m respectively. What is the total distance that Mrs. Camello covers every day?



- Who walks around the park every day before going to school?
- What is the shape of the park?
- What is asked in the problem?
- What are the given facts that can help you solve the problem?

The lengths of the sides of the trapezoidal park are as follows:

Side 1 = 35 m; Side 2 = 40 m; Side 3 = 55 m; Side 4 = 70 m

What to do with the sides? *Add the measurements of all the sides.*

$P = \text{side1} + \text{side 2} + \text{side 3} + \text{side 4}$

$P = s1 + s2 + s3 + s4$

$P = 35 \text{ m} + 40 \text{ m} + 55 \text{ m} + 70 \text{ m}$

$P = 200 \text{ m}$

Therefore, the perimeter of the trapezoidal park is 200 m.

How do we find the perimeter of this figure?

To find the perimeter of a trapezoid, add all the lengths of the sides.

$P = \text{Side1} + \text{side2} + \text{side3} + \text{side4}$

$P = 35 \text{ m} + 40 \text{ m (two parallel sides)} + 55 \text{ m} + 70 \text{ m (Two non-parallel sides)}$
 $P = 75 \text{ m} + 125 \text{ m} = 200 \text{ m}$

Therefore, the perimeter of the figure above is 200 m.

Perimeter of Trapezoid:

$P = \text{side 1} + \text{side 2 (parallel sides)} + \text{side 3} + \text{side 4 (nonparallel sides)}$

Lesson Activity No. 2 Answer:

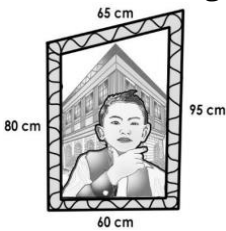
1. E
 2. B
 3. C
 4. D
 5. A
1. 600 cm
 2. 300 cm
 3. 180 cm
 4. 600 cm
 5. 128 cm

DAY 3

Present a simple story problem for them to read, analyze, and solve. Process it using the guide questions provided.

Present a visual representation of the trapezoidal park and explain its characteristics, emphasizing the four different measurements of its lengths. Ex. Perimeter of the Trapezoidal Park for a trapezoid, engage them with:

- "What is the definition of a trapezoid?"
- "How many sides does a trapezoid have, and which are parallel?"
- "How can we calculate the perimeter if we know the lengths of all four sides?"
- Guide them to derive:
 $P = a + b + c + d$, where $a, b, c,$

	2. Worked Example Example 1. My brother bought a trapezoidal frame with the following measurements: 60 cm, 65 cm, 80 cm, and 95 cm. What is its perimeter? - Who bought a frame? - What is the shape of the frame? - What is asked in the problem? - What are the given facts that can help you solve the problem? - What are the measurements of the sides of the frame? <i>The measurements of the sides of the frame are as follows: 60 cm, 65 cm, 80 cm, and 95 cm.</i>  3. Lesson Activity See Worksheet Activity No. 3	and d are the lengths of the four sides. Present a visual representation of the trapezoidal frame and explain its characteristics, emphasizing the four different measurements of its lengths. - What will you do again with the sides to find its perimeter? <i>Add all the sides.</i> - Call one pupil to show the correct formula and the number sentence of it Lesson Activity No. 3 Answer: I. 1. 32 cm 2. 63 cm 3. 49 cm 4. 20 cm 5. 36 cm II. 1. C 2. A 3. C 4. B 5. D
D. Making Generalizations	DAY 3 1. Learners' Takeaways - What is Perimeter? - How do we solve for the perimeter of a closed figure such as a parallelogram? rhombus? trapezoid? 2. Reflection on Learning When was the last time you miscalculated the perimeter of a shape like a rectangle, square, or trapezoid? How did you realize your mistake and what did you do to fix it?	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION

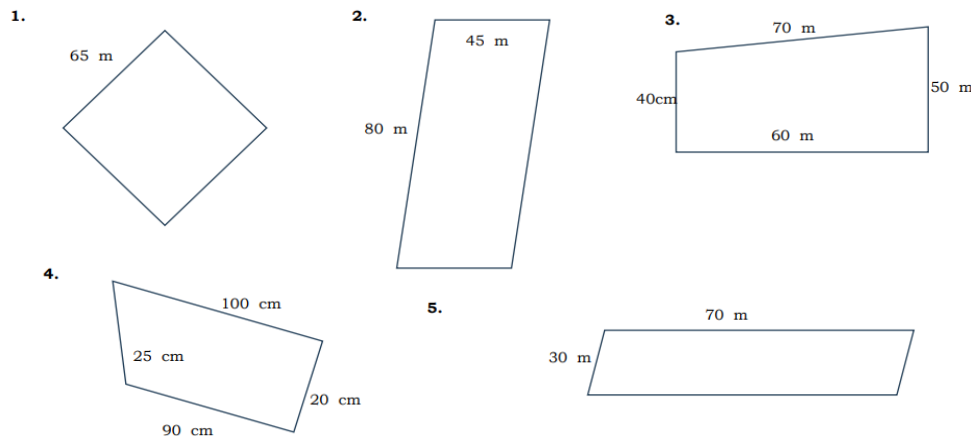
NOTES TO TEACHERS

A. Evaluating Learning

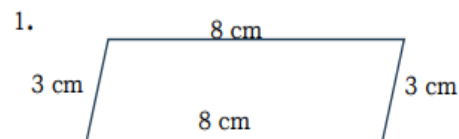
DAY 4

1. Formative Assessment

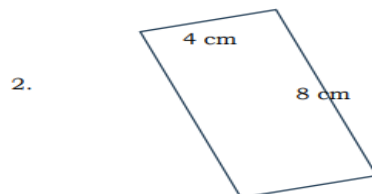
I. Solve for the perimeter of the following quadrilaterals.



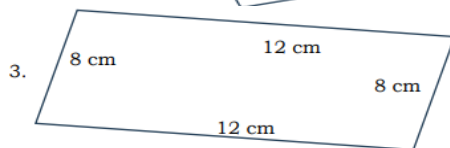
II. Choose the letter of the correct formula/ number sentence.



- 1.
- A. $8\text{ cm} + 8\text{ cm} + 3\text{ cm} + 3\text{ cm} = n$
- B. $8\text{ cm} + 8\text{ cm} + 8\text{ cm} + 8\text{ cm} = n$
- C. $3\text{ cm} + 3\text{ cm} + 3\text{ cm} + 3\text{ cm} = n$
- D. $8\text{ cm} + 3\text{ cm} + 3\text{ cm} + 3\text{ cm} = n$



- 2.
- A. $2 + (4\text{ cm} \times 8\text{ cm}) = n$
- B. $4 \times (4\text{ cm} + 8\text{ cm}) = n$
- C. $(2 \times 4\text{ cm}) + (2 \times 8\text{ cm}) = n$
- D. $(2 + 4\text{ cm}) \times (2 + 8\text{ cm}) = n$



- 3.
- A. $2 \times (12\text{ cm}) + 2 \times (8\text{ cm}) = n$
- B. $2 + 12\text{ cm} + 2 + 8\text{ cm} = n$
- C. $(8\text{ cm} \times 12\text{ cm}) + (8\text{ cm} \times 12\text{ cm}) = n$
- D. $(8\text{ cm} + 12\text{ cm}) \times 4\text{ cm} = n$

Answer:

- I.
1. 260 m
2. 250 m
3. 220 m
4. 235 cm
5. 200 m

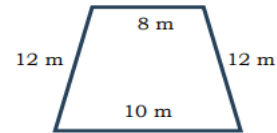
II.

1. A
2. C
3. A
4. D
5. C

III.

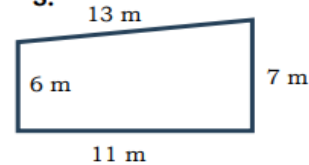
1. A. PARALLELOGRAM
B. 25 M
C. 18 M
D. $(2 \times 25) + (2 \times 18) = N$
E. 86 CM
2. A. TRAPEZOID
B. 10m., 15m., 35m., and 40m
C. $10\text{m} + 15\text{m} + 35\text{m} + 40\text{m}$
D. 100m
3. A. RHOMBUS
B. 60 CM
C. $4 \times 60 = N$
D. 240 CM

4.



- A. $8\text{ m} + 12\text{ cm} - 12\text{ cm} + 10\text{ cm} = n$
- B. $8\text{ m} + 12\text{ cm} \times 12\text{ cm} - 10\text{ cm} = n$
- C. $8\text{ m} \times 12\text{ cm} - 12\text{ cm} + 10\text{ cm} = n$
- D. $8\text{ m} + 10\text{ cm} + (2 \times 12\text{ cm}) = n$

5.



- A. $6\text{ m} + 7\text{ cm} - 13\text{ cm} \times 11\text{ cm} = n$
- B. $6\text{ m} + 7\text{ cm} \times 13\text{ cm} - 11\text{ cm} = n$
- C. $6\text{ m} + 7\text{ cm} + 13\text{ cm} + 11\text{ cm} = n$
- D. $6\text{ m} \times 7\text{ cm} + 13\text{ cm} - 11\text{ cm} = n$

III. Read and analyze each problem below. Then, fill in the needed data.

1. Anamarie, together with her friends, walks around the parallelogram park to stay fit. If the park has a length of 25 m and a width of 18 m, what is the distance that Anamarie and friends walk?
 - a. Shape of the Park:
 - b. Length:
 - c. Width:
 - d. Formula in Solving:
 - e. Perimeter of the Park:
2. A trapezoidal lot is to be planted with Santan plants all around. The sides of the lot measure 10 m., 15m., 35 m., and 40 m respectively. What is the perimeter of the lot?
 - a. Shape of the Lot:
 - b. Measurements of the sides:
 - c. Formula in Solving:
 - d. Perimeter of the Lot:
3. One side of a rhombus working table is 60 cm. Find its perimeter.
 - a. Shape of the working table:
 - b. Measurements of the sides:
 - c. Formula in Solving:
 - d. Perimeter of the working lot:

	2. Homework Creating Geometric Art Design Phase: Students will design an artwork that incorporates a rhombus, trapezoid, and parallelogram. They will plan their design on a piece of paper, deciding where each shape will be placed and how it will be decorated.			
B. Teacher's Remarks	<i>Note observations on any of the following areas:</i>	Effective Practices	Problems Encountered	The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement, and other related stuff. Teachers may also suggest ways to improve the different activities explored/lesson exemplar.
	strategies explored			
	materials used			
	learner engagement/ interaction			
	others			
C. Teacher's Reflection	<i>Reflection guide or prompt can be on:</i> <u>principles behind the teaching</u> What principles and beliefs informed my lesson? Why did I teach the lesson the way I did? <u>students</u> What roles did my students play in my lesson? What did my students learn? How did they learn? <u>ways forward</u> What could I have done differently? What can I explore in the next lesson?			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.