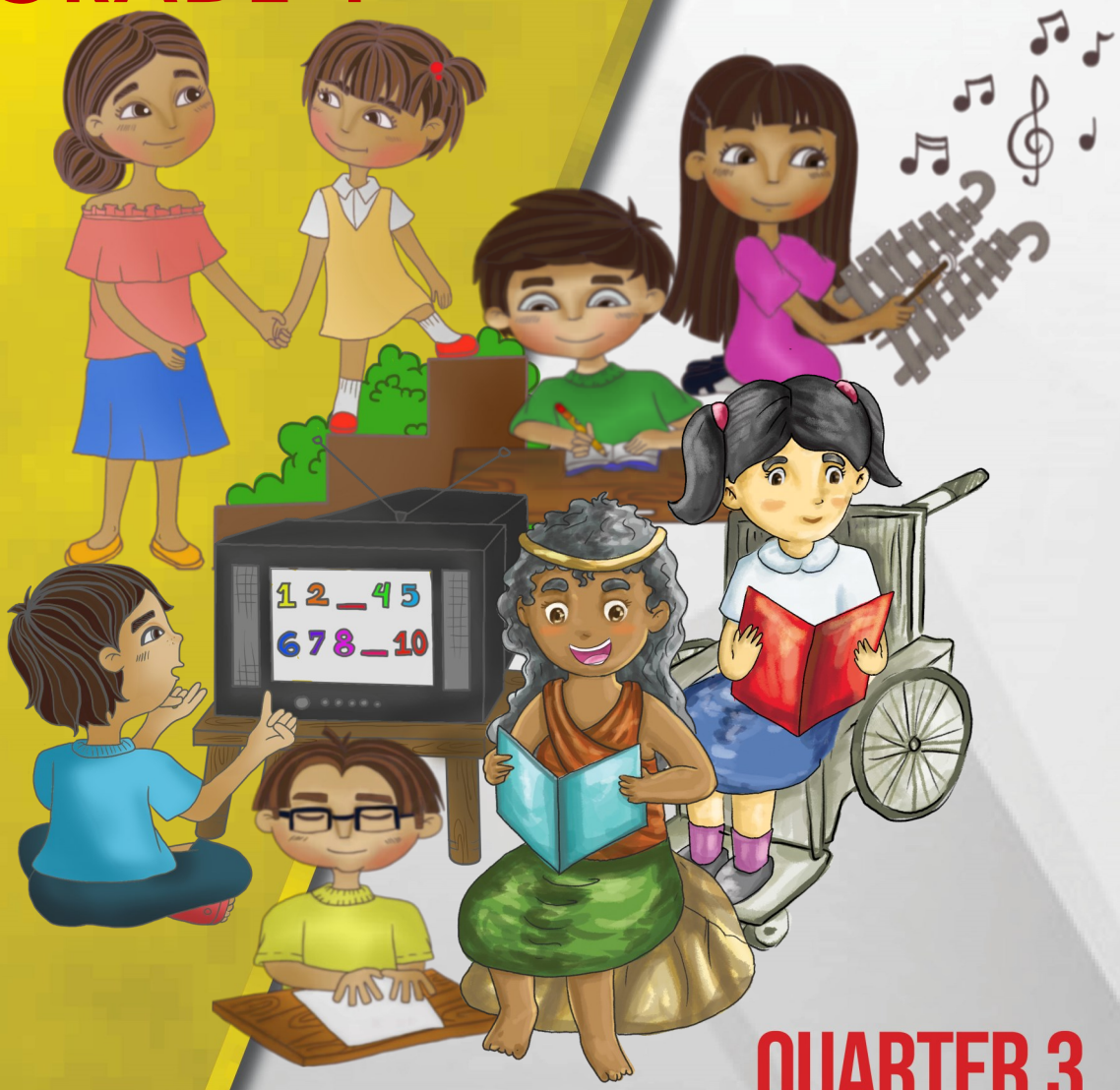
PIVOT 4A

LEARNER'S MATERIAL

MATHEMATICS

GRADE 4



QUARTER 3

Key Stage 2 SLM

MELC -based SLM

DepEd CALABARZON

Curriculum and Learning Management Division

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PIVOT 4A Learner's Material
Quarter 3
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Mathematics
Grade 4

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Guide in Using PIVOT 4A Learner's Material

For the Parents/Guardians

This module aims to assist you, dear parents, guardians, or siblings of the learners, to understand how the materials and activities are used in the new normal. It is designed to provide information, activities, and new learning that learners need to work on.

Activities presented in this module are based on the Most Essential Learning Competencies (MELCs) in **Mathematics** as prescribed by the Department of Education.

Further, this learning resource hopes to engage the learners in guided and independent learning activities at their own pace. Furthermore, this also aims to help learners acquire the essential 21st century skills while taking into consideration their needs and circumstances.

You are expected to assist the children in the tasks and ensure the learner's mastery of the subject matter. Be reminded that learners have to answer all the activities in their own notebook.

For the Learners

The module is designed to suit your needs and interests using the IDEA instructional process. This will help you attain the prescribed grade-level knowledge, skills, attitude, and values at your own pace outside the normal classroom setting.

The module is composed of different types of activities that are arranged according to graduated levels of difficulty—from simple to complex. You are expected to :

a. answer all activities in your notebook;

b. accomplish the **PIVOT Assessment Card for Learners on page 38** by providing the appropriate symbols that correspond to your personal assessment of your performance; and

c. submit the outputs to your respective teachers on the time and date agreed upon.

Parts of PIVOT 4A Learner's Material

	K to 12 Learning Delivery Process	Descriptions
Introduction	What I need to know	This part presents the MELC/s and the desired learning outcomes for the day or week, purpose of the lesson, core content and relevant samples. This maximizes awareness of his/her own knowledge as regards content and skills required for the lesson.
	What is new	
Development	What I know	This part presents activities, tasks and contents of value and interest to learner. This exposes him/her on what he/she knew, what he/she does not know and what he/she wants to know and learn. Most of the activities and tasks simply and directly revolve around the concepts of developing mastery of the target skills or MELC/s.
	What is in	
	What is it	
Engagement	What is more	In this part, the learner engages in various tasks and opportunities in building his/her knowledge, skills and attitude/values (KSAVs) to meaningfully connect his/her concepts after doing the tasks in the D part. This also exposes him/her to real life situations/tasks that shall: ignite his/ her interests to meet the expectation; make his/her performance satisfactory; and/or produce a product or performance which will help him/her fully understand the target skills and concepts .
	What I can do	
	What else I can do	
Assimilation	What I have learned	This part brings the learner to a process where he/she shall demonstrate ideas, interpretation, mindset or values and create pieces of information that will form part of his/her knowledge in reflecting, relating or using them effectively in any situation or context. Also, this part encourages him/her in creating conceptual structures giving him/her the avenue to integrate new and old learnings.
	What I can achieve	

This module is a guide and a resource of information in understanding the Most Essential Learning Competencies (MELCs). Understanding the target contents and skills can be further enriched thru the K to 12 Learning Materials and other supplementary materials such as Worktexts and Textbooks provided by schools and/or Schools Division Offices, and through other learning delivery modalities, including radio-based instruction (RBI) and TV-based instruction (TVI).

WEEK 1

Describing and Illustrating Parallel, Intersecting and Perpendicular Lines

Lesson I

As you recall, you have learned that lines were formed when two points are connected.

In this lesson you will learn to describe and illustrate parallel lines, intersecting lines and perpendicular lines.

Look at each illustration below.

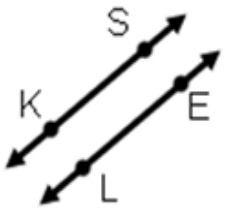


Figure 1

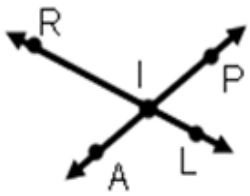


Figure 2

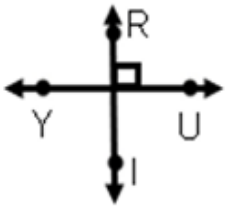
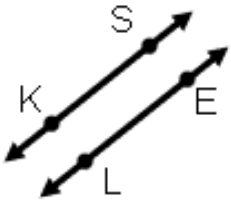


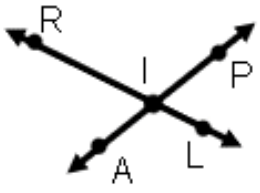
Figure 3

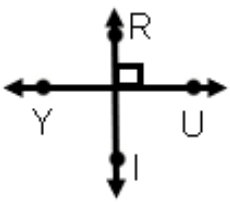
How many lines does each illustration have? What can you say about the lines in Figure 1? Figure 2? Figure 3?



Line KS and Line LE form a pair of parallel **lines.** They never cross even if they are extended.

Line RL and Line AP are **intersecting lines.** They intersect or cross each each other at point I.





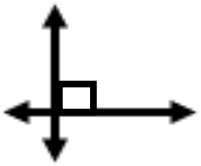
Line YU and Line RI are intersecting lines. They intersect in special way forming right angles. They are called **perpendicular lines.**

D

Learning Task 1: Tell whether the following are **parallel lines**, **intersecting lines**, or **perpendicular lines.** Write your answer on a separate sheet of paper.

1. 

_____

2. 

_____

3. 

_____

4. 

_____

5. 

_____

E

Learning Task 2 : Using a ruler, draw each pair of lines as described statements below. Write your answer on a separate sheet of paper.

1. Line AB is parallel to line CD.
2. Line EF intersects line GH at point I.
3. Line IJ is perpendicular to line KL.
4. Line MN is parallel to line OP.
5. Line QR is perpendicular to Line ST.

A

Fill in the blanks with the correct word/s to complete the statement. Write your answer on a separate sheet of paper.

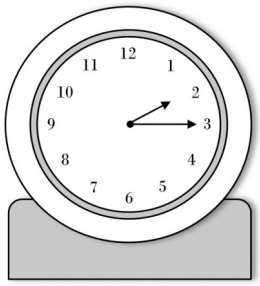
_____ are lines that do not cross. Intersecting Lines are lines that _____ or cross each other. Perpendicular Lines are lines that intersect and form _____ angles.

Describing and Illustrating Different Kinds of Angles

I Lesson

Ray is a part of a line that has one endpoint and goes infinitely in only one direction. When two rays meet at a common endpoint, angles were formed.

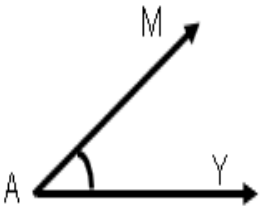
In this lesson you will learn to describe and illustrate different angles (right, acute and obtuse) using models.



Look at the hands of the clock.

How many rays does it form?

Let us label each ray as ray AM and ray AY.

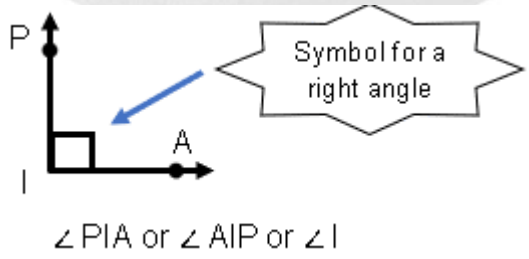


Ray AM meets with ray AY at point A. When two rays meet at a common endpoint, they form an **angle.** The common endpoint, Point A, is called the **vertex.** An angle is measured in degrees(^{0}).

We can name angles in 3 ways.

∠ MAY ∠ YAM ∠ A

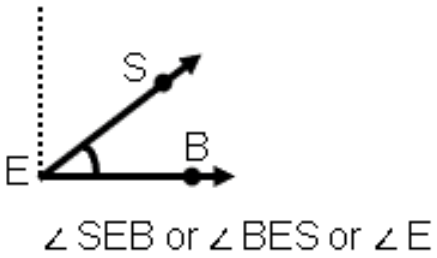
Angles can be classified according to its measure.



An angle that forms a square corner is a **right angle.**

A **right angle** measures 90^0.

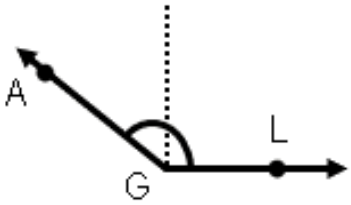
Angle PIA is a right angle.



An angle less than a right angle is an **acute angle.**

An **acute angle** measures less than 90^0.

Angle SEB is an acute angle.



∠ AGL or ∠ LGA or ∠ G

An angle greater than a right angle is an **obtuse angle.**

An **obtuse angle** measures more than 90^0 but less than 180^0.

Angle AGL is an obtuse angle.

D

Learning Task 1: Tell what kind of angle is shown by the following pictures. Write your answer on a separate sheet of paper.

1. 

_____

2. 

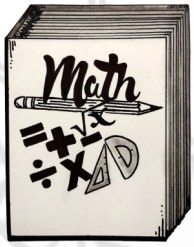
_____

3. 

_____

4. 

_____

5. 

_____

E

Learning Task 2: Draw the following angles on a separate sheet of paper.

1. ∠ KLG – acute angle
2. ∠ RZL – right angle
3. ∠ JAM – obtuse angle

A

Fill in the blanks with the correct word/s to complete the statement. Write your answer on a separate sheet of paper.

Angle is formed when _____ rays meet at a common endpoint. Angles can be classified according to its measures. A _____ measures 90^0. It forms a square corner. _____ measures less than 90^0. It is smaller than a right angle. _____ measures more than 90^0 but less than 180^0.

Properties of Triangles and Quadrilaterals

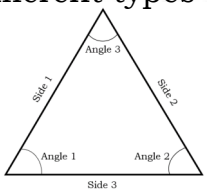
Lesson

I

Polygons are everywhere. They have different sizes, shapes and number of sides. Triangles and quadrilaterals are examples of polygons. In this lesson you will learn how to describe triangles and quadrilaterals by their properties.

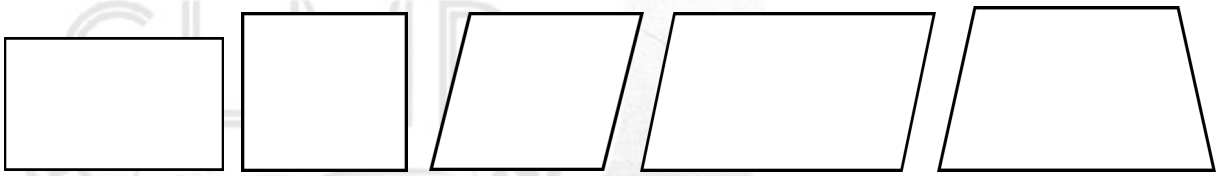
D

Polygons are 2-dimensional shape. It can be categorized into different types depending on the number of their sides and angles.



A **triangle** is a polygon with 3 sides and 3 angles.

Quadrilaterals are polygons with 4 sides and 4 angles. Rectangle, square, rhombus, parallelogram and trapezoid are examples of quadrilaterals.



Rectangle Square Rhombus Parallelogram Trapezoid

E

Learning Task 1: Tell whether each figure is a **triangle** or a **quadrilateral**. Write your answer on a separate sheet of paper.

1. 
2. 
3. 
4. 
5. 

_____ _____ _____ _____ _____

A

Fill in the blanks with the correct word to complete the statement. Write your answer on a separate sheet of paper.

Polygons are 2-dimensional shape. Triangles and quadrilaterals are examples of polygons. Triangles are polygons with ____ sides and 3 angles. _____ are polygons with 4 sides and 4 angles. Rectangle, _____ , rhombus, _____, and trapezoid are examples of quadrilaterals.

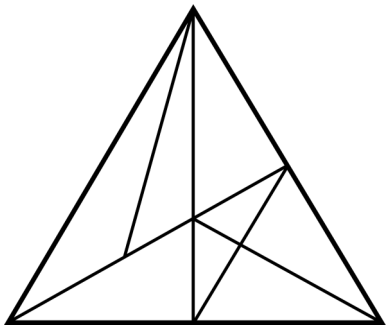
Identifying and Describing Triangles

Lesson

I

In the previous lesson, you have learned that a triangle is a polygon with 3 sides and 3 angles. This time, you will learn to identify and describe triangles according to its sides and angles.

Analyze the problem below.



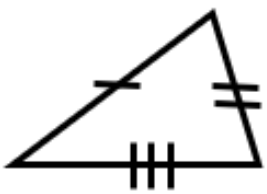
In the class of Mr. Loyola, he showed a big triangle. He divided the triangle into small triangles of different sizes. The illustration on the left shows how Mr. Loyola divided the triangle.

How many triangles does he have? Are the sides of these triangles equal? Are the angles of these triangles equal?

Triangles can be classified according to its sides.

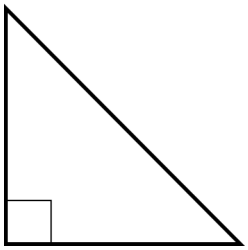
An **equilateral triangle** has 3 equal sides.

An **isosceles triangle** has 2 equal sides.

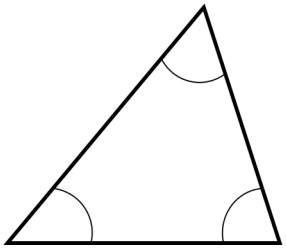


A **scalene triangle** has no equal sides.

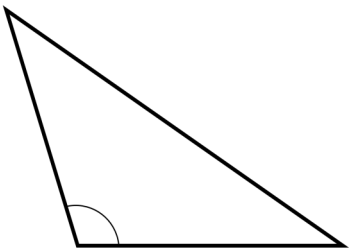
Triangles can be classified according to its angles.



A **right triangle** has a right angle which measures 90^0.



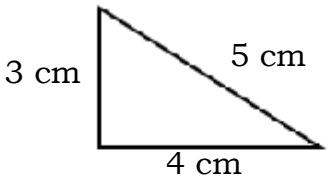
An **acute triangle** has 3 acute angles, each measuring less than 90^0.

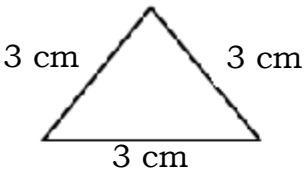


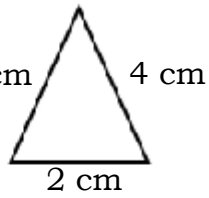
An **obtuse triangle** has an obtuse angle which measures more than 90^0.

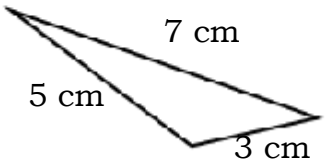
D

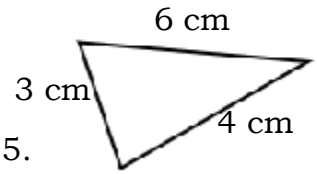
Learning Task 1: Name the following triangles according to its **sides**. Write your answer on a separate sheet of paper.

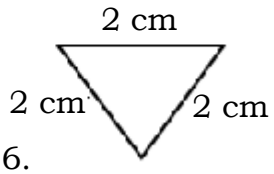
1. 

2. 

3. 

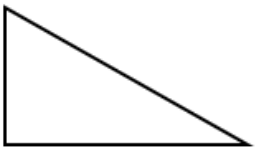
4. 

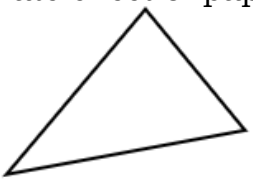
5. 

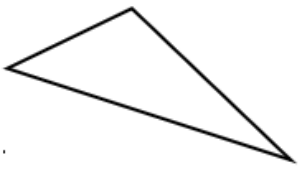
6. 

E

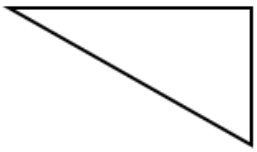
Learning Task 2: Name the following triangles according to its **angles**. Write your answer on a separate sheet of paper.

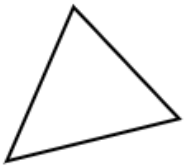
1. 

2. 

3. 

4. 

5. 

6. 

A

Fill in the blanks with the correct word/s to complete the statement. Write your answer on a separate sheet of paper.

Triangles can be classified according to its sides . An _____ triangle has 3 equal sides. An _____ triangle has 2 equal sides. A _____ triangle has no equal sides.

It can also be classified according to its angles. A _____ triangle has a right angle which measures 90^0. An _____ triangle has 3 acute angles, each measuring less than 90^0. An _____ has an obtuse angle which measures more than 90^0.

Identifying and Describing Different Quadrilaterals

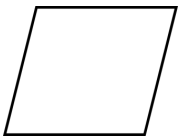
Lesson

I

One of the most common plane figures is the group of quadrilaterals. Quadrilaterals are polygons with 4 sides and 4 angles. In this lesson, you will learn to identify and describe the different kinds of quadrilaterals.

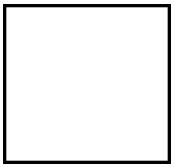
The following are different kinds of quadrilaterals:

A **parallelogram** is a quadrilateral with 2 pairs of parallel sides and its opposite sides are equal.



A **rhombus** is a parallelogram with 4 equal sides.

A **rectangle** is a parallelogram with 4 right angles. Its opposite sides are equal.

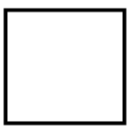


A **square** is a parallelogram with 4 right angles and 4 equal sides.

A **trapezoid** is a quadrilateral with only one pair of opposite sides that are parallel.

D

Learning Task 1: Name the following quadrilaterals. Write your answer on a separate sheet of paper.

1. 

2. 

3. 

4. 

5. 

E

Learning Task 2: Match the names of quadrilaterals in Column A with its description in Column B. Write the letter of your answer on a separate sheet of paper.

Column A	Column B
1. Square	a. with only one pair of opposite side are parallel
2. Trapezoid	b. with 4 right angles and 4 equal sides
3. Parallelogram	c. with 4 equal sides.
4. Rectangle	d. with 4 right angles and opposite sides are equal.
5. Rhombus	e. with 2 pairs of parallel sides and its opposite sides are equal.

A

Fill in the blanks with the correct word/s to complete the statement. Write your answer on a separate sheet of paper.

1. A quadrilateral is a shape that has 4 _____ and _____ angles.
2. A trapezoid has one pair of _____ sides.
3. A parallelogram has _____ pairs of parallel sides.
4. A rectangle is a parallelogram with _____ right angles and a square is a parallelogram with 4 right angles and _____ equal sides.
5. A _____ is a parallelogram with 4 equal sides.

Relating Quadrilateral to Another Quadrilateral

I

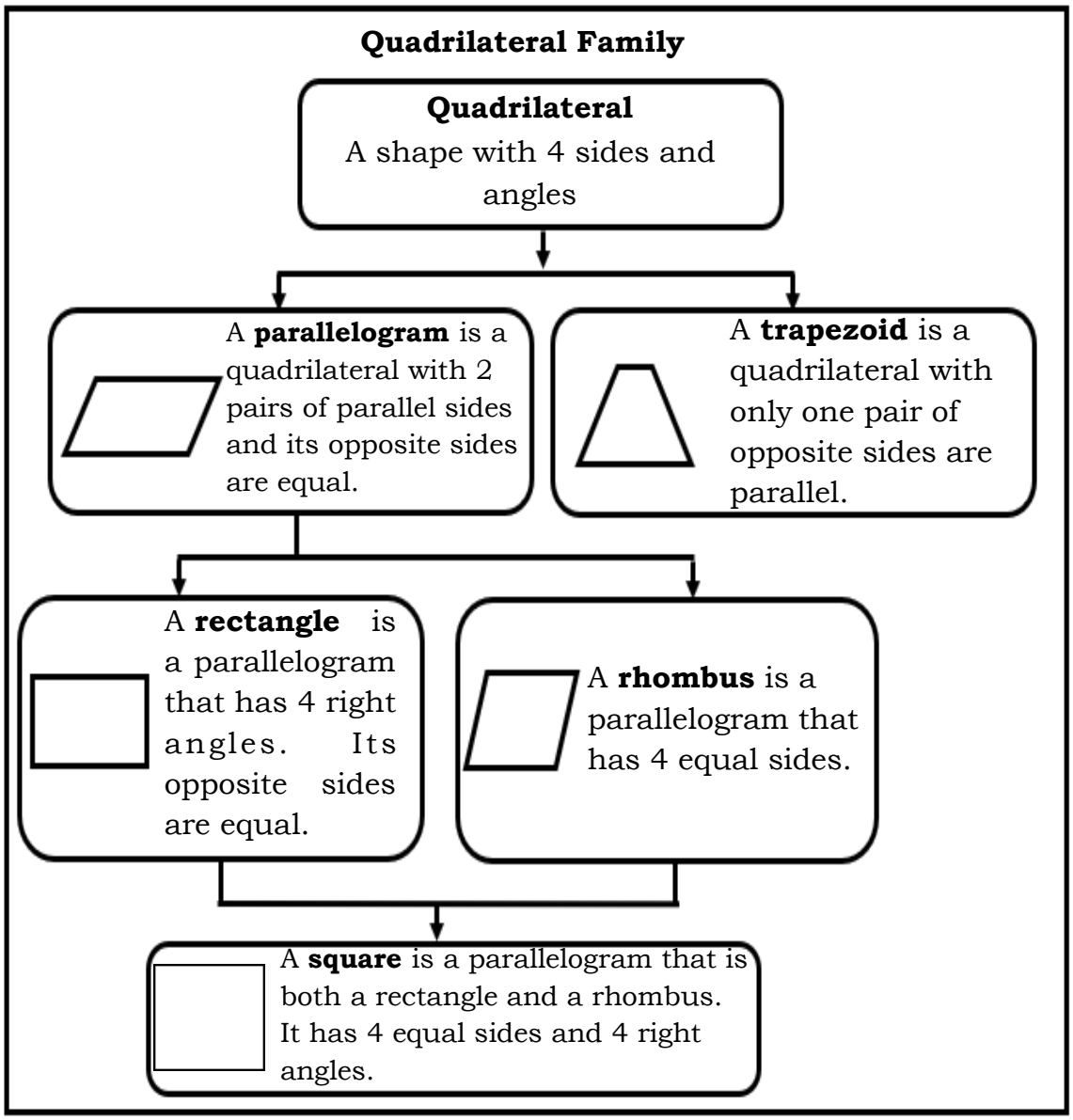
Lesson

In your previous lesson, you have learned to identify the different kinds of quadrilaterals. All quadrilaterals share the similarity of having four sides. They all have relationships with one another but they are not exactly the same and have different properties.

This time, you will learn more about quadrilaterals and their relationships with one another.

D

Study the family of quadrilaterals below.



As you can see on the illustration above, you can conclude that parallelograms and trapezoid are both quadrilaterals. It is also shown that a trapezoid is not an example of a parallelogram. Only the rectangle, rhombus, and square are parallelograms.

E

Learning Task 1: Draw a ☺ on your answer sheet if your answer is Yes and ☹ if it is No.

_____ 1. Is a parallelogram a quadrilateral?
_____ 2. Is a rectangle a parallelogram?
_____ 3. Is a square a rectangle?
_____ 4. Is a rectangle a square?
_____ 5. Is a parallelogram a rectangle?
_____ 6. Is a square a rhombus?
_____ 7. Is a trapezoid a quadrilateral?
_____ 8. Is a rhombus a square?
_____ 9. Is a square a parallelogram?
_____ 10. Is a parallelogram a trapezoid?

A

Fill in the blanks with the correct word to complete the statement. Write your answer on a separate sheet of paper.

Quadrilaterals

A quadrilateral is a shape that has _____ sides and _____ angles.

Two types of quadrilaterals are trapezoids and parallelograms.

A _____ has only one pair of parallel sides.
A parallelogram has two pairs of _____ sides.

Types of Parallelograms

A _____ is a parallelogram with _____ equal angles and two opposite sides equal.

A rhombus is a parallelogram with _____ equal angles and _____ equal sides.

A square is both _____ and a _____.

Finding the Missing Term/s in a Sequence of Numbers and Equations

Lesson

I

Look around you. Can you identify what objects have patterns?

Patterns are part of our everyday world. The things that you do every day follows a pattern. There are different types of patterns. Numbers are most commonly used to make pattern specially when you are skip counting. Odd and even numbers are used in number sequence.

In this lesson, you will learn to determine the missing terms in a sequence of even or odd numbers, and find the missing term in an equation. You will also be provided with different activities that will enhance your understanding about the said topic.

Look at the sequence of numbers. What are the missing terms?

Example 1: **6, 9, _____, 15, _____**

In the pattern above, you can get the missing terms by adding 3 to the preceding number. 9+ 3 = 12 and 15 + 3 = 18.

Therefore, the missing terms are 12 and 18.

Example 2: **44, 36, 28, _____, _____, 4**

The numbers are arranged in decreasing order. To find the missing terms you need to get the difference of two consecutive terms.

44—36 = 8 36—28 = 8 ; 28—8 = 20 20—8 = 12

Therefore, the missing terms are 20 and 12.

Example 3: **5, 7, 11, _____, 25, _____**

To find the missing terms in the pattern above you need to find the difference of the two consecutive terms. 7—5 = 2 and 11—7 = 4. The difference of the pattern is a multiple of 2. Adding the next multiple which is 6 to the number before the missing term which is 11 , you can get 17 and 17 + 8 = 25. To find the last term, 25 + 10 = 35. **Therefore, the missing terms are 17 and 35.**

Finding the Missing Term Using Distributive Property of Multiplication over Addition

Example:

4 x (3+ 5) = (4 x __) + (4 x __)

4 x 8 = 12 + 20

32 = 32

To find the missing terms, you need to expand the equation. Remember that in expanding the equation at the left you need to apply the distributive property of multiplication over addition. **Therefore the missing terms are 3 and 5.**

Finding the Missing Term Using Commutative Property of Addition

Example:

___ + 9 = 9 + 10

19 = 19

The missing term in the given equation at the left is 10 since changing the order of the addends does not affect its sum.

Finding the Missing Term Using Associative Property of Addition

Example:

(___ + 9) + 8 = 7 + (9 + 8)

24 = 24

Applying the associative property of addition, you can conclude that the missing term is 7. Since changing the grouping of the addends does not affect the sum of the equation.

D

Learning Task 1: Determine the last term of the sequence. Write your answer on a separate sheet of paper.

1. 8, 9, 11, 14, 18, ____
2. 5, 7, 11, 17, 25, ____
3. 8, 13, 23, 38, 58, ____
4. 9, 11, 14, 16, 19, ____
5. 6, 9, 12, 15, ____
6. 11, 16, 21, 26, ____

Learning Task 2: Find the missing terms in each of the following number sequence. Write your answer on a separate sheet of paper.

1. 22, 24, 26, ____, ____, 32
2. 31, 36, ____, ____, 51, 56
3. 84, ____, 76, 72, ____, 64
4. 63, 56, ____, 42, ____, 28
5. 2, 3, 5, ____, 12, ____
6. 56, 55, 52, 47, ____, _____

E

Learning Task 3: Supply the missing term/s in the equations below. Write your answer on a separate sheet of paper.

1. 6 + 12 + 57 = ____ + 12 + 57
2. 4 x (7 + 9) = (____ x 7) + (____ x 9)
3. 12 x ____ = ____ x 15
4. (14 + 7) + 8 = 14 + (____ + ____)
5. (12 + 6) + (2 + 3) = (2 + ____) + (____ + 6)
6. 18 x 9 = _____ x 18
7. 2 x (4 + 5) = (2 x ____) + (____ x 5)
8. (6 + 9) + 8 = 6 + (____ + _____)
9. 14 + ____ = _____+ 105
10. 3 + 6 + 9 = 9 + 6 + ____

A

Choose the word inside the box that will make the statement correct. Write your answer on a separate sheet of paper.

Patterns	Sequences	Difference
Terms	Arrangement	

_____ are arrangement or design you regularly found in an object. The _____ of an object should be easy to recognize and consistent.

_____ are list of numbers in orderly manner. The numbers in a sequence are called _____. Sometimes the _____ between two terms helps determine the missing terms in a given sequence.

WEEK 5

Finding Elapsed Time

Lesson I

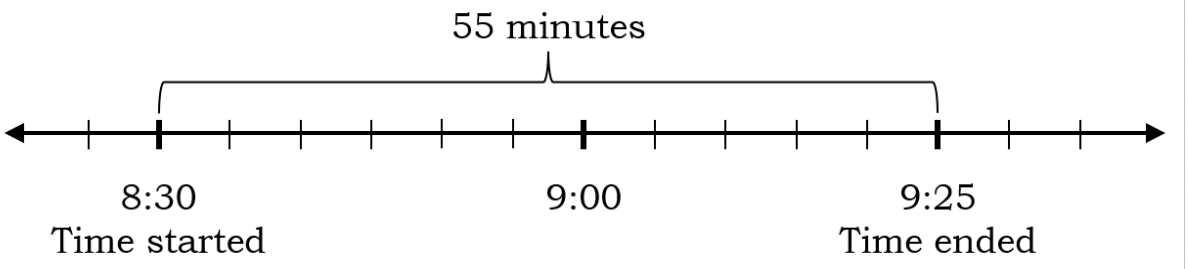
Have you ever wondered how much time you have spend in a certain activity? Were you able to solve for it?

Sometime we want to find out the duration of an activity. We can find the elapsed time if we know the starting time and finishing time. In this lesson, you will learn different ways on how to find the elapsed time.

Analyze the problem below.

Kyler started answering his Mathematics module at 8:30 in the morning. If he finished answering at 9:25 in the morning, how long did Kyler answer the module?

How will you solve this problem?



As shown in the number line above, you will notice that from 8:30 to 9:25 it takes 55 minutes.

You can also subtract to find the answer.

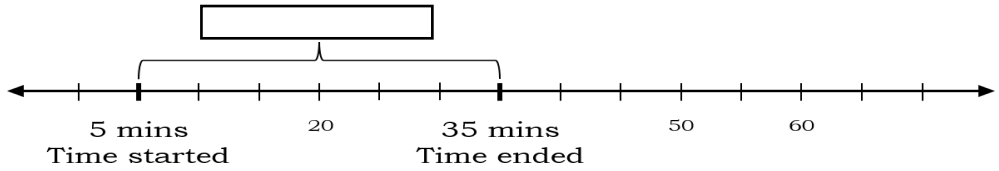
	8 : 60 + 25	Rename 1 hour as 60 minutes since 1 hour = 60 minutes.
9 : 25 →	8 : 85	Add 60 and 25 minutes.
- 8 : 30 →	- 8 : 30	Then, subtract.
	0 : 55	

Therefore, Kyler answered his module for 55 minutes. The duration or length of time that Kyler spent in answering his modules is called **elapsed time.**

D

Learning Task 1: Find the elapsed time shown by each number line. Write your answer on a separate sheet of paper.

1.



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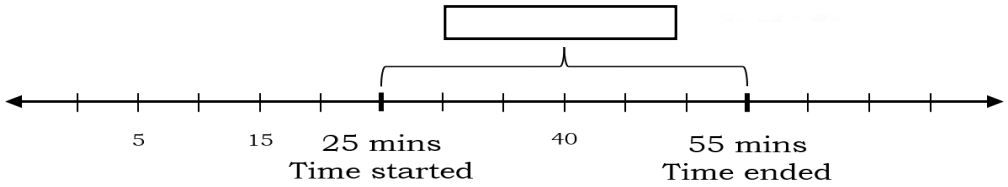

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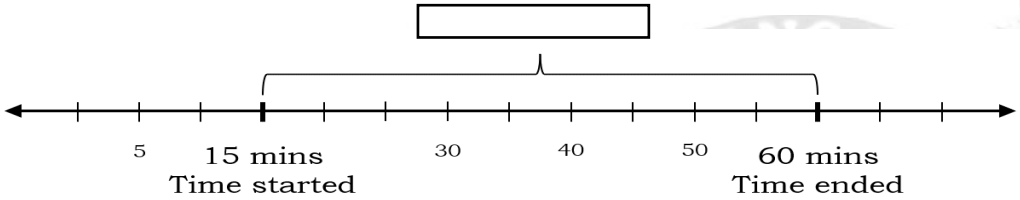


E

Learning Task 2: Complete the table by finding the elapsed time. Write your answer on a separate sheet of paper.

Time Started	Time Ended	Elapsed Time (number of minutes)
0:07:15	0:07:56	
0:04:05	0:04:48	
0:06:04	0:06:59	
2:05 p.m.	2:54 p.m.	
8:36 a.m.	9:12 a.m.	

A

Fill in the blanks with the correct word to complete the statement . Write your answer on a separate sheet of paper.

_____ is the duration or length of time an event happened. To find the elapsed time you can _____ the time when the event started from the time it ended or use _____. In using number line, count the number of seconds or minutes from the time the event started to the time the event _____.

Estimating Elapsed Time

Lesson

I

In your previous lesson, you have learned that elapsed time is the duration or the length of time an event happened. We can find elapsed time by subtracting the time started to the time ended.

In this lesson you will learn how to estimate the amount of time spent in an event or activity.

James walks everyday around the park. This morning, he started walking at 7:12 a.m. and ended at 7:48 a.m. *About how long* did he walk this morning?

What time did James start walking?

What time did he finish walking?

What is being asked in the problem?

Are you going to solve for the exact time James spent in walking around the park?

answer: No, the problem is asking for the estimated elapsed time spent by James in jogging.

What word clue in the problem helps you realize that your going to look for the estimated elapsed time?

answer: about how long

D

To solve for the estimated elapsed time, study the solution below.

	Actual Elapsed Time		Estimated Elapsed Times
Time Ended	7 : 48	→	7 : 50
Time Started	- 7 : 12	→	- 7 : 10
			0 : 40

Round off the minutes in the time ended and started to the nearest tens.

Then, subtract.

Therefore, James walked for about 40 minutes.

Example:

Mariberth arrived home at 5:19 p.m. If she left her office at 4:40 p.m., about how many minutes did it take her to reach home?

Study the solution below.

Estimated Elapsed Time			Actual Time	
	4 : 60 + 20			*4 : 60 + 19*
5 : 19 →	5 : 20	= 4 : 80	5 : 19 →	4 : 79
- 4 : 40 →	- 4 : 40	- 4 : 40	- 4 : 40 →	- 4 : 40
		0 : 40 mins		0 : 39 mins

note: 1 hour = 60 minutes

Therefore, Mariberth takes about 40 minutes to reach her home.

E

Learning Task 1: Complete the table by finding the elapsed time. Write your answer on a separate sheet of paper.

Time Started	Time Ended	Estimated Elapsed Time
11:19 p.m.	11:44 p.m.	
4:58 p.m.	5:06 p.m.	
11:15 a.m.	11: 46 a.m.	
9:13 a.m.	10:15 a.m.	
6:22 p.m.	6:55 p.m.	

A

Find the estimated and actual elapsed time in the problem below. Write your answer on a separate sheet of paper.

Mikee started eating her breakfast at 6:35 a.m. and finished eating at 7:03 a.m.

Estimated Elapsed Time: _____

Actual Elapsed Time: _____

Solving Problems Involving Elapsed Time

I Lesson

In your previous lesson, you have learned the different steps in solving word problem. These are finding what is being asked, what are given and what operation/s to be used to solve the problem. This time, you are going to use these steps to solve problems involving elapsed time.

Analyze the problem below.

Edith started reading her favorite book at 6:30 in the evening. She finished reading at 7:25 in the evening. How long did she read?

What time did Edith start reading?

What time did she finish reading?

How will you solve the problem?

D

Steps in Solving Word Problem

Understand:

1. What is asked in the problem? — ***The time Edith spent in reading***
2. What are the given? — ***time ended—7:25 p.m.***
   time started—6:30 p.m.

Plan:

3. What operation will you use? — ***Subtraction***
4. What is the number sentence? — ***7:25—6:30 = N***

Solve:

5. How is the solution done?

6 : 60 + 25

7 : 25 → ***6 : 85***

- 6 : 30 → ***- 6 : 30***

0 : 55

Check and Look back:

6. What will you do to check if your answer is correct?

Add the difference and the subtrahend.

6 : 30

+ 0 : 55

6: 85

6: 85 = 7:25

7. What is the answer to the problem?

Edith spent 55 minutes in reading.

E

Learning Task 1: Solve this problem. Write your answer on a separate sheet of paper.

1. The Grade 4 pupils of Mrs. Eroza took their summative test at 9:15 a.m. If they finished taking the test at 11:30 a.m., how long did they take the test?

a. What is asked ? _____

b. What are the given facts? _____

c. What operation is needed? _____

d. What is the number sentence? _____

e. How is the solution done? _____

f. What is the answer? _____

A

Challenge yourself with these problems!

Read and solve the problem below. Write your answer on a separate sheet of paper.

Yuri started rehearsing for her performance task in Music at 7:20 a.m. She ended at 9:30 a.m. How many minutes does she spend practicing?

WEEK 6

Measuring Perimeter

Lesson

I

Everything we see around us have a shape. These shapes appear in objects we see such as ball, buildings, cards, tables windows, balloons and many more. Have you ever wondered of measuring the length of those things? In this lesson you will learn to find the perimeter of different polygons such as triangles, squares, rectangles, parallelograms, and trapezoids.

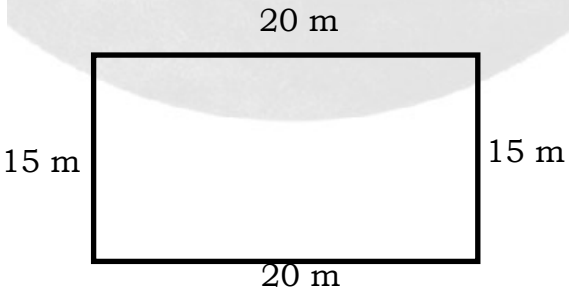
Analyze the problem below.

Pia wants to stay fit during this pandemic. She runs around a rectangular park every day before going to work. How many meters does Pia run if the length of the park is 20 meters and its width is 15 meters?

How will you solve the problem?

D

To solve for the answer to the problem, add the side measurements of the park.



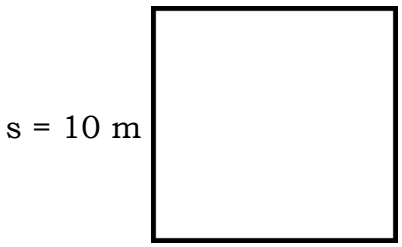
Let the rectangle at the left represent the park. The length and the width are the dimensions of the rectangle. To find the distance around the park, we add the measurement of its sides. Therefore, Pia walks a distance of 70 meters. This distance is called the **perimeter**.

P = 20m+20m+15m+15m

= 70 m

Perimeter is the distance around the polygon. To get the perimeter of a polygon, we add the measurements of all its sides.

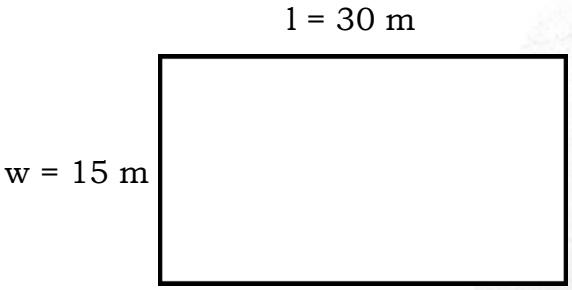
Analyze how the perimeter of the following polygons are obtained.



Square has 4 equal sides. Let **s** represent one side of the square. If **P** is the perimeter of the square, therefore P = s + s+ s + s.

P = 10 m + 10 m + 10 m + 10 m

= 40 m



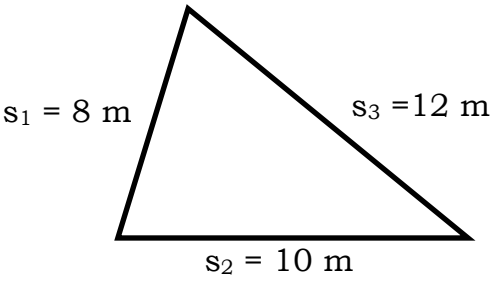
Rectangle has 2 pairs of parallel sides and its opposite sides are equal. Let **l** represent its length and **w** be its width. If **P** is the perimeter of the rectangle, therefore P = (2 x l) + (2 x w).

P = $2l + 2w$

= (2 x 30m) + (2 x 15m)

= 60 m + 30 m

= 90 m



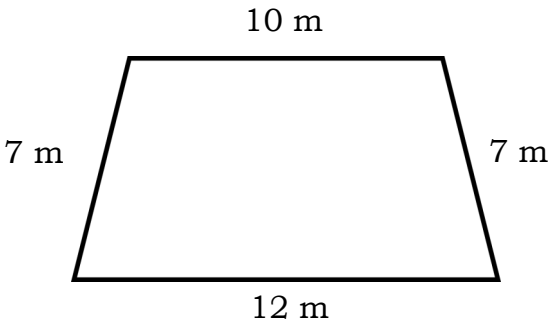
Triangle has 3 sides. Let **s** represent one side of the triangle. If **P** is the perimeter of the triangle,

therefore P = $s_1 + s_2 + s_3$.

P = $s_1 + s_2 + s_3$

= 8m + 10m + 12m

= 30 m

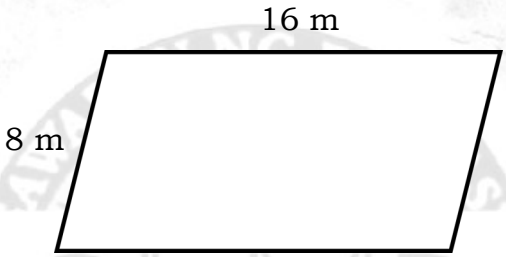


Trapezoid has 4 sides. Let **a, b, c,** and **d** represent the sides of the trapezoid. If **P** is the perimeter of the trapezoid, therefore

P = a + b + c + d

P = 10 m + 7 m + 7 m + 12 m

= 36 m



Parallelogram has 2 pairs of parallel sides and its opposite sides are equal. Let **a** represent the first pair of parallel sides of the parallelogram and **b** be the second pair of parallel sides. If **P** is the perimeter of the parallelogram, therefore

P = (2 x a) + (2 x b) .

P = (2 x 16 m) + (2 x 8 m)

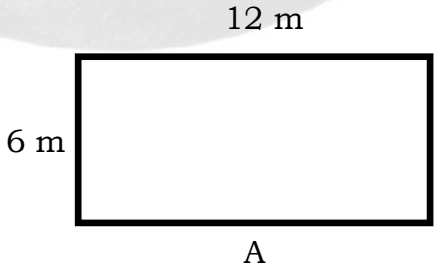
= 32 m + 16 m

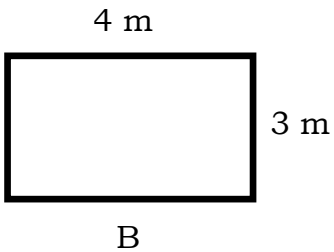
= 48 m

D

Learning Task 1: Compare the perimeters of the following polygons. Choose the letter of the polygon with greater perimeter. Write your answer on a separate sheet of paper.

1.





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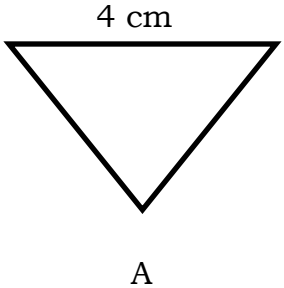
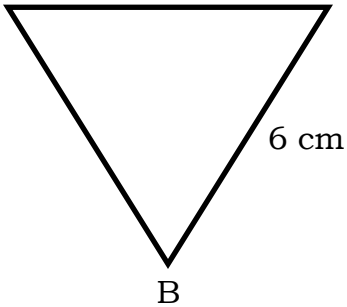
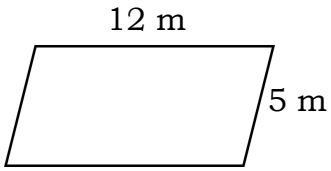
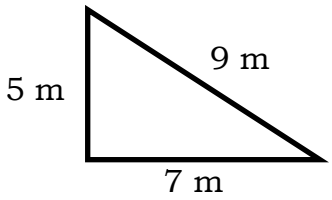
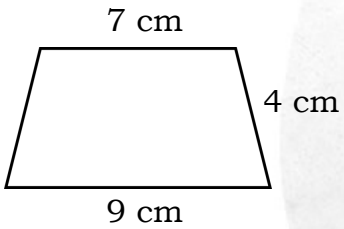
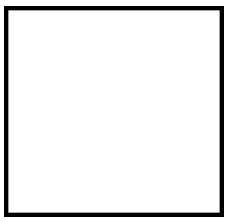
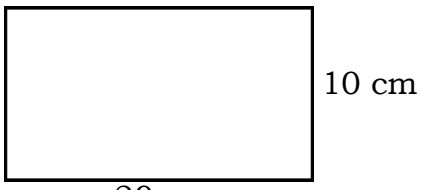
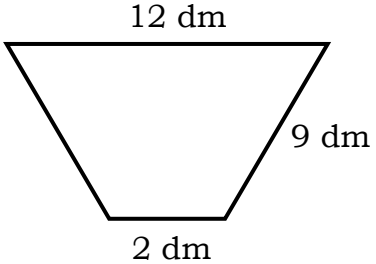




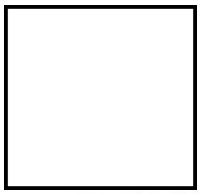
E

Learning Task 2: Give the formula in finding the perimeter of the following polygons, then solve for its perimeter. Write your answer on a separate sheet of paper.

		Formula	Perimeter
1.		_____	_____
2.		_____	_____
3.		_____	_____
4.		_____	_____
5.		_____	_____
6.		_____	_____

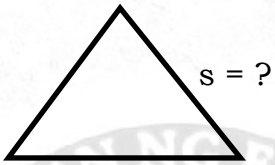
Learning Task 3: Solve for the measurement of the missing side. Write your answer on a separate sheet of paper.

1. P = 36 cm, square



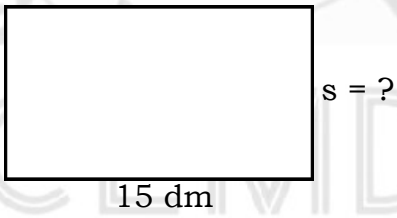
s = _____

2. P = 21 m, equilateral triangle



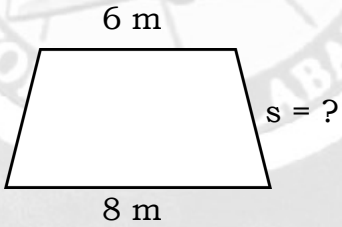
s = _____

3. P = 46 dm, rectangle



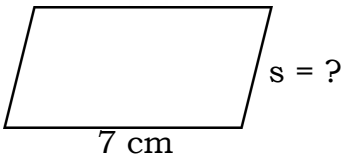
s = _____

4. P = 20 m, trapezoid



s = _____

5. P = 22 cm parallelogram



s= _____

A

Fill in the blanks with the correct word to correct the statement. Write your answer on a separate sheet of paper.

_____ is the distance around the polygon. To get the perimeter of a polygon, we _____ the measurements of all its sides.

Solving Routine and Non-Routine Problems Involving Perimeter

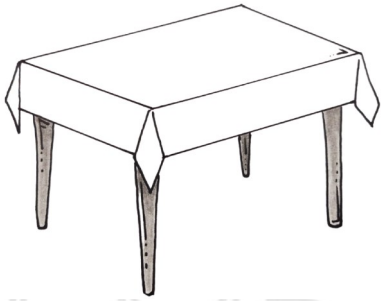
Lesson

I

As you recall, you have learned the different steps in solving word problem. These are finding the what is being asked, given and the operation to be used to solve the problem. This time, you are going to used those steps to solve problems involving perimeter of triangles, squares, rectangles, parallelograms, and trapezoids.

Analyze the problem below.

Sebie wants to put a lace at the edging of the table cloth. If the length of the table cloth is 95 cm and its width is 55 cm, how many centimeters of lace is needed to design the edging of the table cloth?



How will you solve the problem?

D

Steps in Solving Word Problem

Understand:

1. What is asked in the problem? ***The perimeter of the table cloth***

2. What are the given? ***95 cm—length, 55 cm—width***

Plan:

3. What operation will you use? ***addition and multiplication***

4. What is the number sentence? ***P = (2 x 95cm) + (2 x 55cm)***

Check and Look Back:

5. What is the answer to the problem? ***Sebie needs 300cm of lace to cover the edging of the table cloth.***

E

Learning Task 1: Solve the following problems. Write your answer on a separate sheet of paper.

1. Mary Ann wants to put a fence on her vegetable garden. The four sides of the garden measures 11m, 9m, 10m, and 13 meters, respectively. How many meters of fence will she need to cover her vegetable garden?

What is asked? _____

What are the given facts? _____

What is the process needed? _____

What is the number sentence? _____

What is the answer? _____

2. April has a rectangular cartolina with a length of 40 cm and a width of 20 cm. She cuts the cartolina into two squares. What is the perimeter of one square?

What is asked? _____

What are the given facts? _____

What is the process needed? _____

What is the number sentence? _____

What is the answer? _____

A

Solve the following problem using illustration. Write your answer on a separate sheet of paper.

A light post is to be placed around a square park. One side of the park measures 20 m, how many light posts are needed if it is placed 5 m apart?

Differentiating Perimeter from Area

Lesson

I

If you have switched the concept of perimeter and area before, you are not the only one! This lesson will help you differentiate perimeter from area.

Analyze the figures below.

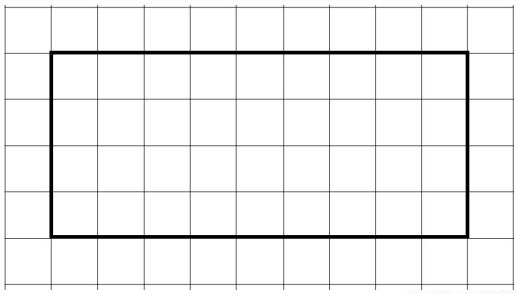


Figure A

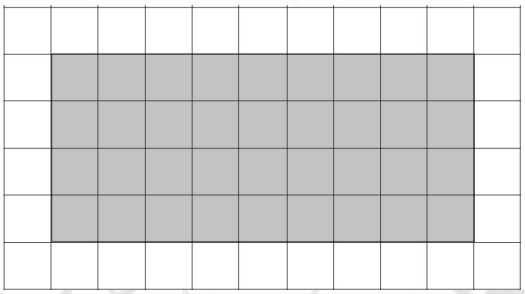


Figure B

Can you tell which figure shows perimeter? Which figure shows area?

D

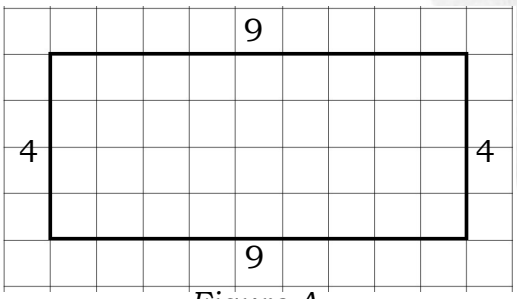


Figure A

9 + 4 + 9 + 4 = 26

P = 26 units

Figure A shows perimeter. **Perimeter** is the distance **around** a polygon. It is measured in **units**. If you will count the number of units around the shape at the left, you will find that the distance around it is 26. Therefore, *Figure A* has a perimeter of 26 units.

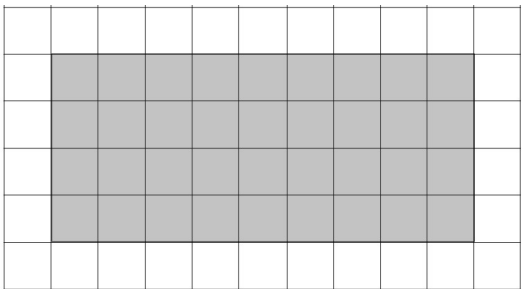


Figure B

Area = 36 square units

Figure B shows area. **Area** is the number of square units **inside** a polygon. It is measured in **square units**. If you will count the number of squares that the rectangle at the left covers up, you will find that 36 squares fit inside it. Therefore, *Figure B* has an area of 36 square units.

E

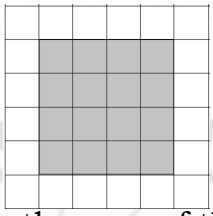
Learning Task 1: Read the questions below. Choose the letter of your answer and write it on a separate sheet of paper.

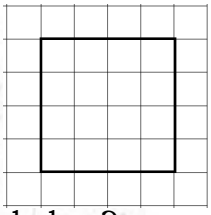
1. Perimeter is the distance around a polygon.

   A. True

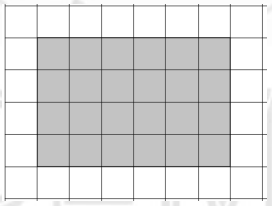
   B. False

2. Which picture shows the perimeter of the square?

A. 

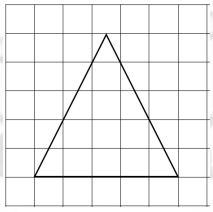
B. 

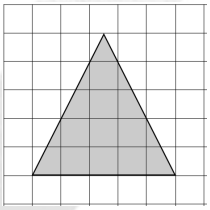
3. What is the area of the rectangle below?



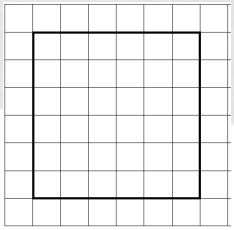
A. 24 square units B. 24 units

4. Which picture shows the area of the triangle?

A. 

B. 

5. What is the perimeter of square below?



A. 24 square units B. 24 units

A

Fill in the blanks with the correct word/s to complete the statement. Write your answer on a separate sheet of paper.

Perimeter is the distance _____ the polygon. It is measured in _____ while area is the number of square units _____ a polygon. It is measured in _____.

Converting Square Centimeters to Square Meters and Vice Versa

I Lesson

In this lesson, you will learn to convert square centimeters to square meters and vice versa.

Analyze the problem below.

Zuriel and Yuri help their mother in cleaning the yard. If the area of the yard is 20,000 sq cm, what is its equivalent in square meters?

What is the given area of the yard?

The given area is in what unit of measurement?

You are asked to convert the area to what unit of measurement?

D

Study the solution below.

Conversion Factor: 10 000 sq cm = 1 sq m

20 000 sq cm = _____ sq m

$$20\ 000 \text{ sq cm} \times \frac{1 \text{ sq m}}{10\ 000 \text{ sq cm}}$$

Multiply 20 000 sq cm to the conversion factor. Put the unit you want to be cancelled out on the denominator of the conversion factor.

$$20\ 000 \cancel{\text{sq cm}} \times \frac{1 \text{ sq m}}{10\ 000 \cancel{\text{sq cm}}}$$

Cancel the same unit.

$$= \frac{20\ 000}{10\ 000} \text{ sq m}$$

$$= 2 \text{ sq m}$$

Therefore, there are 2 square meters in 20 000 square centimeters.

Example:

Francine wants to find out how many square centimeters their house is, if its lot area measures 42 square meters.

$$42 \text{ sq m} \times \frac{10\,000 \text{ sq cm}}{1 \text{ sq m}}$$

Multiply 42 sq m by the conversion factor. Put the unit you want to be cancelled out on the denominator of the conversion factor.

$$42 \text{ sq m} \times \frac{10\,000 \text{ sq cm}}{1 \text{ sq m}}$$

Cancel the same unit.

$$= \frac{42\,000 \text{ sq cm}}{1}$$

$$= 42\,000 \text{ sq cm}$$

Therefore, there are 42 square centimeters in 42 square meters.

E

Learning Task 1: Convert the following units. Write your answer on a separate sheet of paper.

1. 230 000 sq cm = _____ sq m
2. 400 000 sq cm = _____ sq m
3. 60 000 sq cm = _____ sq m
4. 15 sq m = _____ sq cm
5. 120 sq m = _____ sq cm
6. 16 sq m = _____ sq cm

A

Fill in the blanks with the correct word/s to complete the statement. Write your answer on a separate sheet of paper.

- There are _____ sq cm in 1 sq m.
- To convert square centimeter to square meter, we _____ the given number by 10 000.
- To convert square meter to square centimeter, we _____ the given number by 10 000

Answer Key

Week 1 Lesson 1
Learning Task 1
1. parallel lines
2. perpendicular lines
3. intersecting lines
4. parallel lines
5. intersecting lines
Learning Task 2
Answers may vary

Week 1 Lesson 2
Learning Task 1
1. obtuse angle
2. acute angle
3. right angle
4. acute angle
5. right angle
Learning Task 2
Answers may vary

Week 1 Lesson 3
Learning Task 1
1. scalene triangle
2. equilateral triangle
3. isosceles triangle
4. scalene triangle
5. scalene triangle
6. equilateral triangle
4. obtuse triangle
5. right triangle
6. acute triangle

Week 1 Lesson 3
Learning Task 2
1. right triangle
2. acute triangle
3. obtuse triangle
4. obtuse triangle
5. right triangle
6. acute triangle

Week 2 Lesson 1
Learning Task 1
1. square
2. trapezoid
3. parallelogram
4. rectangle
5. rhombus
Learning Task 2
1. b 4. d
2. a 5. c
3. e

Week 3 Lesson 1
Learning Task 1
1. 😐 6. 😐
2. 😐 7. 😐
3. 😐 8. 😐
4. 😐 9. 😐
5. 😐 10. 😐

Week 4 Lesson 1
Learning Task 1
1. 23 4. 21
2. 35 5. 18
3. 83 6. 31
Learning Task 2
28, 30
41, 46
80, 68
49, 35
8, 17
54, 63

Week 4 Lesson 1
Learning Task 3
1. 6
2. 4,4
3. 15, 12
4. 7,8
5. 3,12
6. 9
7. 4,2
8. 9,8
9. 105, 14
10. 3

Week 5 Lesson 1
Learning Task 1
1. 30 mins.
2. 30 mins.
3. 45 mins.
Learning Task 2
1. 0:00:41
2. 0:00:43
3. 0:00:55
4. 0:00:49
5. 0:00:36

Week 5 Lesson 2
Learning Task 1
1. 20 mins.
2. 10 mins.
3. 30 mins.
4. 1 hour and 10 mins.
5. 40 mins.

Week 5 Lesson 3
Learning Task 1
Answers may vary

Week 6 Lesson 1
Learning Task 1
1. A
2. B
Learning Task 2
1. P = 2l + 2w , 34m
2. P = s+s+s , 21m
3. P = a+b+c+d , 24cm
4. P = 2l + 2w , 60dm
5. P = a+b+c+d , 32dm

Week 6 Lesson 1
Learning Task 3
1. 9cm
2. 7cm
3. 8dm
4. 3m
5. 4cm

Week 7 Lesson 1
Answers may vary

Week 8 Lesson 1
Learning Task 1
1. A
2. B
3. A
4. B
5. B

Week 8 Lesson 2
Learning Task 1
1. 23 sq. m
2. 40 sq. m
3. 6 sq. m
4. 150 000 sq. m
5. 1 200 000 sq. m
6. 160 000 sq. m

PIVOT Assessment Card for Learners

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below.

☆ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/lesson.

✓ - I was able to do/perform the task. It was quite challenging but it still helped me in understanding the target content/lesson.

? - I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Distribution of Learning Tasks Per Week for Quarter 2

Week 1	LP	Week 2	LP	Week 3	LP	Week 4	LP
Learning Task 1		Learning Task 1		Learning Task 1		Learning Task 1	
Learning Task 2		Learning Task 2		Learning Task 2		Learning Task 2	
Learning Task 3		Learning Task 3		Learning Task 3		Learning Task 3	
Learning Task 4		Learning Task 4		Learning Task 4		Learning Task 4	
Learning Task 5		Learning Task 5		Learning Task 5		Learning Task 5	
Learning Task 6		Learning Task 6		Learning Task 6		Learning Task 6	
Learning Task 7		Learning Task 7		Learning Task 7		Learning Task 7	
Learning Task 8		Learning Task 8		Learning Task 8		Learning Task 8	

Week 5	LP	Week 6	LP	Week 7	LP	Week 8	LP
Learning Task 1		Learning Task 1		Learning Task 1		Learning Task 1	
Learning Task 2		Learning Task 2		Learning Task 2		Learning Task 2	
Learning Task 3		Learning Task 3		Learning Task 3		Learning Task 3	
Learning Task 4		Learning Task 4		Learning Task 4		Learning Task 4	
Learning Task 5		Learning Task 5		Learning Task 5		Learning Task 5	
Learning Task 6		Learning Task 6		Learning Task 6		Learning Task 6	
Learning Task 7		Learning Task 7		Learning Task 7		Learning Task 7	
Learning Task 8		Learning Task 8		Learning Task 8		Learning Task 8	

Note: If the lesson is designed for two or more weeks as shown in the eartag, just copy your personal evaluation indicated in the first Level of Performance found in the second column up to the succeeding columns, i.e. if the lesson is designed for weeks 4-6, just copy your personal evaluation indicated in the LP column for week 4, week 5 and week 6. Thank you.

References

Department of Education. (2020). *K to 12 Most Essential Learning Competencies with Corresponding CG Codes*. Pasig City: Department of Education Curriculum and Instruction Strand.

Department of Education Region 4A CALABARZON. (2020). *PIVOT 4A Budget of Work in all Learning Areas in Key Stages 1-4: Version 2.0.* Cainta, Rizal: Department of Education Region 4A CALABARZON.

For inquiries or feedback, please write or call:

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https://tinyurl.com/Concerns-on-PIVOT4A-SLMs