JANUARY
Makugihon

FEBRUARY
Mahigugmaon

MARCH
Matinabangon

APRIL
Matinahuron

MAY
Mahapsay og Malimpyo

JUNE
Maabtik og Musunod sa Ihsaktong Orus

JULY
Maantigo og Maabilidad

AUGUST
Maginhunahunaon para sa Uban

SEPTEMBER
Madaginoton

OCTOBER
Matinud-anon

NOVEMBER
Masaligan

DECEMBER
Maalampuon

Republic of the Philippines
Department of Education
Regional Office IX, Zamboanga Peninsula

4

Zest for Progress
Zeal of Partnership

MATHEMATICS

4th QUARTER – Module 1:
AREA OF PLANE FIGURES

Name of Learner: _____

Grade & Section: _____

Name of School: _____

Mathematics – Grade 4
Alternative Delivery Mode
Quarter 4 - Module 1: Area of Plane Figures
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Secretary: Leonor Magtolis Briones
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Development Team of the Module

Writer:		**Randal Jay M. Ramos**
Editors:		**Emelyn D. Eslanan, Ed.D**
		Joseph T. Bernardo
Reviewers: EPS Mathematics		**Vilma A. Brown, Ed.D**
Principal		**Edlin H. Aizon**
Management Team: SDS		**Roy C. Tuballa, EMD, JD, CESO VI**
	ASDS	**Jay S. Montealto, CESO VI**
	ASDS	**Norma T. Francisco, DM, CESE**
	EPS Mathematics	**Vilma A. Brown, Ed.D**
	EPS LRMS	**Aida F. Coyme, Ed.D**

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Department of Education – Region IX, Zamboanga Peninsula
Office Address: Tiguma, Airport Road, Pagadian City
Telefax: (062) – 215 – 3751; 991 - 5975
E-mail Address: region9@deped.gov.ph

Introductory Message

This Self – Learning Module (SLM) is prepared for you, our dear learners, so that you can continue your studies while enjoying learning at home. The activities, questions, directions, exercises, and discussion (discussions) stated were formed for your better understanding of the lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided so that your teacher can identify how prepared you are to take the next lesson by yourself or if you need you're his/her assistance. At the end of each module, you need to answer the post-test to check your learning. Answer keys are provided so that you can check your answers immediately after taking each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you in your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests, and read the instructions carefully before completing each task.

If you have questions in using this SLM or have found any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.

What I Need to Know

This module was written to help you understand the steps in finding the measurements of regular and irregular area using the sq. cm and sq. m as units. The module follows a step – by – step sequence in computing the area and is supported with examples and exercises. It explains the area of irregular figures made up of squares, rectangles and regular figures such as triangles, parallelograms, and trapezoids using sq. cm and sq. m.

After going through the module, you are expected to:

- find the area of irregular figures made up of squares and rectangles using sq. cm and sq. m. (M4ME-IVa-55)
- find the area of triangles, parallelograms and trapezoids using sq. cm and sq. m. (M4ME-IVb-58)

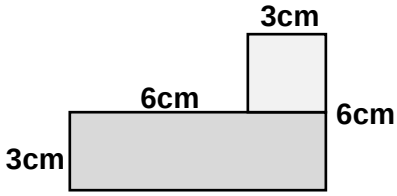
What I Know

Directions: Choose the letter that corresponds to your answer. Write your answer on a separate sheet.

1. Find the area of a lot whose side is 25m.

   a. 635 sq. m b. 625 sq. m c. 525 sq. m d. 635 sq. m.

2. Find the area of the given figure.



   a. 36 sq. m b.32 sq. cm c. 36 sq. cm d. 32 sq. m

3. The sail has the shape of a triangle whose base is 4m and height of 10m. Find the area.

   a. 20 sq. m b. 25 sq. m c. 20 sq. cm d. 25 sq. cm

4. A trapezoidal pool has a lower base of 7m and an upper base of 13m. Its height is 5m. Find the area of the pool.

   a. 60 sq. m b. 55 sq. m c. 50 sq. cm d. 50 sq. m

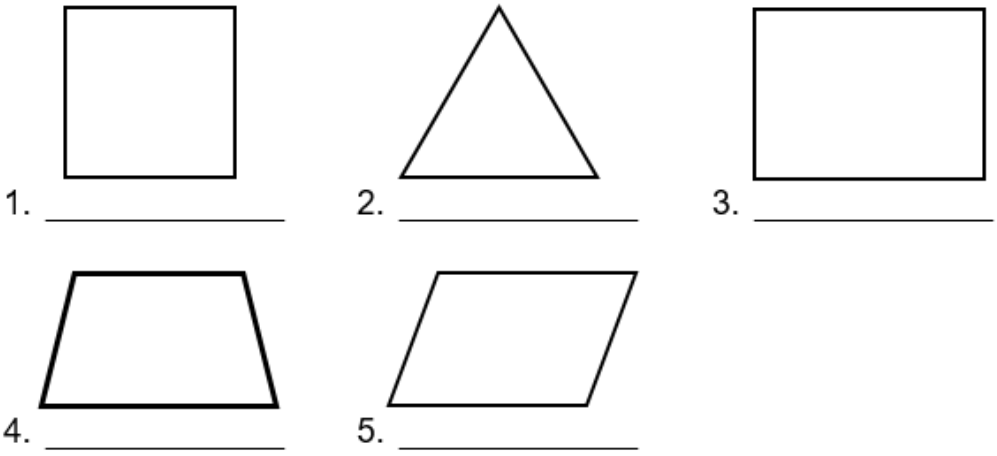
5. What formula will you use to find the area of the chalkboard?

   a. A = b x h b. A = ½ (b x h) c. A = l x w d. A = s^2

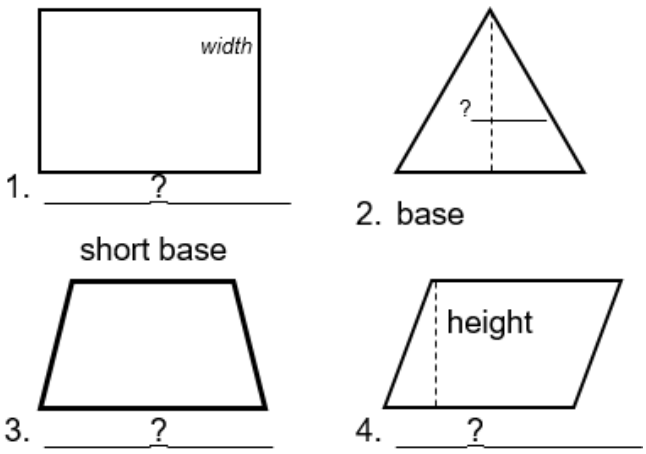
LESSON AREA OF PLANE FIGURES

What's In

A. Can you name the following shapes? Write your answer on a separate sheet.



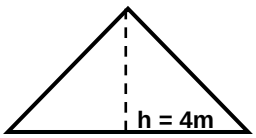
B. Are you familiar with the parts of the shapes? Choose from the words in the box and write it on a separate sheet.



base
length
height
long base

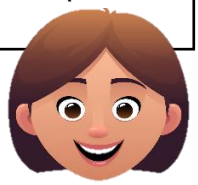
What's New

How do we find the area of a triangle, a parallelogram or a trapezoid?

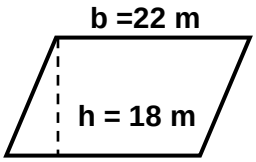


Triangle

In finding the area of a triangle we must:
1. Multiply its base (b) with its height (h); then
2. Multiply the product with ½ !



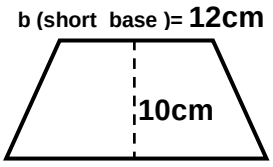
$$A = \frac{1}{2}(b \times h)$$
$$A = \frac{1}{2}(10m \times 4m)$$
$$A = \frac{1}{2}(40\ sq.m.)$$
$$\boldsymbol{A = 20\ sq.m.}$$



Parallelogram

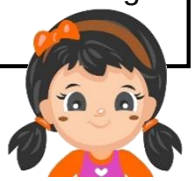
In finding the area of a parallelogram, the base should be multiplied with height!

$$A = b \times h$$
$$A = 22\ m \times 18\ m$$
$$\boldsymbol{A = 396\ sq.m}$$



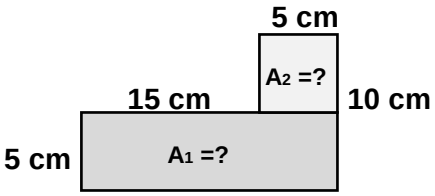
Trapezoid

In finding the area of a trapezoid:
1. Add the long (a) and short bases (b).
2. Then, divide it by 2.
3. Multiply it with height (h).



$$A = \frac{a+b}{2} \times h$$
$$A = \frac{16\ cm + 12\ cm}{2} \times 10\ cm$$
$$A = \frac{28\ cm}{2} \times 10\ cm$$
$$A = 14\ cm \times 10\ cm$$
$$\boldsymbol{A = 140\ sq.cm}$$

How do we find the area of these irregular figures?



QUESTIONS:

1. Can you identify the figures? What are those? ***Yes. 1 rectangle and 1 square***

2. If you will join them, what kind of figure is formed? ***Irregular figure / A figure with an irregular shape.***

3. How many figures are there? ***2 figures***

4. What is the total area of these figures?

STEP 1: Compute the area of the first figure. **A1 =** length x width **A1 =** 20cm x 5cm **A1 = 100 cm^2**	**STEP 2**: Compute the area of the second figure. **A2 =** side x side **A2 =** 5cm x 5cm **A2 = 25 cm^2**
STEP 3. Find the sum of the area of the first and second figure and you get the total area! Total Area = A1 + A2 Total Area = 100 cm^2 + 25 cm^2 **Total Area = 125 cm^2**	

What is It

! Finding the Area of Regular Figures: Triangle, Parallelogram and Trapezoid

A. In finding the area of a triangle:
   1) Multiply its base (b) with its height (h)
   2) Multiply the product with ½.

B. In finding the area of a parallelogram, multiply its base with its height.

C. In finding the area of a trapezoid:

1) Get the sum of the long and short bases, then divide it by 2.
2) Multiply the quotient with the given height.

! Finding Area of Irregular Figures

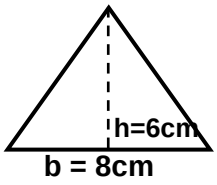
In finding the area of irregular figures involving squares and rectangles, remember the following simple tips:

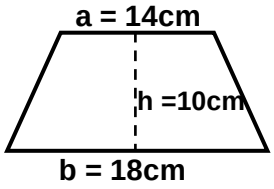
1. study the figure;
2. arrange the figure into squares and rectangles;
3. find the area of each part of squares and rectangles;
4. add the areas of each part to get the total area; and
5. express the area in square units.

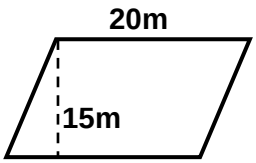
What's More

ACTIVITY 1

A. Directions: Find the area of the following figures.

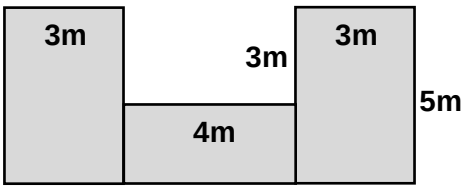
1. 

2. 

3. 

ACTIVITY 2

B. Directions: Study the figure and find the area.

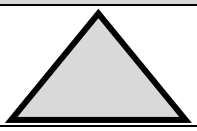


What I Have Learned

REMEMBER!

An **irregular figure** is a figure that is not in a standard shape. But these irregular figures are made up of two or more squares and/or rectangles. To find its area, we can split it into figures either squares or rectangles. Lastly, we add the areas of two or more figures to get the total area of the irregular figure.

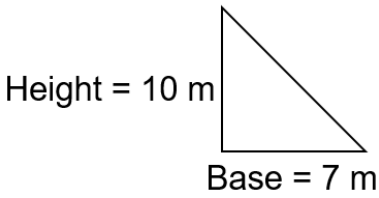
The following formulas are used in finding the area of the different figures.

SHAPE	FIGURE	FORMULA
Triangle		$A = \frac{1}{2}(b \times h)$
Parallelogram		$A = b \times h$
Trapezoid		$A = \frac{a+b}{2} \times h$

What I Can Do

Directions: Read each problem carefully. Follow the given directions.

1. A triangle has a base of 7 m and a height of 10 m. Find its area.

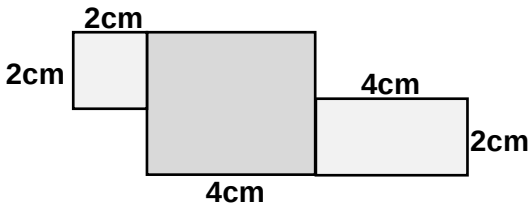


2. A parallelogram has a base of 12cm and a height of 8cm. Illustrate the figure and find the area.
3. A trapezoidal pool has an upper base of 15m and lower base of 25m. Its height is 8m. Draw the pool and find the area.

Assessment

Directions: Choose the letter that corresponds to your answer. Write your answer on a separate sheet.

1. Find the area of a given figure.
   a. 27 sq. m. c. 28 sq. mm.
   b. b. 28 sq. cm. d. 28 sq. m.

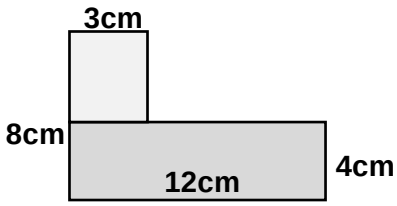


2. The roof has the shape of a triangle whose base is 12m and height of 4m. Find the area of the roof.
   a. 24 sq. m. b. 25 sq. m. c. 25 sq. cm. d. 26 sq. cm.

3. A trapezoidal court has a lower base of 15m and an upper base of 23m. Its height is 12m. Find the area of the court.
   a. 218 sq. m. b. 225 sq. m. c. 228 sq. m. d. 328 sq. m.

4. Find the area of a parallelogram whose base is 8m and height of 6m.
   a. 45 sq. m. b. 45 sq. cm. c. 48 sq. cm. d. 48 sq. m.

5. Find the area of the given figure.
   a. 50 sq. m. c. 60 sq. cm.
   b. 60 sq. m. d. 65 sq. cm.



Answer Key

What I Know:
1. b 2. c 3. a 4. d 5. c

What's In:
A. 1. Square 2. Triangle 3. Rectangle 4. Trapezoid 5. Parallelogram
B. 1. Length 2. Height 3. Long Base 4. Base

What's More:
A.) 1. 24 sq. cm 2. 160 sq. cm 3. 300 sq. m.
B.) 1. 38 sq. m

What I Can Do:
1. 35 sq. m 2. 96 sq. cm 3. 160 sq. m

Assessment:
1. b 2. a 3. c 4. d 5. c

References:

Alma R. Tabalang , et. Al., *Mathematics 4 Learners Materials* Pasig: LEXICON PRESS, INC., 2015, 231 – 244.

I AM A FILIPINO
by Carlos P. Romulo

I am a Filipino – inheritor of a glorious past, hostage to the uncertain future. As such, I must prove equal to a two-fold task – the task of meeting my responsibility to the past, and the task of performing my obligation to the future.

I am sprung from a hardy race – child many generations removed of ancient Malayan pioneers. Across the centuries, the memory comes rushing back to me: of brown-skinned men putting out to sea in ships that were as frail as their hearts were stout. Over the sea I see them come, borne upon the billowing wave and the whistling wind, carried upon the mighty swell of hope – hope in the free abundance of the new land that was to be their home and their children's forever.

This is the land they sought and found. Every inch of shore that their eyes first set upon, every hill and mountain that beckoned to them with a green and purple invitation, every mile of rolling plain that their view encompassed, every river and lake that promised a plentiful living and the fruitfulness of commerce, is a hollowed spot to me.

By the strength of their hearts and hands, by every right of law, human and divine, this land and all the appurtenances thereof – the black and fertile soil, the seas and lakes and rivers teeming with fish, the forests with their inexhaustible wealth in wild and timber, the mountains with their bowels swollen with minerals – the whole of this rich and happy land has been for centuries without number, the land of my fathers. This land I received in trust from them, and in trust will pass it to my children, and so on until the world is no more.

I am a Filipino. In my blood runs the immortal seed of heroes – seed that flowered down the centuries in deeds of courage and defiance. In my veins yet pulses the same hot blood that sent Lapulapu to battle against the alien foe, that drove Diego Silang and Dagohoy into rebellion against the foreign oppressor.

That seed is immortal. It is the self-same seed that flowered in the heart of Jose Rizal that morning in Bagumbayan when a volley of shots put an end to all that was mortal of him and made his spirit deathless forever; the same that flowered in the hearts of Bonifacio in Balintawak, of Gregorio del Pilar at Tirad Pass, of Antonio Luna at Calumpit, that bloomed in flowers of frustration in the sad heart of Emilio Aguinaldo at Palanan, and yet burst forth royally again in the proud heart of Manuel L. Quezon when he stood at last on the threshold of ancient Malacanang Palace, in the symbolic act of possession and racial vindication. The seed I bear within me is an immortal seed.

It is the mark of my manhood, the symbol of my dignity as a human being. Like the seeds that were once buried in the tomb of Tutankhamen many thousands of years ago, it shall grow and flower and bear fruit again. It is the insigne of my race, and my generation is but a stage in the unending search of my people for freedom and happiness.

I am a Filipino, child of the marriage of the East and the West. The East, with its languor and mysticism, its passivity and endurance, was my mother, and my sire was the West that came thundering across the seas with the Cross and Sword and the Machine. I am of the East, an eager participant in its struggles for liberation from the imperialist yoke. But I know also that the East must awake from its centuried sleep, shake off the lethargy that has bound its limbs, and start moving where destiny awaits.

For I, too, am of the West, and the vigorous peoples of the West have destroyed forever the peace and quiet that once were ours. I can no longer live, a being apart from those whose world now trembles to the roar of bomb and cannon shot. For no man and no nation is an island, but a part of the main, and there is no longer any East and West – only individuals and nations making those momentous choices that are the hinges upon which history revolves. At the vanguard of progress in this part of the world I stand – a forlorn figure in the eyes of some, but not one defeated and lost. For through the thick, interlacing branches of habit and custom above me I have seen the light of the sun, and I know that it is good. I have seen the light of justice and equality and freedom, my heart has been lifted by the vision of democracy, and I shall not rest until my land and my people shall have been blessed by these, beyond the power of any man or nation to subvert or destroy.

I am a Filipino, and this is my inheritance. What pledge shall I give that I may prove worthy of my inheritance? I shall give the pledge that has come ringing down the corridors of the centuries, and it shall be compounded of the joyous cries of my Malayan forebears when first they saw the contours of this land loom before their eyes, of the battle cries that have resounded in every field of combat from Mactan to Tirad Pass, of the voices of my people when they sing:

"I am a Filipino born to freedom, and I shall not rest until freedom shall have been added unto my inheritance—for myself and my children and my children's children—forever."