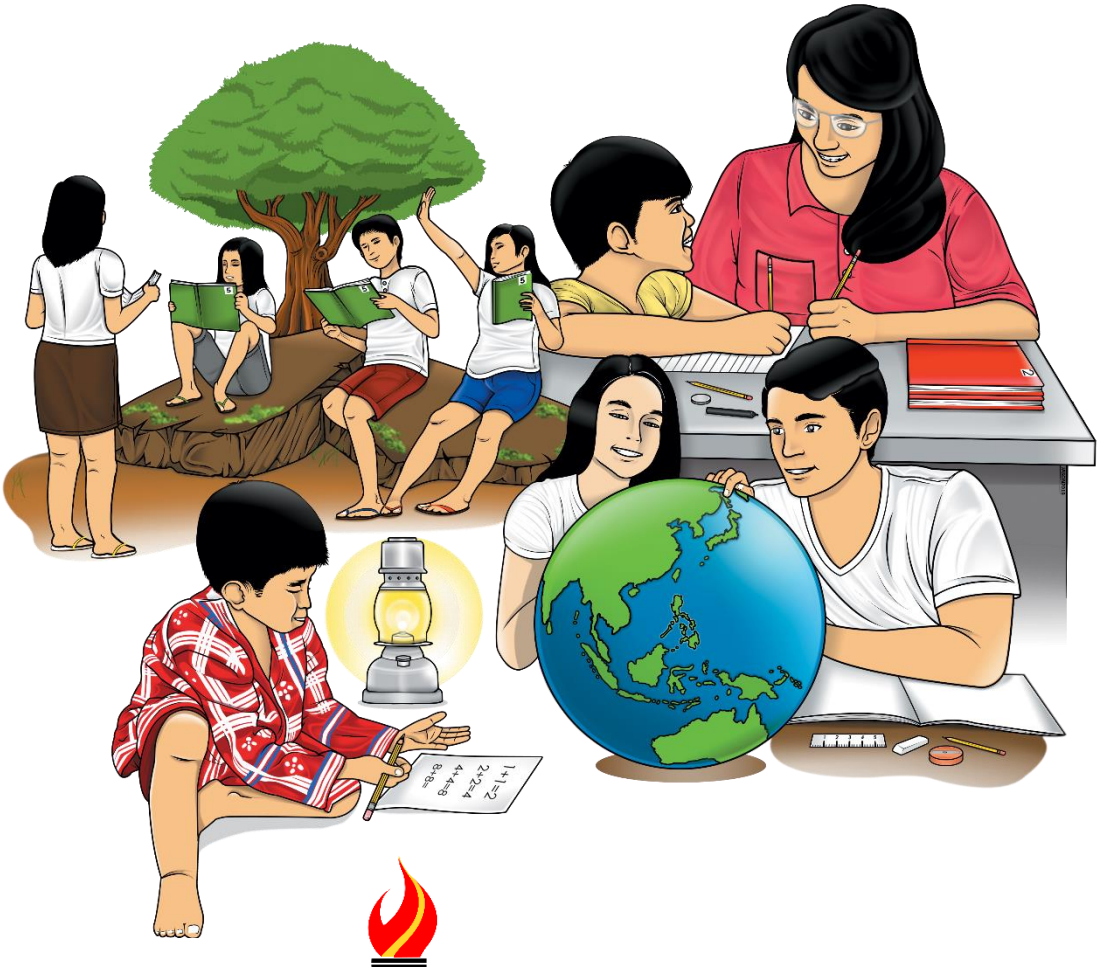
3

Mathematics

Quarter 4 – Module 70:
Visualizing, Representing, and
Measuring Area Using Appropriate Unit



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Department of Education • Republic of the Philippines

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Mathematics

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Visualizing, Representing, and Measuring Area Using Appropriate Unit

This instructional material was collaboratively developed and reviewed by educators from public and private schools, colleges, and or/universities. We encourage teachers and other education stakeholders to email their feedback, comments, and recommendations to the Department of Education at action@deped.gov.ph.

We value your feedback and recommendations.

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Introductory Message

For the facilitator:

(This gives an instruction to the facilitator to orient the learners and support the parents, elder sibling etc. of the learners on how to use the module. Furthermore, this also instructs the facilitator to remind the learners to use separate sheets in answering the pre-test, self-check exercises, and post-test.)

For the learner:

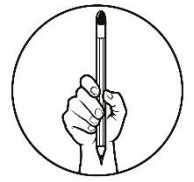
(This communicates directly to the learners and hence, must be interactive. This contains instructions on how to use the module. The structure and the procedure of working through the module are explained here. This also gives an overview of the content of the module. If standard symbols are used to represent some parts of the module such as the objectives, input, practice task and the like they are defined and explained in this portion.)

What I Need to Know

This module was designed and written with you in mind to help you comprehend whole numbers. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of pupils. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

After going through this module, you are expected to:

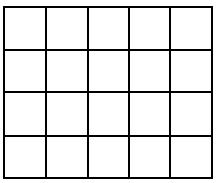
1. Visualize area using appropriate unit
2. Represent area using appropriate unit
3. Manifest the value of measuring accurately



What I Know

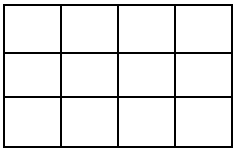
Answer the following problems. Write the letter of your answer on a separate sheet of paper.

1. Find the area by counting the number of small squares. Express the area in square centimeters. _____



2. Which figure shows 12 square meters? (☐ = 1 sq. meter)

A



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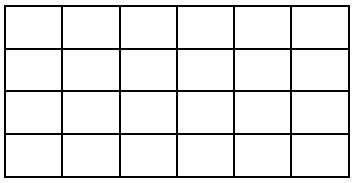

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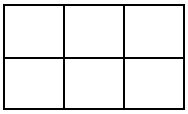

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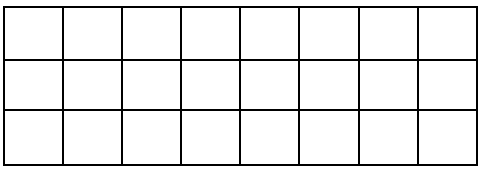


3. If covering the top area of a notebook, what appropriate unit of area measure to be used?

   A. centimeter B. square centimeter C. meter D. square meter

4. We use square meter when ___
   A. measuring a greeting card
   B. measuring a computer table
   C. measuring a floor tile of a bathroom
   D. measuring a backyard

5. Which of the following can be measured using square centimeter?
   A. paper
   B. garden
   C. floor building
   D. front yard

Lesson

Visualize, Represent, and Measure Area Using Appropriate Unit

Pablo bought a small album for his stamp collections. He also bought a plastic cover for the album. If he will cover the top area of the album, what is the appropriate unit of area measure to be used? Why?

What's In

1. Name common shapes having same number of sides and corners.

   _____

2. What are the standard measures of length?

   _____ and _____

Note to the Teacher

The pupil should have mastered the basic multiplication skills and have knowledge on the common units of measure (centimetre and meter) used in measuring length in objects.

What's New

Activity 1

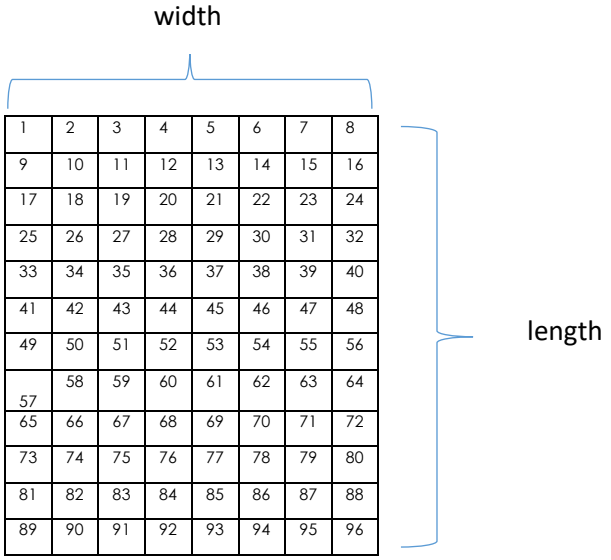
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96

Study the figure above. Count the number of small squares. There are 96 small squares in all. The number of small squares that covers the top area of Pablo's album is the area of the figure. The **area** of the figure is 96 **square units.**

Let us find the area of the figure in another way.

The length is 12 units

The width is 8 units

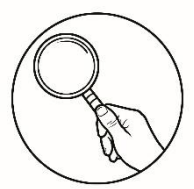


The **area** of the figure is the product of the value of length and width:

Area= (12 units) x (8 units)

= 96 sq. units

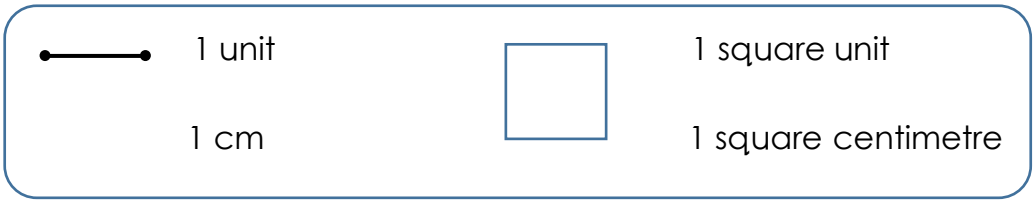
We got the same result when we multiply the value of the length and the width as we counted the number of small squares.

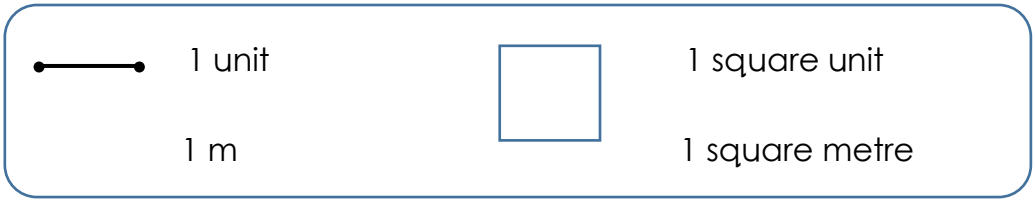


What is It

In Activity 1 the area of the figure is 96 **square units.**

What is a **square unit**? To understand what a square unit is study the unit segment below.

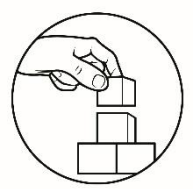




Therefore the appropriate unit of area measure to be used is square centimetre (sq. cm) because the top cover of Pablo's album is small.

Remember:

- The square 1 cm on each side is called a **square centimeter**
- The square 1 m on each side is called a **square meter**
- When measuring **smaller area**, like book, greeting cards, paper, etc., we use the **square centimeter** (sq. cm)
- When measuring **bigger area**, like garden, floor of a room, etc., we use the **square meter** (sq. m.)
- **Area** is the number of square units that can fill up a surface.

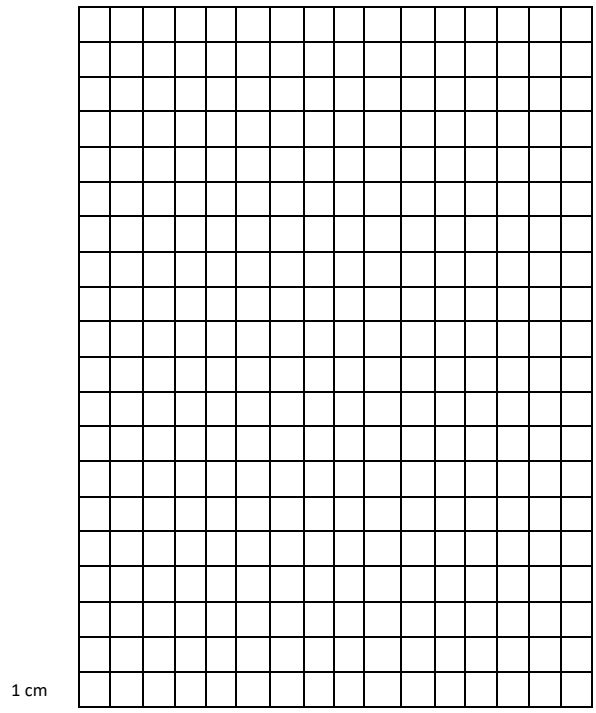


What's More

Activity 2

Read and analyse the problem. Answer the questions on a separate sheet of paper. Write only the letter of your choice.

Mrs. Santos divides the class into groups. She provides each group a 1cm by 1 cm grid paper approximately the size of a notebook.



Questions:

1. What is the measure of each side of one small square?
   A. 1 cm B. 10 cm C. 100 cm D. 1000 cm
2. What is the area of one small square?
   A. 1 cm B. 1 m C. 1 sq. cm D. 1 sq. m.
3. If 1 small square is 1 sq. cm, count the number of squares and find the area of the paper?

A. 300 sq. cm B. 310 sq. cm C. 320 sq.cm D. 330 sq.cm

4. What standard unit of measure did we use to find the area of the paper?
   A. centimeter
   B. meter
   C. square centimeter
   D. square meter
5. Can we use square centimeters or sq. cm in measuring an area of our room?
   A. Yes, because the room is big
   B. No, because the room is small
   C. No, because the room is big
   D. Yes, because the room is small

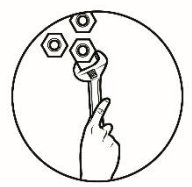
Activity 3

Choose the most appropriate unit of measure, square centimetre (sq.cm) or square meter (sq. m) to get the area of the following. Write your answer on a separate sheet.

1. Garden - _____
2. kitchen floor _____
3. pad paper _____
4. book cover _____
5. stage floor _____

What I Have Learned

When measuring **smaller area**, like book, greeting cards, paper, etc., we use the **square centimeter** (sq. cm) When measuring **bigger area**, like garden, floor of a room, etc., we use the **square meter** (sq. m.)



What I Can Do

Activity 4

Give the appropriate unit of measure for the following:

1. Brian wanted to measure the area of their dining table, what appropriate unit will he use?

2. To measure the area of the plaza, what appropriate unit of measure should Maria use?

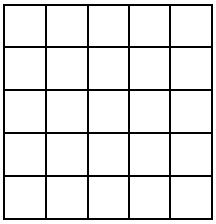
3. The appropriate unit of measure to get the area of a rectangular lake is _____.

4. The appropriate unit of measure to get the area of a handkerchief is _____.

Assessment

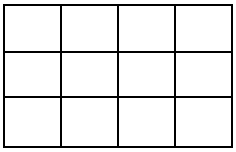
Answer the following problems. Write your answer on a separate sheet of paper.

1. Find the area by counting the number of small squares. Express the area in square meters. _____



2. Which figure shows 24 square meters? (☐ = 1 sq. meter)

A



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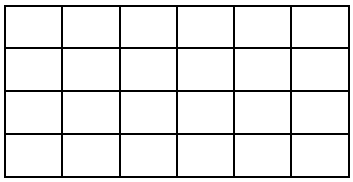

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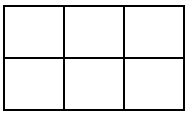

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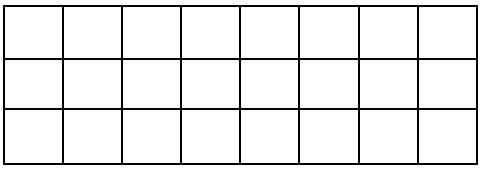

3. If covering the top area of a long folder, what appropriate unit of area measure to be used?

   A. centimetre B. square centimeter C. meter D. square meter

4. We use square centimeter when ___
   A. measuring a floor tile
   B. measuring a backyard
   C. measuring a volleyball court
   D. measuring a swimming pool

5. Which of the following can be measured using square meter?
   A. Picture frame
   B. Square plate
   C. Computer table
   D. front yard

Additional Activities

Activity 5

Look around your house. Give 5 things or figures which can be measured using square centimeters and another 5 things or places which can be measured using square meters.

Answer Key

What I Know	What's More	
1. 20 sq.cm 2. A 3. B 4. D 5. A What's In 1. Square Rectangle 2. Centimeter Meter	Activity 2 1. A 2. C 3. C 4. C 5. C Activity 3 1. Sq.cm 2. Sq.m 3. Sq.m 4. Sq.cm	Activity 4 Answer: 1 152 Assessment 1. 25 sq. m 2. D 3. B 4. A 5. D

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