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

Zest for Progress
Zeal of Partnership

6

MATHEMATICS

4th QUARTER – Module 5

APPLICATION PROBLEM ON PIE GRAPH

Name of Learner: _____

Grade & Section: _____

Name of School: _____

Mathematics – Grade 6
Alternative Delivery Mode
Quarter 4 - Module 5: Application Problem on Pie Graph
First Edition, 2020

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Published by the Department of Education
Secretary: Leonor Magtolis Briones
Undersecretary: Diosdado M. San Antonio

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Printed in the Philippines
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Introductory Message

This Self – Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each 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 to measure your prior knowledge of lessons in each SLM. This will tell you if you can proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for a better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for 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 with 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. Read the instructions carefully before performing each task.

If you have any questions using this SLM or 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 as a learning material for grade 6 mathematics learners. This module contains different activities and problems in solving routine and non-routine problems using data presented in a pie graph.

This module aimed to cater to diverse learners' academic needs in achieving and improving the basic quality education to achieve higher standards of education and produce competitive learners. The language used recognizes the vocabulary level of grade 6 learners. The lesson presented is tailored to meet different learning levels that can lead to efficient learning outcomes through alternative learning delivery modalities.

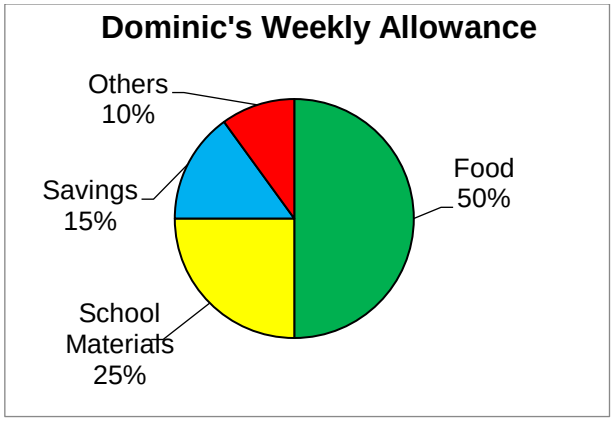
After going through the module, you are expected to solve routine and non-routine problems using data presented in a pie graph. **(M6SP-IVf- 4.6)**

Nothing is impossible; believe, together we can amidst this pandemic. Stay safe, and God bless.

What I Know

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

The circle or pie graph below shows how Dominic budgets his school allowance of Php 500.00 weekly.



1. How much does he spend on food?
   A. Php 250.00 B. Php 260.00 C. Php 270.00 D. Php 280.00

2. What is Dominic's least expense?
   A. Food B. School Materials C. Savings D. Others

3. How much is his savings?
   A. Php 250.00 B. Php 125.00 C. Php 75.00 D. Php 50.00

4. What is his total expenses for school materials and food?
   A. Php 250.00 B. Php 300.00 C. Php 375.00 D. Php 450.00

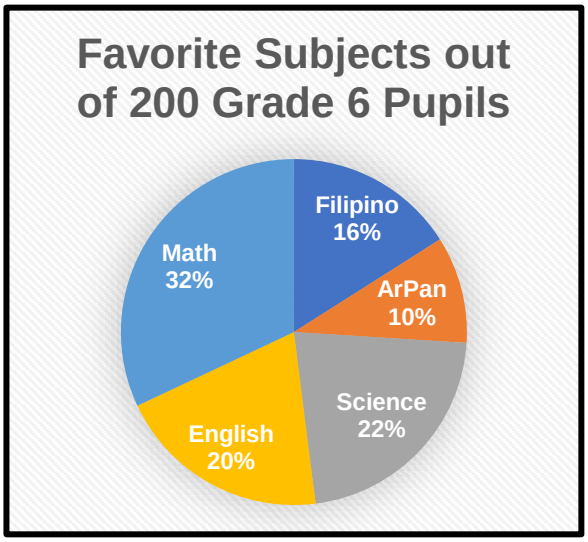
5. How much more he spends on school materials than his other expenses?
   A. Php 75.00 B. Php 100.00 C. Php 125.00 D. Php 150.00

LESSON APPLICATION PROBLEM ON PIE GRAPH

What's In

ACTIVITY **FIND ME**

Directions: Answer the following questions using the data presented on a pie graph.



1. How many of the pupils liked Filipino?
   A. 32 B. 34 C. 36 D. 38

2. Which subject is the least liked by the pupils?
   A. Math C. ARPAN
   B. HEKASI D. English

3. Which subject is liked by most pupils?
   A. Science C. Math
   B. English D. Filipino

4. How many pupils liked the English subject?
   A. 10 B. 20 C. 30 D. 40

5. What is the total percentage of the whole graph?
   A. 200% B. 150% C. 100% D. 50%

What's New

Directions: Answer the following questions. Use the scenario below. Write your answer on a separate sheet.

A publishing house had 40% of its total sales in Mathematics books, 10% in English books, 15% in Science books, 25% in Filipino books, and 10% in Edukasyon sa Pagpapakatao books. If the sales amounted to Php 35 500.00, find the total sales in each kind of book. What book had the least sale?

What is It

- Pie graphs can also be used to visualize the difference of one category to another easily.
- The whole graph is equal to 100 or 100% or 360^0

ROUTINE AND NON-ROUTINE PROBLEMS

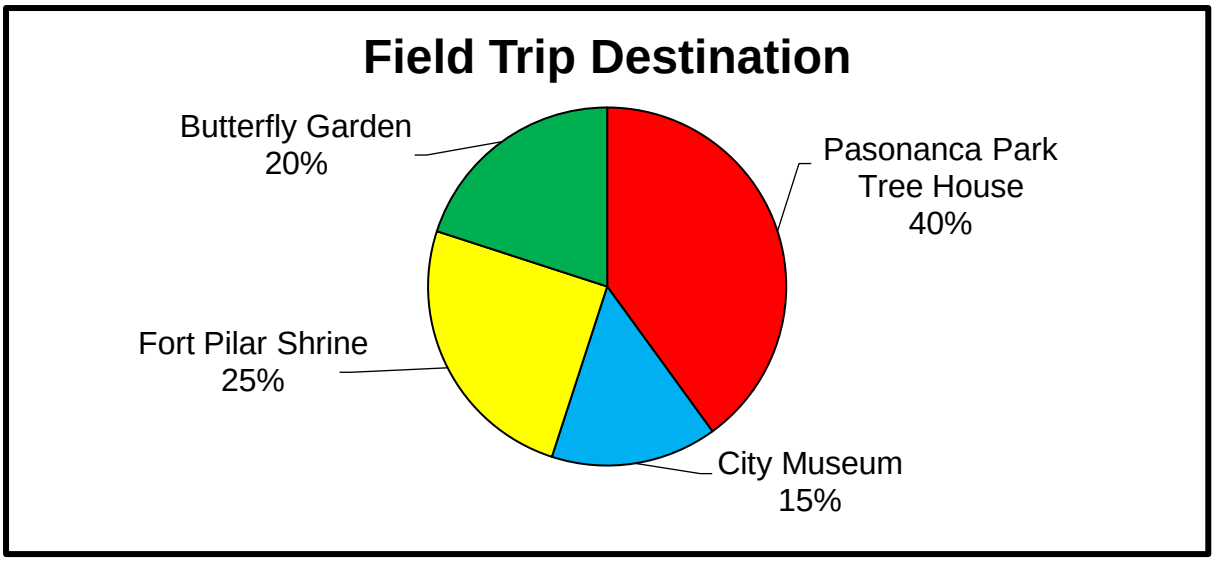
To solve routine and non-routine problems using data presented in a pie graph use the four fundamental operations of the given quantity in each of the several categories like percentage, ratio, whole numbers and fraction based on the problems presented.

What's More

ACTIVITY 1 **LET'S PRACTICE**

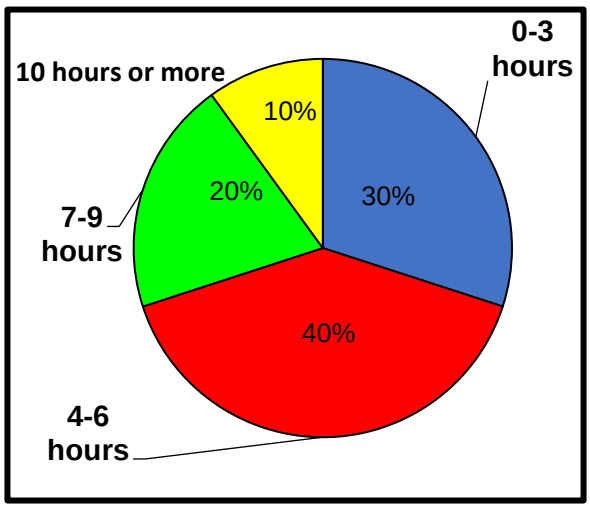
Directions: Study the pie graph given and answer the questions that follow.

PROBLEM 1. Mr. Angeles asked his class to vote on where they would most like to go on a field trip. The choices he gave them were: City Museum, Fort Pilar Shrine, Butterfly Garden, and Pasonanca Park Tree House. All 60 pupils casted on one vote each. The pie graph below shows the results of the voting.



1. Which field trip destination got the highest percentage of votes?
2. What percent of the pupils chose Pasonanca Park Tree House?
3. How many pupils chose Butterfly Garden?
4. What percent of the pupils voted for City Museum as the destination for the field trip?

PROBLEM 2. Mr. Gregorio asked Fifty Grade 6 pupils the number of hours they use the Internet during weekends. The pie graph below shows the results.



1. How many pupils use the Internet for 4-6 hours?
2. How many pupils use the Internet for at least 7 hours?
3. How many pupils use the Internet for 6 hours?
4. What is the ratio of students who preferred to work for 0-3 hours to 7-9 hours?
5. What fraction of pupils liked to use the Internet for 0-3 hours or 4-6 hours the most?

What I Have Learned

KEY POINTS **REMEMBER**

Directions: Briefly answer the questions below.

1. How to solve routine and non-routine problems using data presented in a pie graph?

To solve routine and non-routine problems using data presented in a pie graph use the four fundamental operations of the given quantity in each of the several categories like percentage, ratio, whole numbers and fraction based on the problems presented.

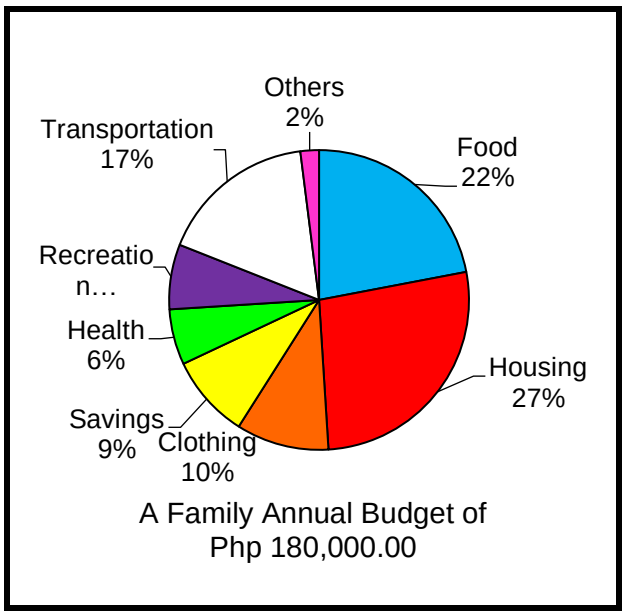
2. How is a pie graph helpful to visualize one category to another?

- Pie graphs can also be used to easily visualize the difference of one category to another.
- The whole graph is equal to 100 or 100% or 360^0

What I Can Do

ACTIVITY **TRY ME!**

Directions: Study the pie graph below and answer the questions that follow.



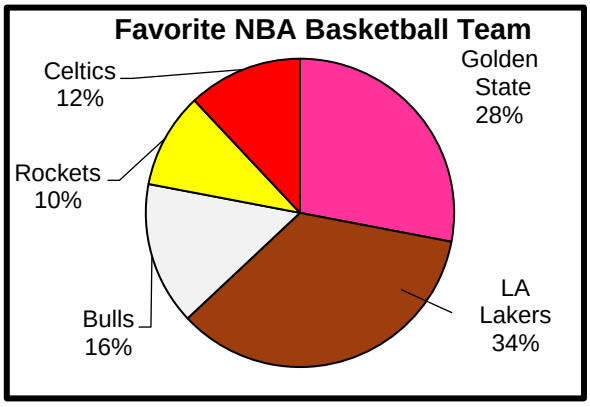
1. Using the given budget, how much is allotted for food and housing in a year?
2. Find the total amount needed for health, recreation, and transportation?
3. What is the expected amount for savings in 5 years?
4. What is the ratio amount allotted to savings to health?
5. If you are going to plan for vacation/ recreation in some other places in the Philippines after three years, how much money needed for it?

Assessment

Directions: Answer the following questions. Choose the letter of the correct answer and write it on a separate sheet of paper.

For items 1-3, use the situation below.

Arnel surveyed the One Hundred Fifty Grade 6 pupils on their favorite NBA basketball team. The pie graph shows the results of his survey.



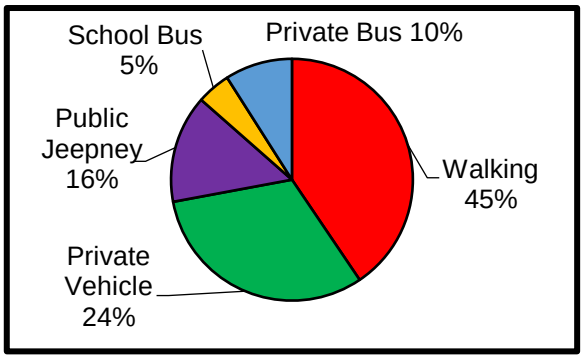
1. Which team was chosen by most of the pupils?
   A. Rockets C. Lakers
   B. Golden State D. Bulls

2. Which team was chosen by the least number of pupils?
   A. Bulls C. Rockets
   B. Lakers D. Celtics

3. How many pupils chose the Bulls as their favorite Basketball Team?
   A. 18 B. 24 C.42 D. 15

For items 4-5, use the situation below.

Mr. Santos asked his 60 pupils what means of transportation they use in going to school. The pie graph below shows the results.

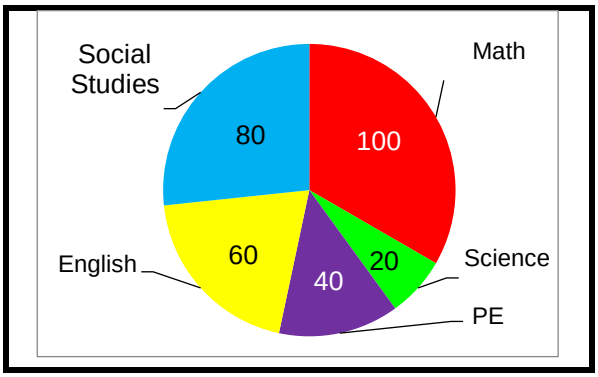


4. How many pupils go to school by means of walking?
   A. 27 B. 18 C. 6 D. 3

5. What is the total percentage of pupils used to ride on a public jeepney, private vehicle, and private bus?
   A. 5% B. 40% C. 45% D. 50%

For items 6 - 8, use the situation below.

We asked a group of 300 students about their favorite subject in school. The following graph shows their choices. Use the information to answer the questions.



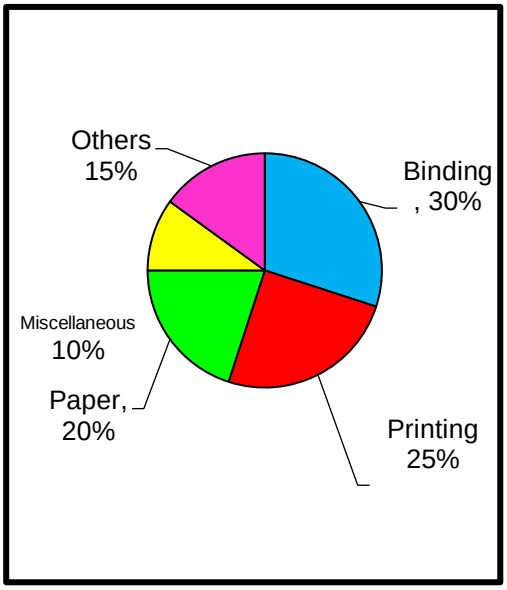
6. The ratio of students that favored Science to PE to English to Math is 1:2:3:5. What percentage of the students liked Science?
   A. 6.67% B. 33% C. 13% D. 27%

7. What fraction of students liked Math the most?
   A. $\frac{5}{11}$ B. $\frac{3}{4}$ C. $\frac{1}{3}$ D. $\frac{11}{5}$

8. What is the ratio of students that preferred Math to Social Studies?
   A. 3:2 B. 3:4 C. 4:5 D. 5:4

For numbers 9-10, use the scenario below.

The pie chart shows the expenditure incurred in preparing a book by a publisher, under various heads.



9. By what percentage, expenditure on binding should be reduced so that its expenditure will be equal to paper expenditure?
   A. 10% B. 20% C. 25% D. 27%

10. If the sum of two expenditures is represented by 144 degrees in the diagram (if the diagram is made in terms of degrees), these expenditures are?
   A. Printing and Paper
   B. Printing and Miscellaneous
   C. Paper and Binding
   D. Binding and Miscellaneous

Assessment:

1.) C	3.) B	5.) D	7.) C	9.) A
2.) C	4.) A	6.) A	8.) D	10.) D

What I Can Do:

1.) Php 88 200.00	3.) Php 81 000.00	5.) Php 37 800.00
2.) Php 54 000.00	4.) 3:2	

What I Have Learned:

1. To solve routine and non-routine problems using data presented in a pie graph use the four fundamental operations of the given quantity in each of the several categories like percentage, ratio, whole numbers and fraction based on the problem presented.
2. Pie graphs can also be used to easily visualize the difference of one category to another.

What's More:

Activity 2 (Let's Practice)

1.) 20 pupils
2.) 10 pupils
3.) 20 pupils
4.) 3:2
5.) $\frac{3}{4}$

What's More:

Activity 1 (Let's Practice)

1.) Pasonanca Park Tree House
2.) 40%
3.) 12 pupils
4.) 15%

What's New:

1. Math = Php 14,200.00
2. English = Php 3,550.00
3. Science = Pho 5,325.00
4. Filipino = Php 8,875.00
5. ESP = Php 3,550.00

Least sale are **English and ESP**

What's In:

Activity A.

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

What I Know:

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

Answer Key

References:

Marjoseph H. Perez et al., 21st Century Mathletes 6, Mercurio T. Elenzano , EdD, Quezon City: Vibal Group, Inc, 2016, 327-329.

Adela C. Villamor and Amelia Celeridad-Wright, Math for Life 6, Quezon City: REX Book Store, Inc, 2006, 371-373.

Teresita L. Licardo et al., Lesson Guides in Mathematics 6, Quezon City: Ateneo de Manila University, 2003, 582-585.

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."