JANUARY
Makugihon
FEBRUARY
Mahigugmaon
MARCH
Matinabangon
APRIL
Matinahuron
MAY
Mahapsay og Malimpyo
JUNE
Maabtik og Musunod sa Insaktong Oras
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

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6

MATHEMATICS

Quarter 2 – Module 3:

Percentage Base and Rate

Name of Learner: _____

Grade & Section: _____

Name of School: _____

Mathematics – Grade 6
Alternative Delivery Mode
Quarter 2 – Module 3: Percentage, Base and Rate
First Edition, 2020

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What I Need to Know

This module was designed and written with you in mind. It is here to help you master about percentage, rate, and base. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. 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:

- find the percentage or rate or base in a given problem.(M6Ns-IId-142)
- solve routine and non-routine problems involving finding the percentage, rate, and base using the appropriate strategies and tools.(M6NS-IId-143)

Lessons 1 - 2	**Finding the percentage or rate or base in a given problem and Solvingroutine and non-routine problems involving finding the percentage, rate, and base using the appropriate strategies and tools.**

What's In

Identify the rate, base and percentage by completing the table.

	Rate	Base	Percentage
1. 6 is 25% of 24			
2. 20% of 15 is 3			
3. 500 is ⅝% of 800			
4. 125% of 60 is 75			
5. ₱1,400 is 275% of ₱3,850			

What's New

Read and answer question about the given problem.

Pablo listens very well to his teacher during their class. When they were given a 5 - item test, he got 80% correct answers. What do you think is his score?

1.Answer the following question:

a. Who listens very well to the teacher?_____

b. How many items was their test?_____

c. How many percent did he get from the test? _____

d. If you were Pablo, will you also be listening intently to the teacher? Why?

2. What are the given data?

_____

3. Create an equation for the problem.?

_____

What is It

In this case, we can now easily identify which is the percentage, the rate, or the base. We let ***P*** be the percentage, ***R*** be the rate and ***B*** be the base.

(P) - It is the number on the amount that represents a part of a whole.

80% is the rate (R) - It is the number compared to 100. It usually has either a percent sign (%) or the word "percent" with it.

5 is the base (B) - It is the number that represents the whole or the entire amount.

<u>Finding the Percentage (P)</u>

Example (using the given problem above) Find the 80% of 5.

Solution: We can solve the problem in two ways

Using Decimal	Using a Proportion
80% of 5 = N ⇓ 0.80 x 5 = N 4 = N ❖ (change the rate to decimal)	Percentage Rate = ---------- ⇓ Base 80 n ----- = ---- 100 5 100 n = 80 x 5 n = 400 -------- 100 n = 4 Think: 80% 80 --------

Answer: 80% of 5 is **4**

Finding the Rate (R)

Example 4 is what percent of 5

Solution:

We can solve the problem in two ways

n% of 5 is 4

⇓ ⇓ ⇓

bate base percentage

Using fraction	Using a Proportion
n% of 5 = 4 ⇓ n ----- x 5 = 4 100 5n ------- =4 100 5n = 4 x 100 400 n = ------- 5 n = 80	Percentage Rate = ---------- Base n 4 ------- = ----- 100 5 4 x 100 n = ---------- 5 400 ---------- 5 n = 80

Answer : 4 is 80% of 5

Finding the Base (B)

Example : 80 % of a number is 4. what is the number

Solution:

We can solve the problem in two ways.

80% of n = 4

rate base percentage

Using Decimal	Using a Proportion
80 of n = 4 0.8 x n = 4 0.8 n = 4 $n = \frac{4}{0.8}$ n = 5	$\text{Rate} = \frac{\text{Percentage}}{\text{Base}}$ $\frac{80}{100} = \frac{4}{n}$ 80 n = 4 x 100 $n = \frac{400}{80}$ n = 5

Answer : 80% of **5** is 4

What's More

A. Answer the following:

1. What is 25% of 20? _____

2. N is 50 % of 2 _____

3. 75% of 12 is _____

B. Read, analyze and solve.

1. Cesar invited 300 kids to his birthday party. Only 15% of the kids did not show up. How many kids came to the party?

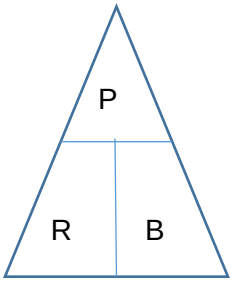
2. There were 50 pupils in Grade VI - Gomez. If 28% of the pupils were absent, how many pupils were present?

3. Rosa got 20% of an 80 item test incorrectly. How many items did she get correctly.

What I Have Learned

Formulas for Finding Percentage, Rate, and Base

- $P = B \times R$
- $R = \frac{P}{B}$
- $B = \frac{P}{R}$



P = Percentage, R = Rate , B = Base

What I Can Do

Activity 1: Translate the question to a number sentence then solve.

1. Find 75% of 80 _____
2. What percent of 75 is 15 _____
3. 22 is 40% of what number? _____

Activity 2. Read , analyze and solve.

1. Elena has 12 hours working at home daily as a full time and mother. She spends 12.5% of the time washing clothes. How many hours does she wash the clothes?

Answer : _____

2. Among the 50 pupils in a Grade 6 class, 6% are left-handed. How many are left handed?

Answer: _____

3. Maria's allowance is ₱ 50 daily. She saves 8% of it. How much does she save?

Answer : _____

Assessment

A. Direction: Choose the letter of best answer.

1. Mr. Kim has a total collection of 220 marbles. 10% of them are red, How many are red marbles in his collections? What is missing in the problem?

a. Base b. percentage c. rate d. data

2. This usually has a percent sign. What is this?

a. Base b. percentage c. rate d. ratio

3. It is the product of base and rate. What is this?

a. Base b.percentage c. rate d. ratio

B. Read, analyze and solve the following problem.

1. In a survey, 18 teenagers prefer dancing tiktok than singing. If this represented 60% of the respondents, how many respondents were there in all?

2. In a conference, 500 people who attended were Filipinos. If 65% of these were Filipino male professionals, how many Filipino male and female professionals were there.

Answer Key

.

What's In

Rate	Base	Percentage
1. 25%	24	6
2. 20%	15	3
3. ⅝%	800	500
4. 125%	60	75
5. 275%	3,850	1,400

What's New

1. a. Pablo

   b.5 items

   c.80%

   d.answer may vary

2. 5 item test and 80% grade

3. 5 x 80% = N

What's more

A.1. 5

2. 1

3. 9

B. 1. 255 kids

2. 36 pupils

3. 64 correct answer

What I can do.

1. P = B x R

   = 80 x 75%

   = 80 x .75

   P = 60

2. $R = \frac{P}{B}$ ------

   $= \frac{15}{75}$ ------

R = .20 or 20%

3. $B = \frac{P}{R}$ ---------

   $B = \frac{22}{40\%}$

   B= 55

Activity 2:

1. 1.5 hours
2. 3 left handed pupils
2. 4 pesos or ₱4

Assessment:

A.1. b

2. c

3. b

B.

1. 30 respondents
2. 325 male & 175 female

References

- 21st Century MATHletes Textbook
- Math for Life Worktext in Mathemathetic
- K to 12 Grade 6 Curriculum Guide
- K to 12 Teacher's Guide in Mathematics
- Number Smart 6
- Lesson Guide in Elementary Mathematics Grade

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."