

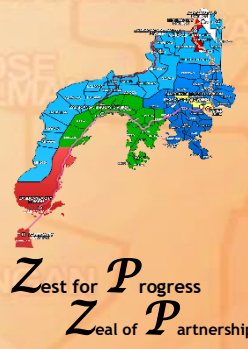
- JANUARY**
Makugihon
- FEBRUARY**
Mahigugmaon
- MARCH**
Matinabunon
- APRIL**
Matinahuron
- MAY**
Mahapsay og Malimpyo
- JUNE**
*Maabik og Masunod sa
Dhaklong Oras*
- JULY**
Maantigo og Maabilidad
- AUGUST**
*Maginhuhunon
para sa Urban*
- SEPTEMBER**
Madaginton
- OCTOBER**
Matinud-anon
- NOVEMBER**
Masaligan
- DECEMBER**
Maalampunon



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



5



MATHEMATICS

4th QUARTER – Module 7: LINE GRAPH



Name of Learner: _____

Grade & Section: _____

Name of School: _____

Mathematics – Grade 5
Alternative Delivery Mode
Quarter 4 – Module 7: Line Graph
First Edition, 2020

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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 need to proceed with 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. And read the instruction carefully before performing each task.

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

Thank you.



What I Need to Know

This module is designed to cater to diverse learners' academic needs in achieving and improving the twin goals of mathematics in the basic education levels, which are critical thinking and problem-solving. The language used recognizes the vocabulary level of grade 5 learners. The lesson followed developmentally sequenced teaching and learning processes to meet the curriculum requirement.

After going through the module, you are expected to:

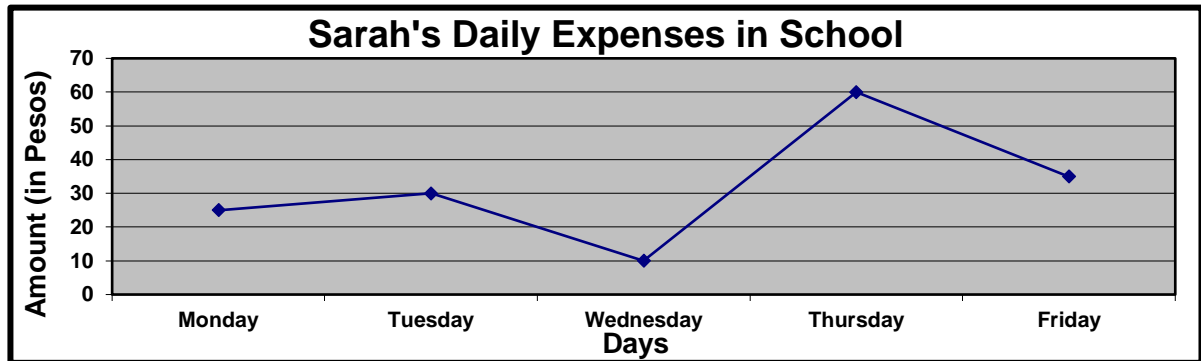
- solve routine and non-routine problems using data presented in a line graph. (M5NSIVh - 4.5); and
- draw inferences based on data presented in a line graph. (M5NSIVh – 5.5)

Believe that learning can continue amidst the global pandemic. Good luck, stay safe, and God bless



What I Know

Directions: Study the graph below and answer the questions that follow. Write your answer on a separate sheet of paper.



QUESTION:

1. What is the line graph all about?
2. How much more did Sarah spend on Thursday than Wednesday?
3. What is the total daily expenses of Sarah from Monday to Friday?
4. Why do you think Sarah spent the most on Thursday?
5. What will happen if Sarah will continue to spend Php 60 a day?



What's In



Can you still remember what a line graph is?

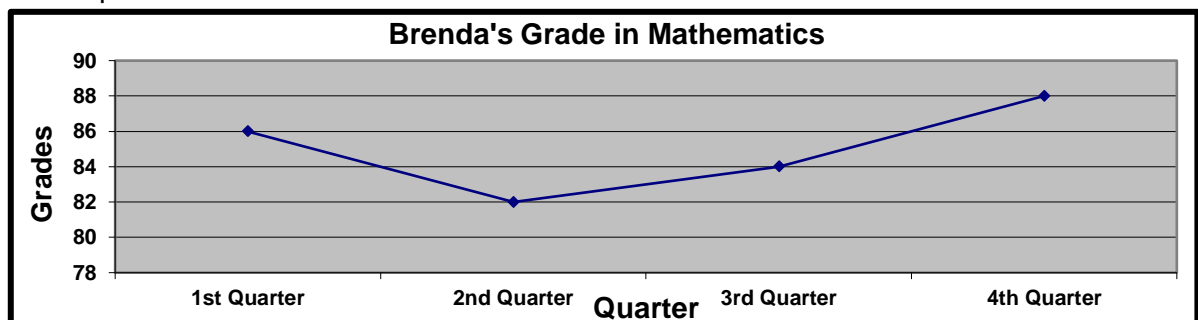
- A line graph is a graph which uses lines to connect individual data points that display quantitative values over a specified time interval.

Constructing a line graph helps a student organize and analyze information in a well-structured format, making it easier to interpret data.



What's New

Directions: Study the graph below, then answer the question that follows. Write your answer on a separate sheet.



QUESTION:

1. What is the average grade of Brenda in Mathematics?
2. What happened to Brenda during the second quarter?

LESSON

1

SOLVING ROUTINE AND NON-ROUTINE PROBLEMS USING DATA PRESENTED IN A LINE GRAPH



What is It

The graph above shows that Brenda's grade is lowest during the second quarter and highest during the fourth quarter. Her average grade is 85.

Let us try to answer another problem.

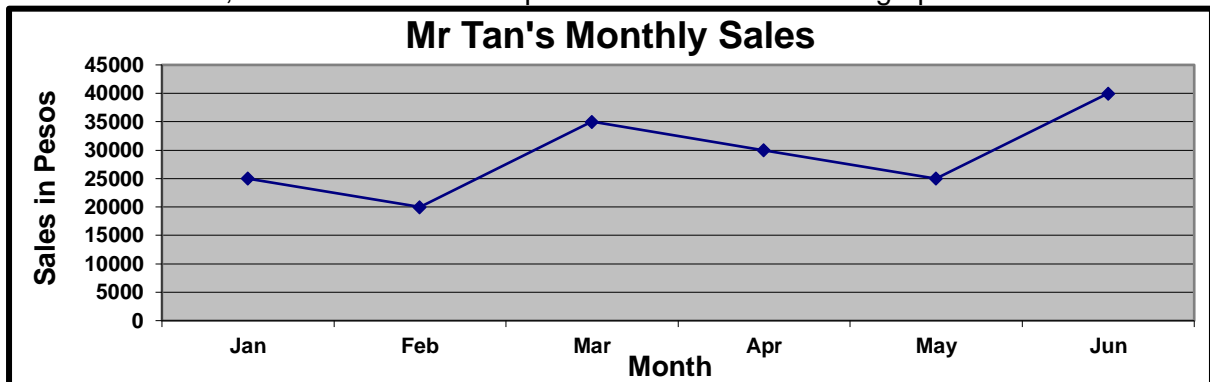
Mr. Tan's monthly sales are increasing from January to June, as shown in the table below

MONTH	SALES
January	Php 25,000
February	Php 20,000
March	Php 35,000
April	Php 30,000
May	Php 25,000
June	Php 40,000

QUESTION:

What are his total sales?

Moreover, the sales can also be presented as shown in the graph below:



To solve this problem, we use the 4 – Step Plan

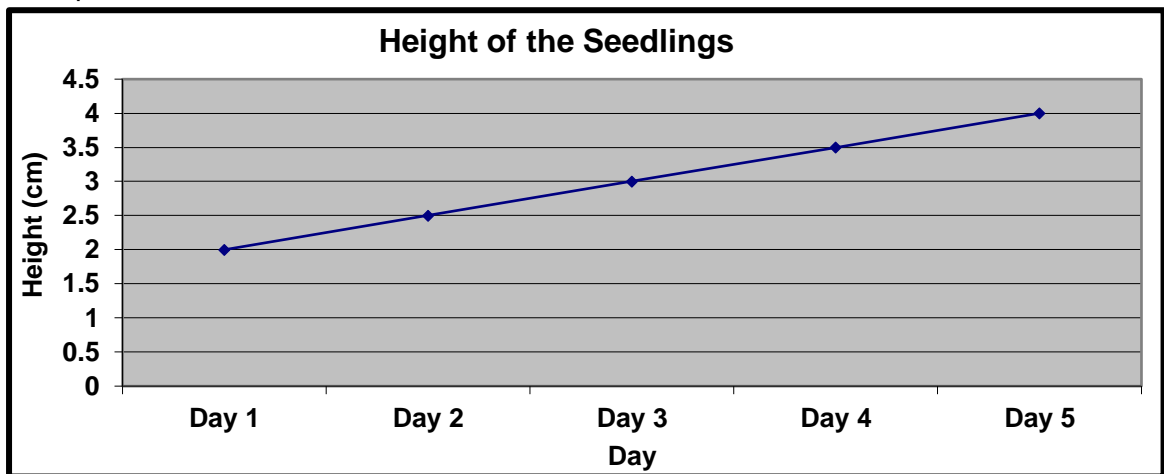
FOUR – STEP PLAN	ILLUSTRATIVE EXAMPLE
UNDERSTAND	
<ul style="list-style-type: none"> • What is asked in the problem? • What are the given facts? 	What are his total sales? Jan. – Php 25,000 Mar. – Php 35,000 Feb. – Php 20,000 Apr. – Php 30,000 May – Php 25,000 Jun – Php 40,000
PLAN	
<ul style="list-style-type: none"> • What shall we do? 	Use Addition
SOLVE	
<ul style="list-style-type: none"> • Perform the operation 	$25,000+20,000+35,000+30,000+25,000+ 40,000=175,000$

• Answer	The total sales of Mr. Tan from January to June is Php 175,000.
CHECK AND LOOK BACK	
• Verify if the answer is correct.	$175,000 - 25,000 = 150,000$ $150,000 - 20,000 = 130,000$ $130,000 - 35,000 = 95,000$ $95,000 - 30,000 = 65,000$ $65,000 - 25,000 = 40,000$ $40,000 - 40,000 = 0$



What's More

- A. **Directions:** Solve the word problems using the data presented on the line graph. Use the 4-Step Plan.

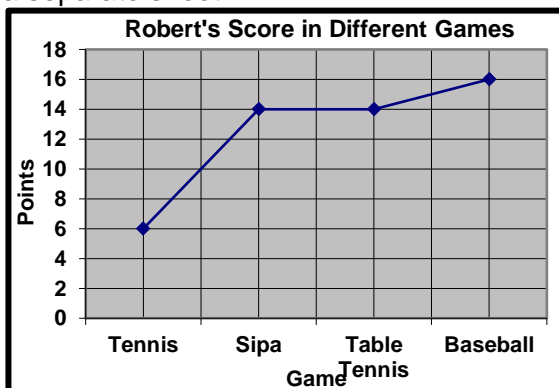


Based on the line graph, the seedlings' height grew from 2 cm to 4 cm within 5 consecutive days.

What is the change in height after three days?

- What is asked?
- What are the given facts are needed to solve the problem?
- What operation is needed to solve the problem?
- What is the number sentence?
- What is the complete answer?

- B. **Directions:** Use the data in the line graph to answer the questions. Write your answer on a separate sheet.



- In what game did Robert get the highest points?
- In what games did he get the same points?
- In what game did Robert get the lowest points?
- Why do you think Robert got higher points in Baseball than in Tennis?
- Why do you think Robert got the same points in Sipa and Table Tennis?



What I Have Learned

ACTIVITY FILL ME UP!

REMEMBER

Routine word problems are problems that involve the use of one basic operation to solve the problems that are practical in nature.

Non-Routine word problems require sets of strategies to solve them. These kind of problems do not have a direct path to the solution.

LESSON 2

DRAWING INFERENCES BASED ON DATA PRESENTED IN A LINE GRAPH



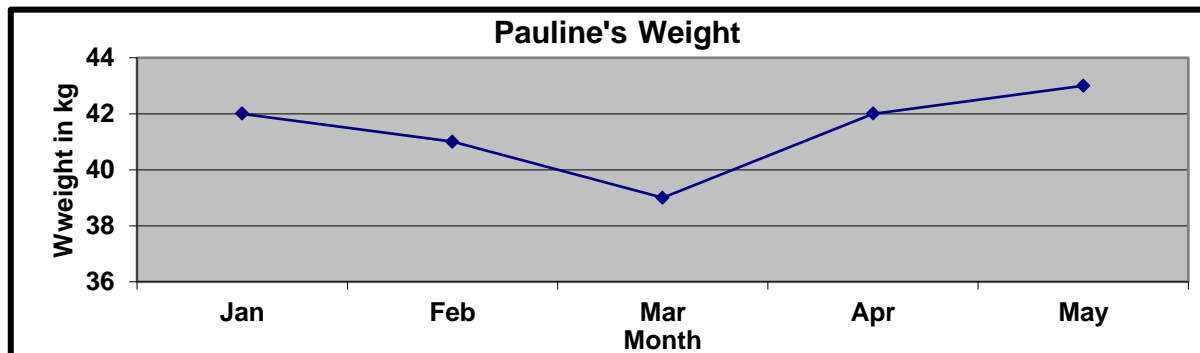
What is It



To draw inferences, it is important to:

- observe the parts of the graph
- understand the relationship being illustrated on the graph
- make prediction based on the described situation presented by the data on the graph

Example on how to make inferences based on the data presented in a line graph

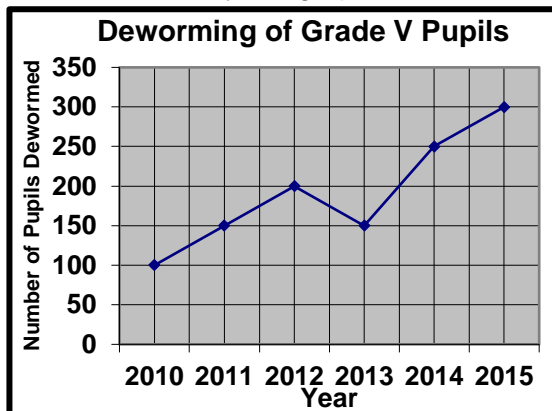


- Based on the data presented in the line graph, we can say that Pauline's weight decreases during the month of March but suddenly increases the next month.
- For the first three months, Pauline loses 3 kg of weight.
- Pauline earned only 1 kg of weight after 4 months.
- We can also say that the current weight of Pauline is 43 kg.
- So, we can infer that maybe Pauline got sick during the months of February and March that is why her weight decreased from 42 kg in January down to 39 kg in March.



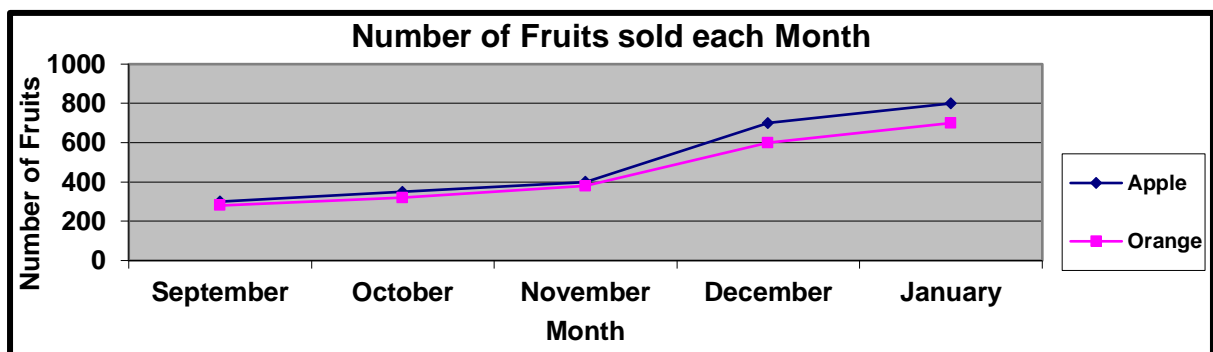
What's More

Directions: Study the graphs and draw inferences based on the line graphs' data.



QUESTIONS:

1. What does this line graph shows?
2. What can you say about the number of pupils dewormed on the first three years?
3. What would be the reasons why the number of pupils decreased in 2013?



QUESTIONS:

1. How do you compare the sales of the two fruits?
2. How do you describe the sales of fruits?
3. Why do you think most of the customers bought more apples than orange?



What I Have Learned

Directions: Briefly answer the questions below.

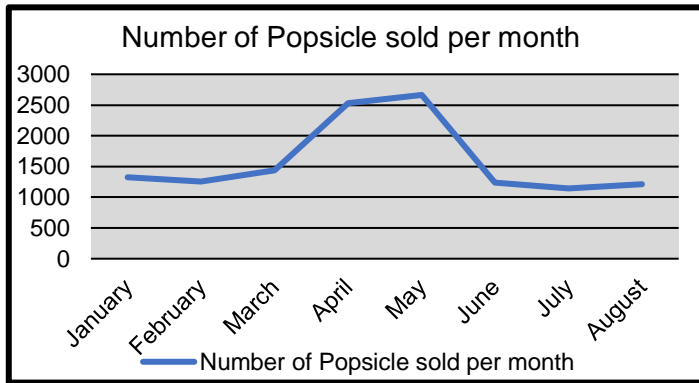
1. How do we make inferences based on the data presented in a line graph?

2. Is it important to learn how to make inferences in the data? Why?



What I Can Do

Directions: Study the line graph and answer the questions that follow.



QUESTION:

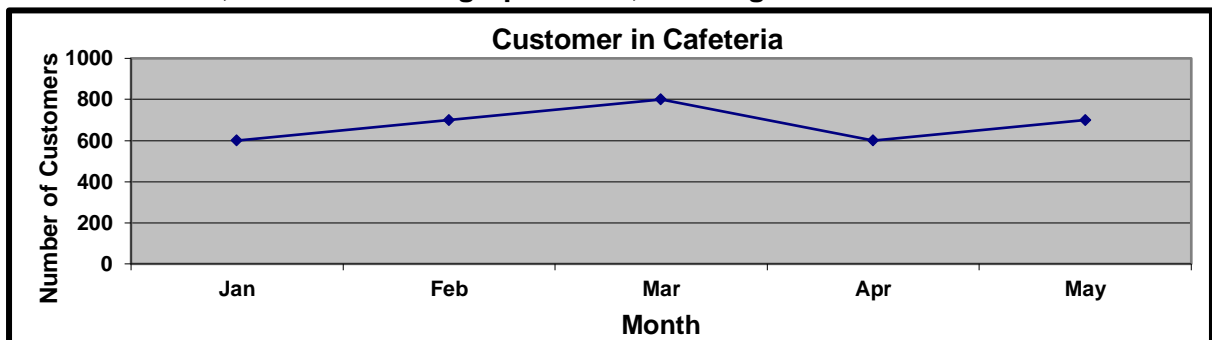
- Which month has the lowest number of popsicle sold?
- Why do you think that the sale of popsicle is high during April and May?



Assessment

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

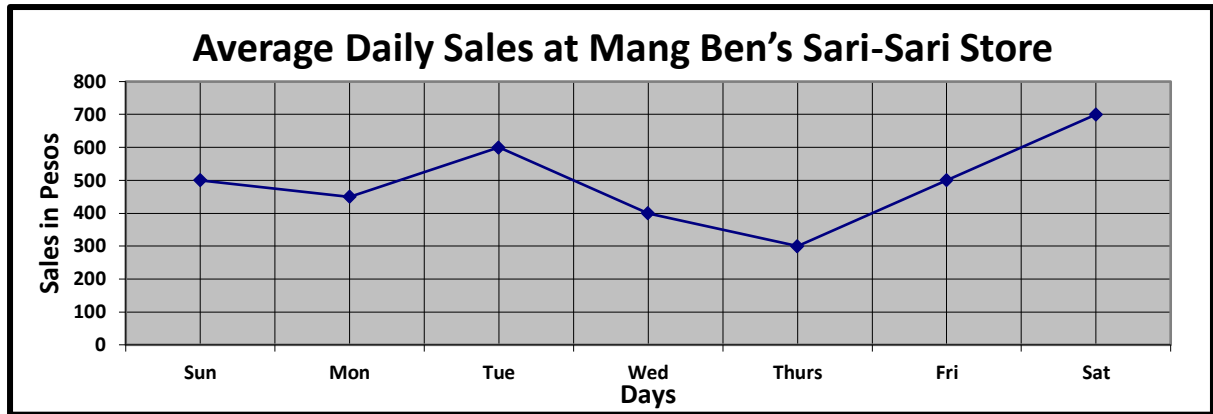
For items 1 to 3, refer to the line graph below, showing Customer in Cafeteria.



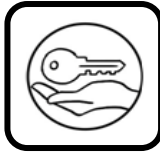
- What is the total number of customers in the first three months?
 - 2 000
 - 2 100
 - 2 200
 - 2 300
- What is the average number of customers from February to April?
 - 2 100
 - 2 200
 - 2 230
 - 2 400

3. About how many more customers came into the cafeteria during the fifth month than in the fourth month?
- a. 50 b. 90 c. 100 d. 150

For items 4 to5, refer to the data below showing Average Daily Sales at Mang Ben's Sari-Sari Store.



4. If the daily average sales of Mang Ben for the next months is always below ₱100, what do you think will happen?
- a. Mang Ben will become rich.
 b. Mang Ben will buy a new car.
 c. Mang Ben will open a bigger store.
 d. Mang Ben will close his store.
5. Why do you think Saturday has the highest sales?
- a. Most people are resting on a Saturday.
 b. Most people are working on a Saturday.
 c. Most people are buying groceries on a Saturday.
 d. Most people are visiting their friends and relatives.



Answer Key

What I Know
1. Sarah's daily expenses. 2. Php 50 3. Php 160 4. Answer may vary 5. Answer may vary

What's New:
1. 85
2. Her grade decreased by 4 points.

Lesson 1.
What's More:
A.
1. Baseball
2. Sipa and Table Tennis
3. Tennis
4. Answer may vary
5. Answer may vary
What I have Learned:
Answer may vary

Lesson 2.
What's More:
A.
1. Deworming of Grade V pupils
2. the number of pupils increased in the first three years.
3. Answer may vary
B.
1. there are more sales of apple fruits than oranges.

What I Can Do:
1. July
2. Answer may vary

Assessment:
1. B
2. A
3. C
4. D
5. A

References:

"Line Graph", Lesson Guide in Elementary Mathematics Grade 5, Retrieved 22 June 2020 from <https://lrmds.deped.gov.ph>.

"Routine and Non-Routine Problem Solving" Retrieved 23 June 2020 from <http://ion.uwinnipeg.ca/>.

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.”