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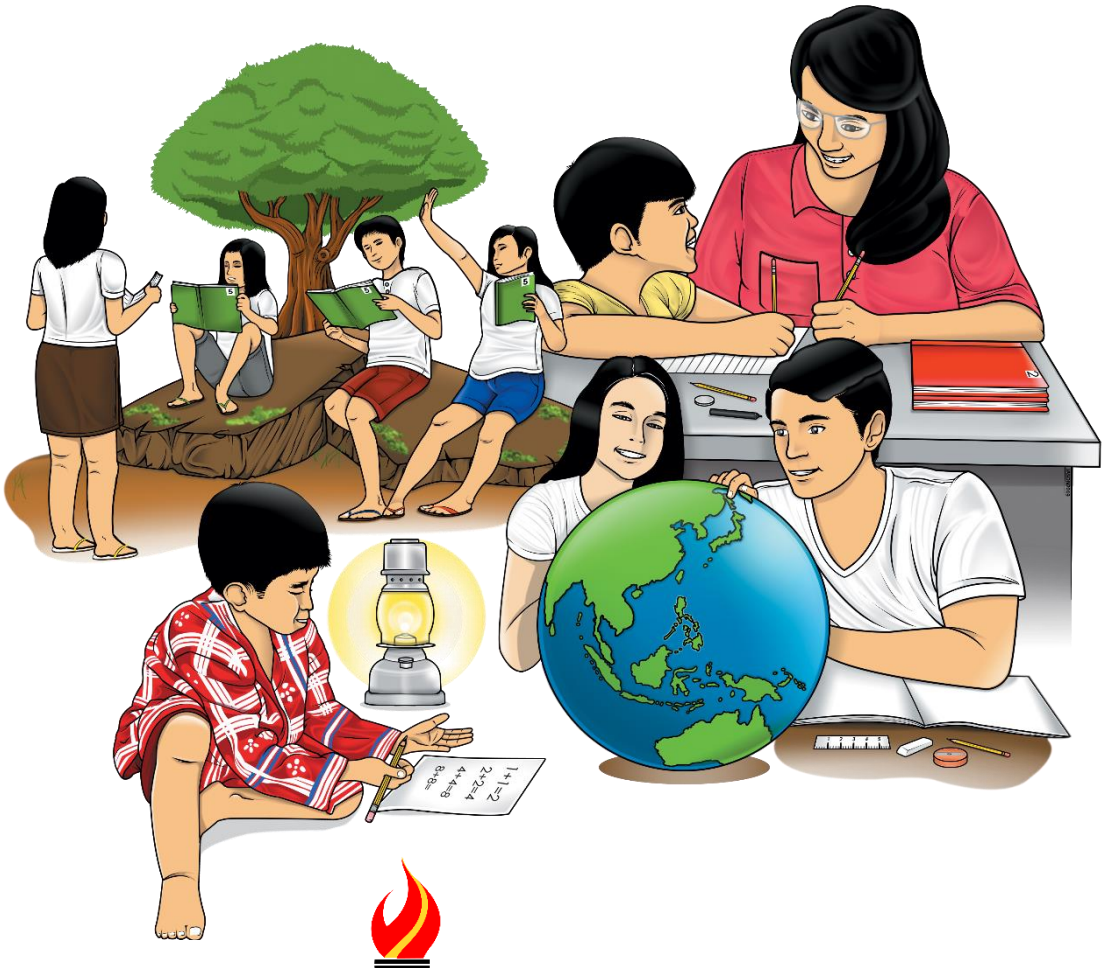
Mathematics

Quarter 4 – Module 11: Organizing Data in Tabular Form and Presenting them in a Line Graph



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Mathematics

Quarter 4 – Module 11: Organizing Data in Tabular Form and Presenting them in a Line Graph

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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 on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for 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 on 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 performing each task.

If you have any questions in 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

Good day Mathletes!

This module was designed and written to help you gain an understanding of the principle involved and the skills needed in organizing data in tabular form and presenting them in a line graph, and its advantages. Remember that there are different kinds of graphs. The lessons you learned about pictographs and bar graphs in your previous grades will surely help you go through this module.

The skills you will learn in this lesson are important because you can use them in real-life situations. Often, we deal with information or data that need to be organized for us to more easily see the changes as well as the trends. These would then enable us to possibly predict the outcomes of events.

So, what are you waiting for? Stay focused and start-up.

At the end of this module, you are expected to be able to:

- enumerate the steps in organizing data in tabular form and presenting them in a line graph;
- organize data in tabular form and present them in a line graph; and
- appreciate the importance of organizing data and presenting them in a line graph.

Before we proceed, let us first check your understanding of organizing data in tabular form and presenting them in a line graph.

What I Know

Directions: Read the story below.

Mateo helps his parents by selling empty plastic soft drink bottles. He collects them after class. Last week, he collected the following number of plastic bottles from his neighborhood: Monday – 20; Tuesday - 35; Wednesday – 25; Thursday – 30; and Friday 20.

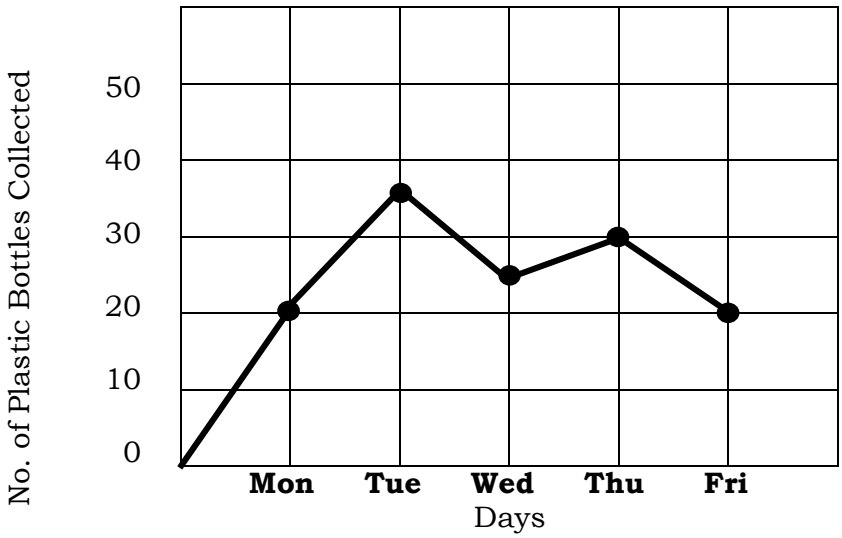
The information or *data* given above are presented in a table or are tabulated below.

Mateo's Collection of Plastic Bottles by Day

Days	No. of plastic bottles collected
Monday	20
Tuesday	35
Wednesday	25
Thursday	30
Friday	20

The same set of data are presented in the line graph below.

Mateo's Collection of Plastic Bottles by Day



Refer to the table and the graph above and answer the following. Write your answer on a separate sheet of paper.

1. What kind of graph is shown above?
   A. Bar graph
   B. Pie graph
   C. Line graph
   D. Pictograph

2. What is the title of the graph?
   A. Mateo's Collection of Plastic Bottles by Day
   B. Mateo's Number of Days
   C. Mateo's Number of Plastic Bottles
   D. Mateo's Collection of Plastic Bottles

3. What is the independent variable?
   A. Day
   B. Number of bottles Collected
   C. Weeks
   D. Number of days

4. What is the dependent variable?
   A. Day
   B. Number of plastic bottles collected
   C. Collected plastic bottles
   D. Daily collection

5. What was the interval used in the graph for the data on the number of plastic bottles collected?
   A. 5
   B. 10
   C. 20
   D. 15

6. Which of the following statements is TRUE when organizing data using tables?
   A. It is impossible to organize data in a table form.
   B. It is important to properly label the rows and columns including the title.
   C. There is no need to properly label the rows and columns including the title.
   D. Label only the rows and columns and there is no need to write a title for the table.

7. One of the steps in presenting data in a line graph is putting a mark for each ordered pair of values of the independent and dependent variables. You do this by
   A. by plotting a point
   B. by drawing a line
   C. by creating a table
   D. by graphing

8. What do the points plotted in a line graph represent?
   A. An ordered pair of values of the independent and dependent variables.
   B. Nothing, it is used as a mark only.
   C. The data.
   D. A view of the graph.

9. What kind of line is used to connect the points in the line graph?
   A. ray
   B. line segment
   C. angle
   D. parallel lines

10. Which of the following is the correct order of the steps in presenting data in a line graph?
    A. Draw the X– axis and the Y – axis.
    B. Label the data given on the Y – axis and the X – axis. Compute the range of the data. Decide what interval to use. Begin the scale with 0.
    C. Plot the points by drawing a dot to show respective information.
    D. Connect the points by a line segment.
    E. Write the title on the top of the graph.

    A. A-B-C-D-E
    B. B-C-A-D-E
    C. B-A-D-C-E
    D. A-C-D-B -E

Lesson 1 Organizing Data in Tabular Form

Every statistical investigation begins with a question to be answered, or a statement to be tested or proved. To do this, we need to have information or data. You can get these data through interviews, surveys, direct observation or other data collection techniques. Once you have your data, these need to be organized. Tables and line graphs help us to more easily see, analyze and interpret the data. They not only help us see how variables change but also whether there are trends.

In this module, you will learn how to organize and present data in tabular form as a way of interpreting the collected data in one to two variables. Are you ready?

What's In

Before we start with the lesson, let us first check your knowledge and understanding of some very important concepts and skills.

Read the story below and answer the questions that follow.

Mr. Dela Cruz asked his students to identify the fruit they like best. Below is a tally of the students' responses.

mango	mango	santol	papaya	banana
banana	papaya	mango	mango	banana
mango	banana	mango	santol	papaya

Summarize the students' responses by completing the table below.

Responses	mango	Banana	papaya	santol
Tally	𝍸 |	4	3	2

Based on the tally,

1. How many students like bananas best?
2. How many students like mangos best?
3. How many students like papayas best?
4. How many students like santols best?
5. How many different kinds of fruits in all did the students say they like best?

What's New

Organizing data in tabular form allows you to more easily interpret and analyze data. The data may consist of any information about any subject of your interest. This may be such information as your quarterly grades, your scores in quizzes in different subjects, or even game results in your school's sports activities. You will understand this better as you go through this module.

Let us consider the scenario below:

Ms. Partuza recorded the Math Quiz results of her Grade 5 students.

The scores are listed below.

5	4	3	5	1	4	3	5	5	2	4	3	4
4	4	5	5	4	4	5	4	4	3	5	4	5
3	5	3	4	4	5	1	4	2	5	4	5	4

Based on the above data, how many students got 5? How many students got below 3? If the passing score is 4, how many passed the quiz? What was the lowest score obtained by a student?

How may Ms. Partuza analyze her quiz results and answer the questions?

What is It

Organizing data in tabular form is one way of presenting data.

Let us recall our earlier problem concerning the Math quiz scores of Ms. Partuza's Grade 5 students. Look at the tally of the scores again.

5	4	3	5	1	4	3	5	5	2	4	3	4
4	4	5	5	4	4	5	4	4	3	5	4	5
3	5	3	4	4	5	1	4	2	5	4	5	4

We are being asked to answer the following questions:

1. How many students got 5?
2. How many students got below 3?
3. If the passing score is 4, how many passed the quiz?
4. What was the lowest score obtained by a student?

It is easy to see that the way the data are presented does not allow us to readily answer the questions asked. We need to organize and sort the scores – through the use of tables.

When organizing data in a table, it is important to plan how the table should look like. We need to know how many columns and rows the table should have, and how to put in the data.

So, how do we present data in tables? We illustrate the steps using the data of Ms. Portuza's Grade 5 students' scores in the Math quiz.

Step 1: Create a table. Before we make the table, we need to know how many rows and columns the table should have.

Our data consists of two sets of information: the scores and the number of students who got such scores. These are our variables.

The table then should show the scores, a tally for each of the scores and the total number students who got a particular score based on the tally, or what is referred to as *frequency*. Our table then should have 3 columns.

There are five different scores. The table should therefore have seven rows: one for the column headings, five for the scores and one for the totals.

We therefore need a table with 3 columns and 7 rows.

Step 2: Write the labels or column and row headings. The labels or column and row headings make it easier for us to organize and sort the data. They also help us interpret and analyze the data. This is shown below.

Scores	**Tally**	**Frequency**
5		
4		
3		
2		
1		
Total		

Step 3: Make a tally. Make a tally for each of the scores and complete the table.

Scores	**Tally**	**Frequency**
5	~~IIII~~ - ~~IIII~~ - III	13
4	~~IIII~~ - ~~IIII~~ - ~~IIII~~ I	16
3	~~IIII~~ - I	6
2	II	2
1	II	2
Total		39

Step 4: **Write an appropriate title the table**. The title of a table gives a brief description of the table to let the readers know immediately what the table and the data in it are about. The title also makes it easy to refer to the table.

The complete table is shown below.

Ms. Portuza's Grade 5 Students' Math Quiz Results

Scores	Tally	Frequency
5	𝍸 - 𝍸 - III	13
4	𝍸 - 𝍸 - 𝍸 - I	16
3	𝍸 - I	6
2	II	2
1	II	2
Total		39

With our table now complete, we are ready to answer the questions.

From the table it is easy to see the information we need to answer the questions about Ms. Portuza's class: there 13 students who got 5, 4 students got scores below 3, 29 students who got passing scores, and one student who got 1, the lowest score.

A table such as what we have just created above is called a **frequency table**.

One important note - In case the data is so large that it is impractical to include the tally in the table, this may be omitted. The column on frequency would be enough to serve the purpose. There is also no need for a tally if the frequency is already given.

Let us have another example:

Example 1:

Dianne and Kirby are Grade 5 students in Calbayog East Central Elementary School. They asked their classmates what their favorite sport was. The responses, including Dianne's and Kirby's are listed below.

Basketball	Table Tennis	Basketball
Table Tennis	Basketball	Table Tennis
Basketball	Badminton	Table Tennis
Basketball	Basketball	Basketball
Table Tennis	Badminton	Table Tennis
Volleyball	Volleyball	Badminton
Table Tennis	Badminton	Table Tennis
Badminton	Volleyball	Volleyball
Badminton	Volleyball	Basketball
Basketball	Basketball	Volleyball

Again, we go through the steps in tabulating the data.

Step 1: Create a table. How many columns and rows should the table have? What about the rows, how many should there be? Yes, the table should have three columns: one for the sports, one for the tally, and one for the frequency. There should be 7 rows – 1 for the column headings, 5 for the sports, and 1 for the total.

Step 2: Label the columns and rows. The table with the appropriate headings is shown below.

Sport	Tally	Frequency
Basketball		
Volleyball		
Table Tennis		
Badminton		
Total		

Step 3: Make a tally and complete the table.

Sports	Tally	Frequency
Basketball	𝍸 - 𝍸	10
Volleyball	𝍸 - I	6
Table Tennis	𝍸 - III	8
Badminton	𝍸 - I	6
Total		30

Step 4: **Write an appropriate title**.

Favorite Sport of the Students in Dianne and Kirby's Class

Sports	Tally	Frequency
Basketball	𝍸 - 𝍸	10
Volleyball	𝍸 - I	6
Table Tennis	𝍸 – III	8
Badminton	𝍸 – I	6
Total		30

Example 2: Tabulate the data given in the story below.

John Francis wanted to know how many of his 25 classmates have which birth month. He recorded the responses as follows: January – 4, February – 2, March – 1, May - 3, June- 6, August – 2, September – 1, October – 5, November – 1.

Follow the steps.

Step1: Create a table. For this example, there will only be two columns. There is no need to tally as the frequencies are already given. There will be one row for the column headings and twelve rows for the twelve months.

Step 2: Label the columns and rows with the appropriate headings. The table with the appropriate headings is shown below.

Birth Month	Frequency
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

Step 3: Make a tally. There is no need to make a tally here as the frequencies are already given. We just need to complete the table with the collected or given data. The completed table is shown below.

Birth Month	Frequency
January	4
February	2
March	1
April	0
May	3
June	6
July	0
August	2
September	1
October	5
November	1
December	0

Step 4: **Write an appropriate title for the table.** The final table is shown below.

John Francis Classmates' Birth Months

Birth Month	Frequency
January	4
February	2
March	1
April	0
May	3
June	6
July	0
August	2
September	1
October	5
November	1
December	0

Example 3: Tabulate the data given in the story below

> *The Subject Club Adviser conducted a survey about the top favorite subject of students. These are the results of the survey. Mathematics - 13, English - 14, Science - 11, Filipino - 9, Aral., Pan. – 6, MAPEH – 5, EPP – 8.*

We follow the same steps.

Step1: Create a table. Determine the number of columns and rows. Again, there will only be two columns. There will be eight rows. Why?

Step 2: Label the columns and rows with appropriate headings. This is shown below.

Subjects	Frequency
Mathematics	
English	
Science	
Filipino	
Aral. Pan.	
MAPEH	
EPP	

Step 3: Make a tally and complete the table. Again, there is no need to tally as the frequencies are already given. You just need to complete the table using the collected or given data.

Subjects	Frequency
Mathematics	13
English	14
Science	11
Filipino	9
Aral. Pan.	6
MAPEH	5
EPP	8

Step 4: **Write an appropriate title for the table.**

The final table is shown below.

Students' Top Favorite Subject

Subjects	Frequency
Mathematics	13
English	14
Science	11
Filipino	9
Aral. Pan.	6
MAPEH	5
EPP	8
Total	66

What's More

Activity 1: Follow my Steps!

Directions: Make a frequency table of the given data. Write your answer on a separate sheet of paper.

.

1. Marjorie' s quarterly grading period grades in Mathematics 5 are as follows: first quarter – 85, second quarter - 88, third quarter – 90, fourth quarter – 95.
2. The weather station recorded the day's highest temperatures for the past week as follows: Monday 29°C; Tuesday – 28°C; Wednesday - 27°C; Thursday- 30°C; Friday - 32°C; Saturday – 26°C; Sunday - 31°C.

Step 1: Create a table.
Step 2: Label the columns and rows using appropriate headings.
Step 3: Tally and complete the table.
Step 4: Write an appropriate title for the table.

Activity 2: Fill Me In!

Directions: Tabulate the data and write a title for the table. Write your answer on a separate sheet of paper.

1. The school physician recorded the gender of the patients who entered the school clinic between 8:00 AM and 5:00 PM. The school physician used G for girls and B for boys. The data are shown below:

G G B B G B G B G B B G G G B G B G G B G B G B G

Title: _____

Gender	Tally	Frequency

2. Carl recorded the color of the balloons in a party. The data are shown below.

white	orange	blue	red	orange	blue
orange	white	blue	red	orange	white
orange	orange	white	orange	blue	white
red					

Title: _____

Color of Balloons	Tally	Frequency

Activity 3: Complete Me!

Directions: Organize the data in a table with an appropriate title and label each row and column. Write your answer on a separate sheet of paper.

1. The Grade 5 class advisers recorded the ages of their students. They combined their data and got the following. 12 y. o. – 15; 11 y. o. – 25, 10 y. o. – 25, 10 y. o. - 40; and 9 y. o. – 35.

2. The librarian made this report on the number of students by grade level who used the library within a period of one month. Grade1 - 50, Grade 2 - 70, Grade 3 - 65, Grade 4 – 120, Grade 5 - 135 and Grade 6 – 200.

What I Have Learned

Based on what you have learned, answer the following questions. Write your answer on a separate sheet of paper.

What are the steps in organizing data in tabular form?

Step 1: _____.

Step 2: _____.

Step 3: _____.

Step 4: _____.

What I Can Do

A. Directions: Study each problem below and organize the data in tabular form. Write your answer on a separate sheet of paper.

1. During the Recycling Drive of Calbayog East Central Elementary School, the Grade 5 students collected used plastic bottles in their barangay. The breakdown of the number of plastic bottles collected per section was as follows: 50 for Gr. 5–Bangon Falls, 100 for Gr. 5–Lologayan Falls, 100 for Gr. 5–Pan as Falls, 150 for Gr. 5-Tabokno Falls and 200 and for Gr. 5–Ton–ok Falls.

2. All the 4P's Beneficiaries of Barangay Hamorawon were required to collect used plastic wrappers. They intended to use the plastic wrappers in making bags, pockets, etc. They were able to collect-wrappers of the following products: Kopiko White - 60, Mang Juan - 40, Chippy – 55, Nescafe Original - 70, Cracklings – 35, and Oishi – 50.

B. SURVEY TIME! Write your answer on a separate sheet of paper.
   1. Conduct a survey among the members of your family about:
      a. their favorite home-cooked foods
      b. their most liked TV or internet personality
      c. their pastime activity during community quarantine

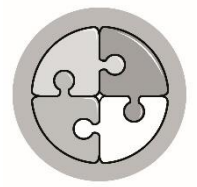
Organize the data in 3 tables. Label the rows and columns with the proper headings and write an appropriate title for each table. From the tables, name the items with the highest frequencies.

Lesson 2 Presenting Data in a Line Graph

In order to present the organized data in a line graph, you need to master the skills in organizing, sorting, and tabulating data.

In this module, you will learn how to present data in a line graph.

Are you ready?



What's In

In the previous lesson, you learned about organizing and presenting data in in tables. To do this, a step-by-step process was discussed. Following these steps will help you organize the data in table form.

Follow these steps to organize data in a table.

Mr. Rosales, who owns a store, recorded his past month's sales of 5 kinds of snacks: sold for a month. The snacks were Pancit, Sandwich, 2000; Egg Sandwich, 1000; Bread Roll, 800; Banana Cue, 900; and Hotdog Burger, 1500.

Step 1: Make a table. Determine the number of columns and rows.

Step 2: Write the column and row labels or headings.

Step 3: Make a tally. Complete the table using the collected or given.

Step 4: Write a title for the table.

What's New

In Lesson 1, you were taught how to organize data in tabular form. In this lesson, we will learn how to present data in a line graph. The steps in presenting data in a line graph may be best illustrated using an example. We start with the story below.

Charito's record of sales of eggs for the week is shown in the table below.

Number of Eggs Sold by Charito for the Week

Day	Number of Eggs (in dozens)
Sunday	20
Monday	10
Tuesday	40
Wednesday	30
Thursday	20
Friday	50
Saturday	70

How do we present the same set of data in a line graph?

What is It

A line graph is one way of presenting data involving two sets of information – one set for the independent variable and one set for the dependent variable. It is constructed using a rectangular coordinate system which consists of a pair of axes – the horizontal or x-axis and the vertical or y-axis. The x-axis shows the values of the independent variable; the y-axis, the values of the dependent variable. The data are represented by points using the values of the variables as coordinates.

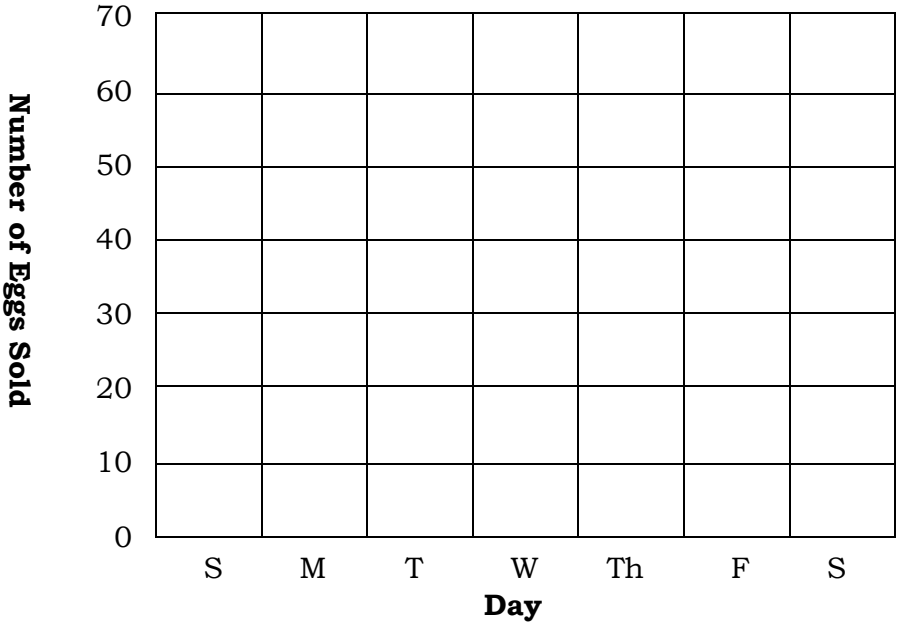
Let us look at the table again.

Sunday	20
Monday	10
Tuesday	40
Wednesday	30
Thursday	20
Friday	50
Saturday	70

Here, the independent variable is Day of the Week; the dependent variable, the Number of Eggs Sold. The axes are labeled using these.

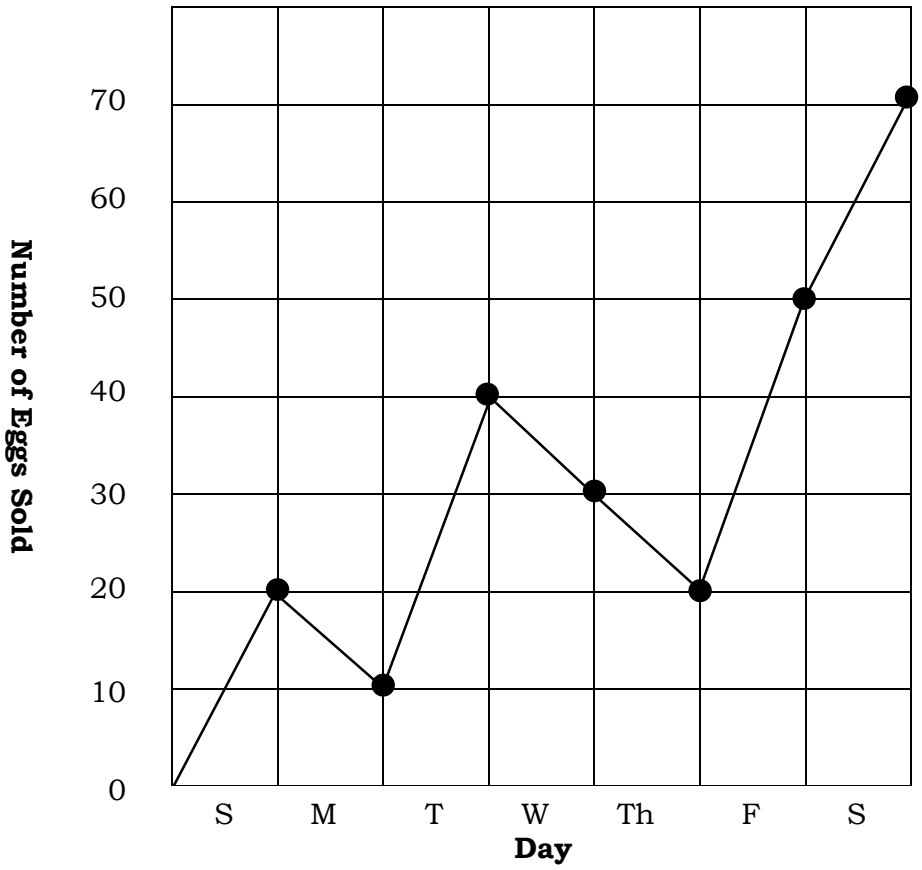
We next lay out the days of the week along the x-axis; the number of eggs sold along the y-axis, in intervals of 10 as it is not practical to lay out all the numbers from 0 to 70. We draw gridlines coinciding with the laid-out values of the variables to aid us in graphing.

These are all shown below.

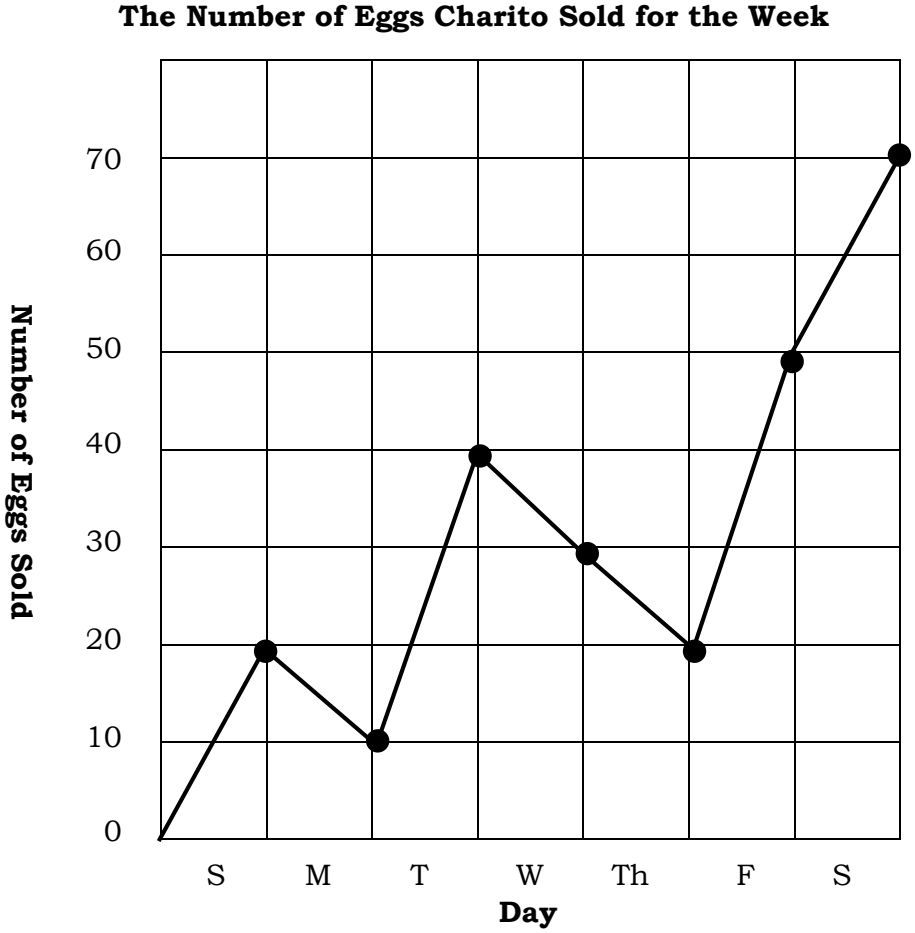


Next, we plot the points using ordered pairs of values of the independent and dependent variables from our given data. From the table, we have the following ordered pairs: (Sunday, 20), (Monday,10), (Tuesday,40), (Wednesday,30), (Thursday,20), (Friday,50), and (Saturday, 70).

Then, starting from the origin, we connect the points consecutively from left to right using lines.



Finally, to give a brief description of the data being presented, we give our line graph a title. – The Number of Eggs Charito Sold for the Week.



As you can see, the line graph gives us a pictorial view of the data. As the saying goes, "A picture paints a thousand words". Thus, we can immediately see the changes as well as trends in the values of the variables.

Let us now summarize what we have done and outline the steps in presenting data in a line graph.

1. **Determine the independent and dependent variables**.

2. **Draw and label the x and y axes**. Draw the axes and label the x-axis using the using the independent variable and the y-axis using the dependent variable.

3. **Lay out the values of the variables.** Lay out the values of the independent variable along the x-axis, and the values of the dependent variable along the y-axis, using appropriate intervals, if necessary. Draw a grid with vertical lines and horizontal lines coinciding with the laid-out values of the variables.

4. **Plot and connect the points.** Using ordered pairs of values of the independent and dependent variable from the data, plot the corresponding points. Then, starting from the origin, connect the points consecutively from left to right.

5. **Write an appropriate title above the graph.**

Let us have another example.

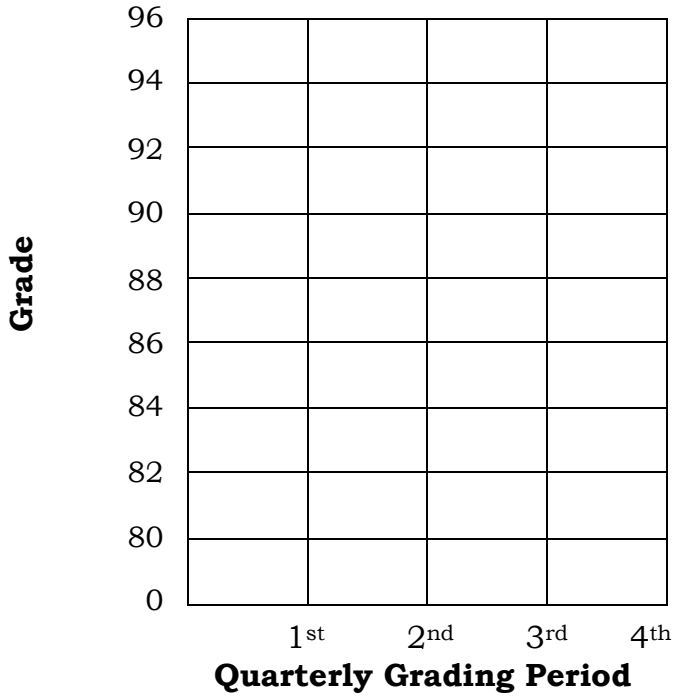
Example1: Draw a line graph for the given data.

Marjorie's Quarterly Grade in Mathematics 5	
Quarter	Grade
1st	84
2nd	88
3rd	90
4th	95

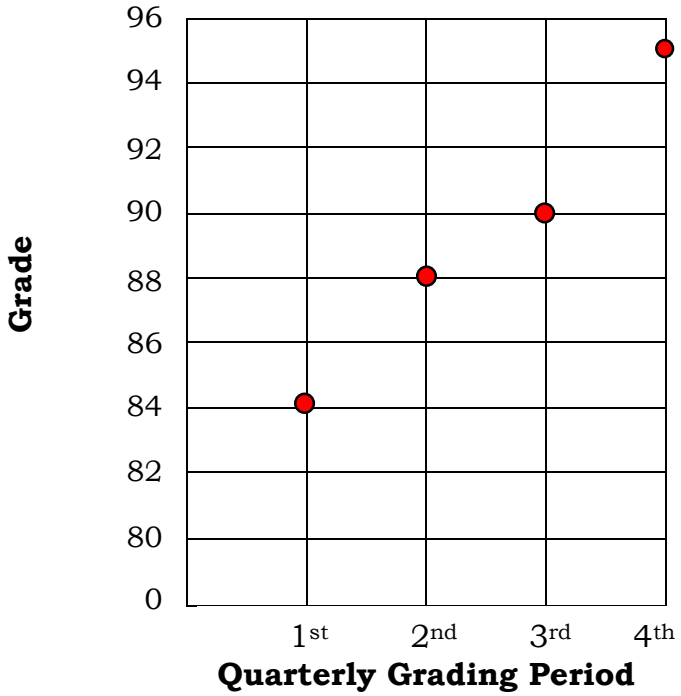
We follow the steps.

Step 1: Determine the independent and dependent variables. The independent variable is "Quarter e.g. 1st"; the dependent variable, "Grade e.g. 84".

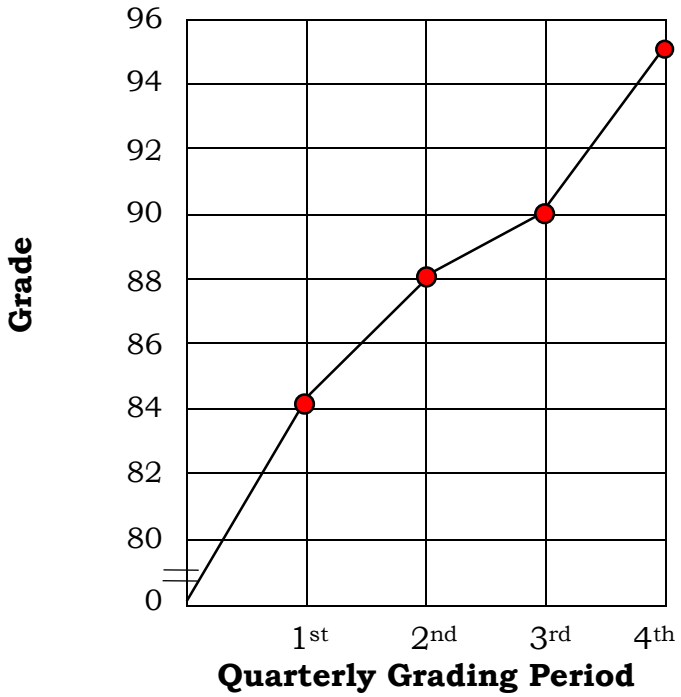
Step 2. Draw and label the x and y axes. Draw the x-axis and label it "Quarter", and the y-axis and label it "Grade".



Step 3. Lay out the values of the variables. Lay out the quarters 1st, 2nd, 3rd, and 4th along the x-axis. Given the way the grades are clustered, you may just lay out the values 0 and then 80 to 96 in intervals of 2 along the y-axis. Put the mark "II" between 0 and 80 to indicate a break in the scale. Then, draw a grid with vertical lines and horizontal lines coinciding with the laid-out values of the variables.

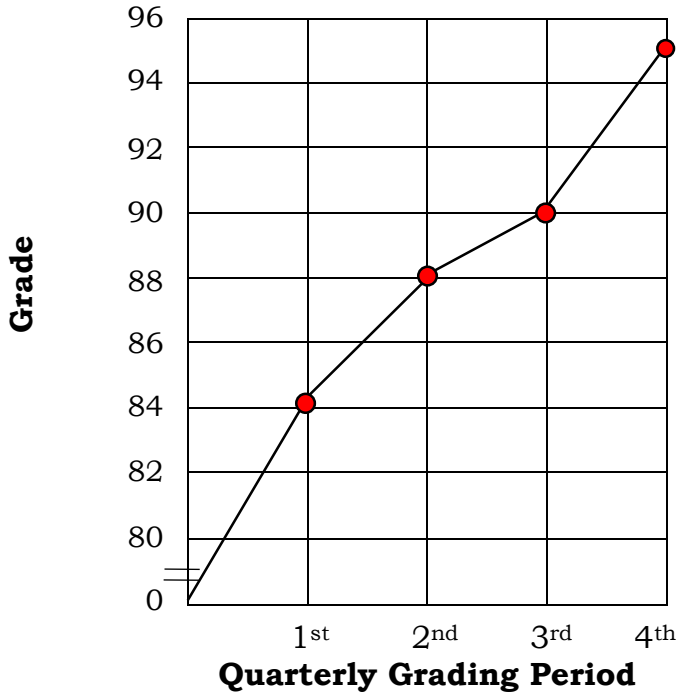


Step 4. Plot the points and connect the dots. Plot the points corresponding to the ordered pairs of values of the independent and dependent variables from the table. Then, starting from the origin, connect the dots consecutively from left to right.



Step 5: **Write an appropriate title above the graph.**

Marjorie's Grade in Mathematics 5 in every Quarter



Example 2: Construct a line graph using the data in the table below.

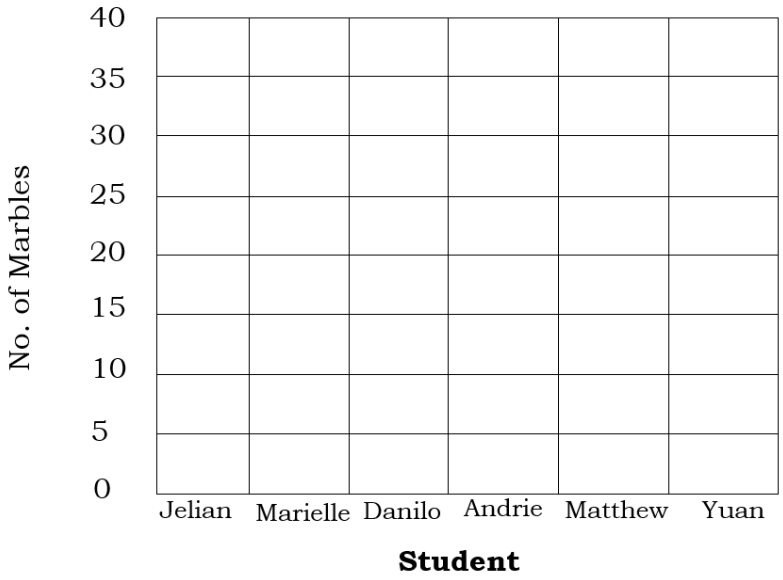
Marbles Collected by the Students

Student	Number of marbles collected
Jelian	20
Marielle	30
Danilo	25
Andrie	35
Matthew	30
Yuan	40

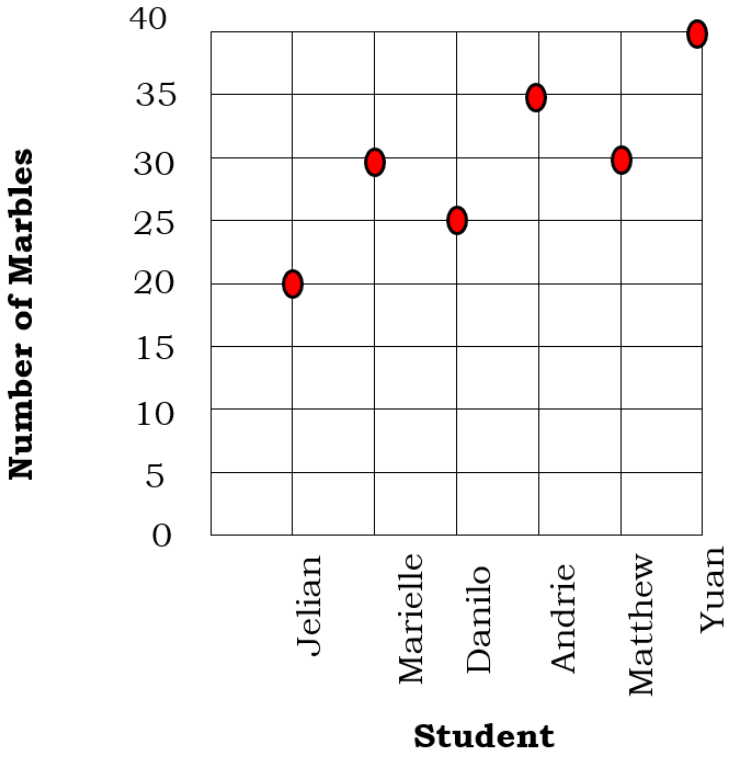
Follow the steps.

Step 1: Determine the independent and dependent variables. The independent variable is "Student e.g. Jelian"; the dependent variable, "Number of Marbles Collected e.g. 20".

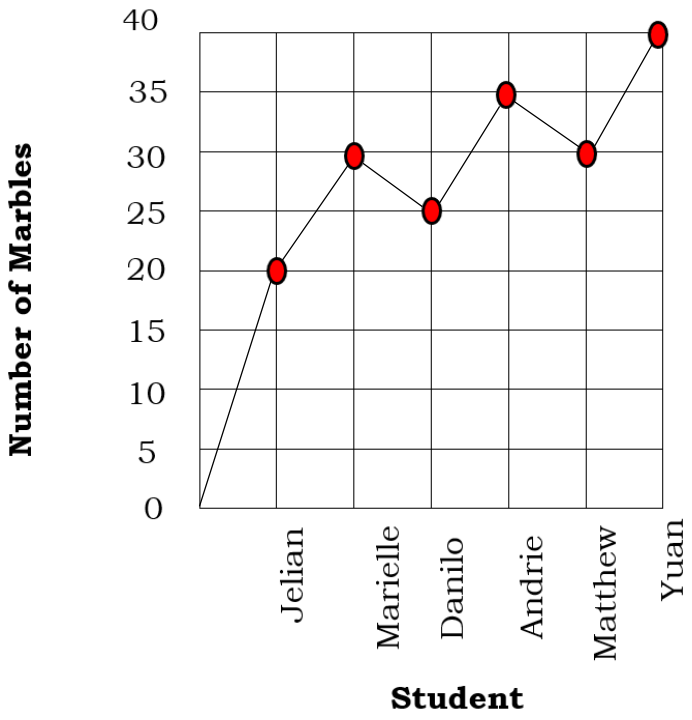
Step 2. Draw and label the x and y axes. Draw the x-axis and label it "Student", and the y-axis and label it "Number of Marbles Collected".



Step 3. Lay out the values of the variables. Lay out the names of the students along the x-axis and the values 0 to 40 in intervals of 5 along the y-axis. Then, draw a grid with vertical lines and horizontal lines coinciding with the laid-out values of the variables.

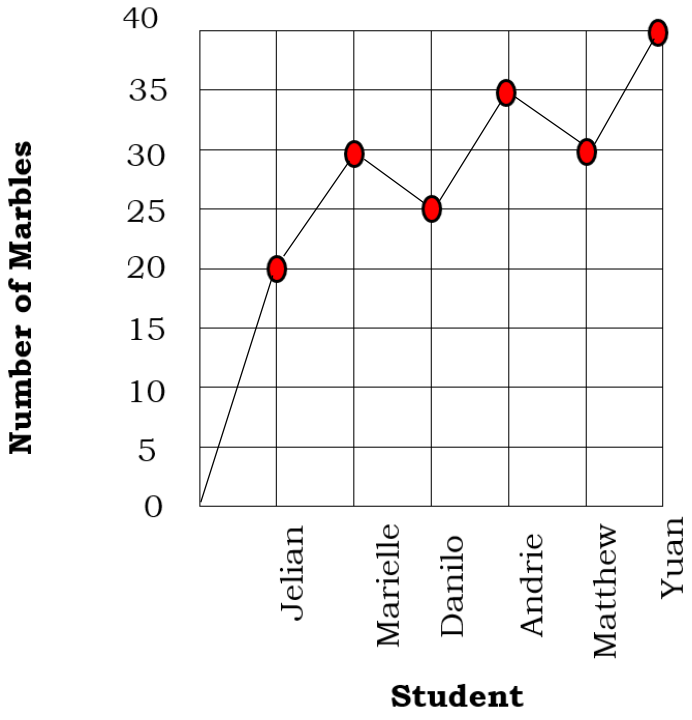


Step 4. Plot the points and connect the dots. Plot the points corresponding to the ordered pairs of values of the independent and dependent variables from the table. Then, starting from the origin, connect the dots consecutively from left to right.



Step 5: **Write an appropriate title above the graph.**

Marbles Collected by the Students



Example 3: Construct a line graph using the data in the table below.

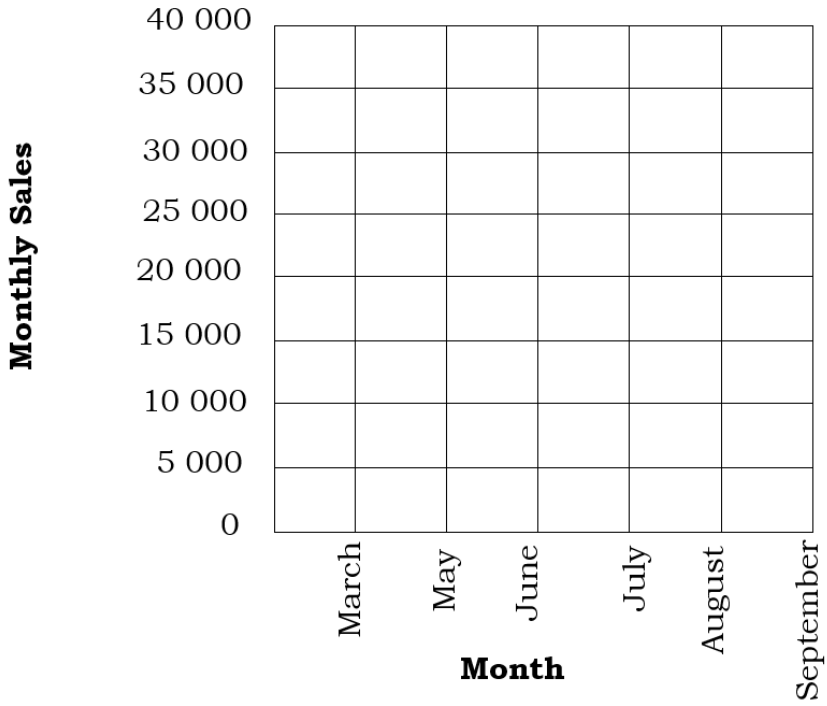
MPB Department Store's Monthly Sales

Month	Sales
March	₱ 20,000
May	₱ 40,000
June	₱ 30,000
July	₱ 35,000
August	₱ 25,000
September	₱ 15,000

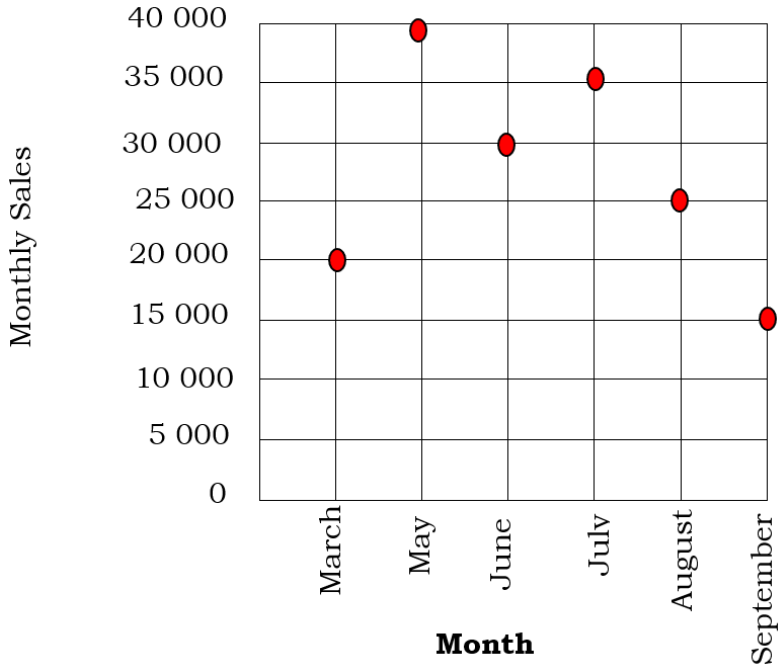
Follow the steps.

Step 1: Determine the independent and dependent variables. The independent variable is *Month*; the dependent variable, *Sales*.

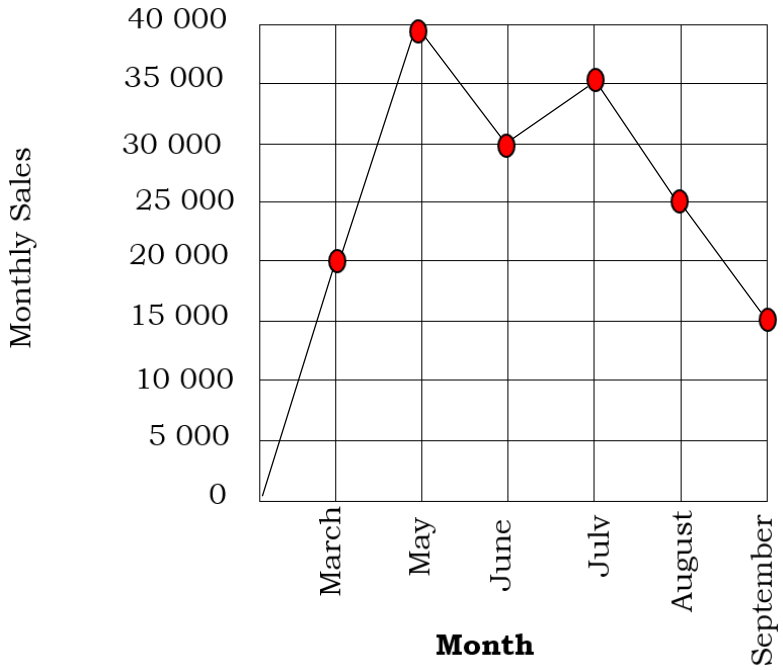
Step 2: Draw and label the x and y axes. Label the x-axis "Month" and the y-axis "Sales". Lay out the months March through September along the x-axis and the amounts 0 to 40,000 along the y-axis. We thus have,



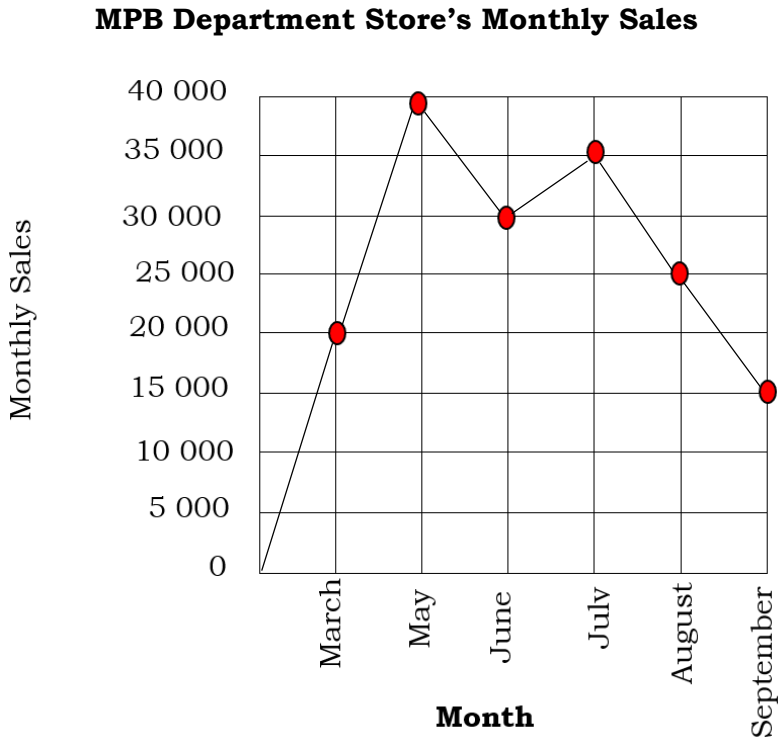
Step 3: **Layout the values of the variables.** Lay out the months along the x-axis and the values 0 to 40 000 in intervals of 5 000 along the y-axis. Then, draw a grid with vertical lines and horizontal lines coinciding with the laid-out values of the variables.



Step 4: **Plot the points and connect the dots.** Plot the points corresponding to the ordered pairs of values of the independent and dependent variables from the table. Then, starting from the origin, connect the dots consecutively from left to right.



Step 5: **Write an appropriate title above the graph.**



What's More

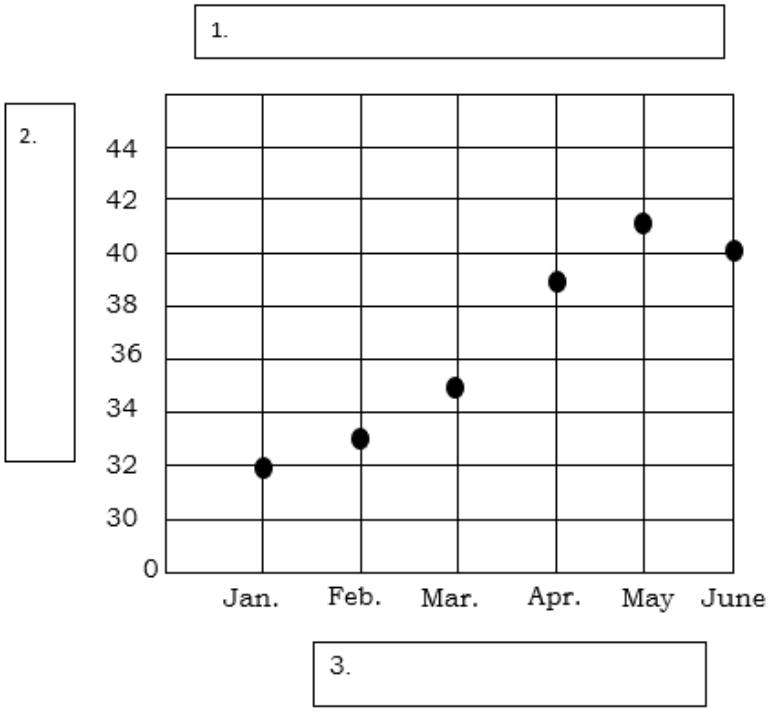
This time let us find out how well you have understood the topic on presenting organized data in a line graph. You can check your answers with the **Answer Key**.

Exercise No. 1

Directions: Fill in the line graph with the data in the table. Write your answer on a separate sheet of paper.

Neiljan's Weight (January – June, 2021)

Month	Weight (in kg)
January	32
February	33
March	35
April	39
May	41
June	40

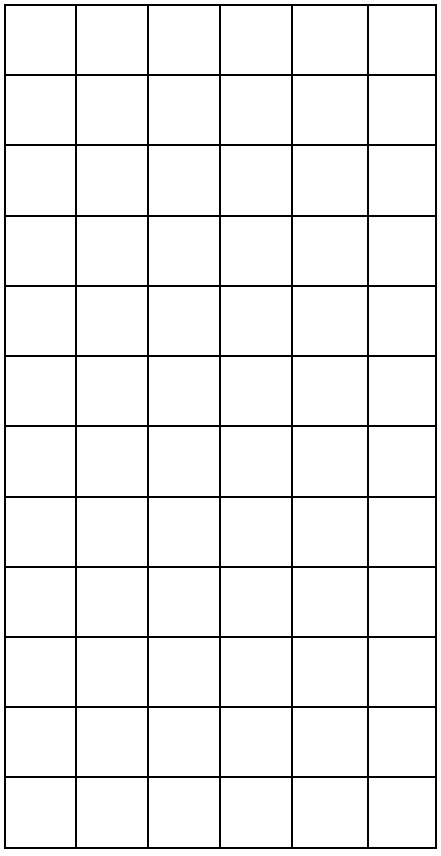


1. Write the title of the graph.
2. Label the y – axis with using the independent variable.
3. Label the x – axis using the dependent variable.
4. The scale/interval used is ____.
5. Connect the points using line segments.

Exercise No.2

Directions: Use the table below to present the data in a line graph. Write your answer on a separate sheet of paper.

Children's Favorite Vegetable	
Vegetable	**Frequency**
Ampalaya	30
Squash	35
Eggplant	40
String beans	20
Okra	15
Upo	10



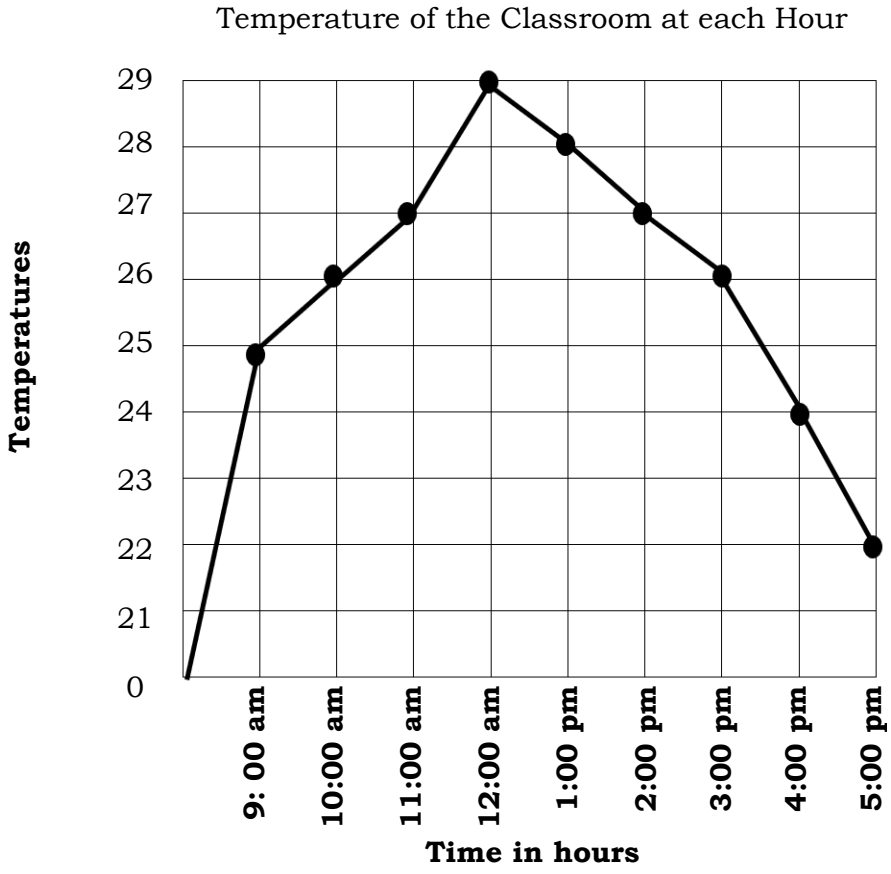
Exercise No. 3

Directions: Construct line graphs using the data in the tables. Write your answer on a separate sheet of paper. Number 1 is already done to serve as your guide.

1.

Temperature of the Classroom at each Hour	
Time	Temperatures
9:00 a.m.	25°C
10:00 a.m.	26°C
11:00 a. m.	27°C
12 :00 noon	29°C
1:00 p.m.	28°C
2:00 p.m.	27°C
3:00 p.m.	26°C
4:00 p.m.	24°C
5:00 p.m.	22°C

Answer:



2.

Students Using the Computer Room	
Days	Number of Students
Monday	15
Tuesday	13
Wednesday	10
Thursday	11
Friday	8

3.

Carl's Score in Computer Games	
Games	Scores
1st	5
2nd	10
3rd	10
4th	15
5th	20

What I Have Learned

Based on what you have learned, answer the following questions. Write your answer on a separate sheet of paper.

1. What are the steps in presenting the organized data in a line graph?

Step 1: _____.

Step 2: _____.

Step 3: _____.

Step 4: _____.

Step 5: _____.

2. What other learnings did you get?

I also learned that _____

_____

_____.

What I Can Do

Directions: Using your graphing paper construct a line graph using the data given in the table below. Write your answer on a separate sheet of paper.

Children's Favorite Computer Games

Computer Games	Number of Children
Counter – Strike	15
Left for Dead	20
Book Worm	10
Minecraft	15
Mobile Legends	30
Candy Crush	25

Assessment

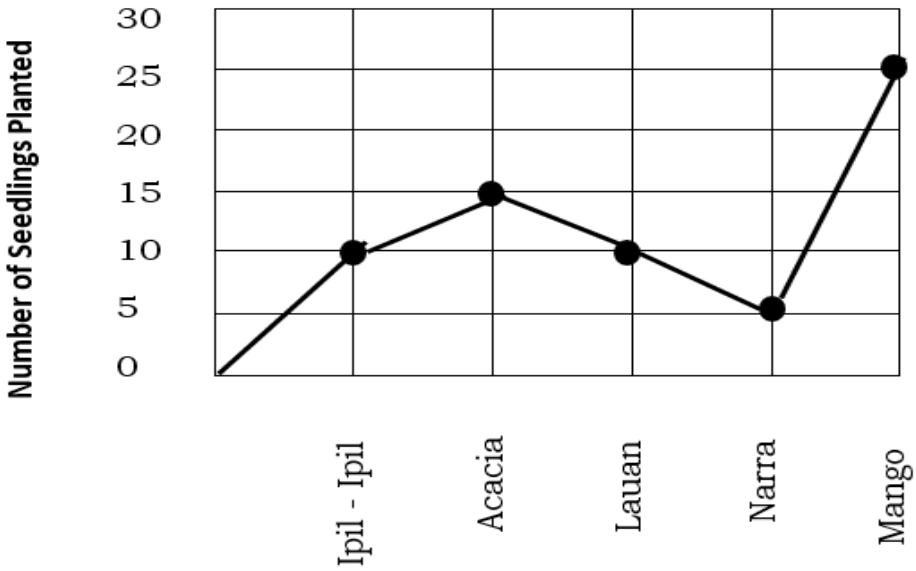
Directions: Read each statement carefully. Choose the letter that corresponds to the best answer. Write the chosen letter on a separate sheet of paper.

The GSP Council joined the Green Movement. They planted seedlings along the highway consisting of 10 ipil-ipil; 15 acacia; 10 lauan; 5 narra and 25 mango.

Seedlings planted by GSP Council

Seedling	Number planted
Ipil – Ipil	10
Acacia	15
Lauan	10
Narra	5
Mango	25

Different Seedlings Planted by the GSP Council



1. What kind of graph is shown above?
   A. Bar graph
   B. Pictograph
   C. Pie graph
   D. Line graph

2. What is the graph all about?
   A. Different Seedlings Planted by the GSP Council
   B. Number of Seedlings
   C. Name of Different Seedling
   D. Different Plants

3. What data is represented by the y – axis?
   A. Number of seedlings planted
   B. Number of plants
   C. Number of fruits
   D. Name of Different seedlings

4. What is the independent variable?
   A. Different fruits
   B. Number of fruits
   C. Name of Different Seedlings
   D. Number of seedlings planted

5. What interval was used for the dependent variable values laid out along the y – axis?
   A. 5
   B. 10
   C. 15
   D. 20

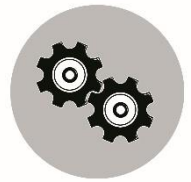
6. The following statements are all true, EXCEPT.
   A. It is important to organize the data.
   B. The collected data is organized in table form.
   C. It is easy to interpret and analyze the organized data.
   D. It is not important to properly label the rows and columns and the title.

7. How do you connect the points plotted in constructing a line-graph?
   A. Use rays.
   B. Use line segments.
   C. Use a hidden line.
   D. Use broken lines.

8. The following are steps in organizing the data in table form. Which should be the last step?
   A. Make a table.
   B. Write the title above the table.
   C. Determine the different answers.
   D. Make a tally of frequency or number of occurrences of each answer.

9. The points plotted in the line graph correspond to the _____.
   A. kind of seedling and number planted
   B. kind of plant and number planted
   C. kind of fruit and number of fruits
   D. kind of seed and number planted

10. Why is a line graph useful?
   A. It helps one write the data in a line graph.
   B. It helps one read the data in a line graph.
   C. It helps one see the data in a line graph.
   D. It helps one easily and clearly see the changes in the data.



Additional Activities

A. Directions: Construct a line graph based on the data below. Write your answer on a separate sheet of paper.

Monthly Deposit

Months	Deposits
Jan	₱ 800
Feb	₱ 750
March	₱ 500
April	₱ 750
May	₱ 400
June	₱ 350

B. Directions: Study these data. Organize them in table form. Decide what interval to use, then make a line graph. Write your answer on a separate sheet of paper.

The nutritionist made a track of the calories he burned per hour during activities he performed. He wants to organize the data he collected. These are the data: sleeping – 50, skipping rope – 700, aerobics – 450, walking at a normal pace – 250, jogging at 8 kilometers per hour – 500.

C. Chart your own scores in your 5 Math quizzes. Present this data in a line graph.

Answer Key

Lesson 1

What I Have Learned

The steps in organizing the data in tabular form are

Step 1: Make a table

Step 2: Determine the different answers

Step 3: Make a tally of frequency or number of occurrences of each answer.

Step 4: Write the title above the table.

What I Can Do

A.

1.

Grade 5 Students Collected Plastic Bottles for the Recycling Drive	
Sections	**Number of plastic bottles collected**
Bangon Falls	50
Lologayan Falls	100
Pan as Falls	100
Tabokno Falls	150
Ton-ok Falls	200

2.

4 P's Beneficiaries Collected Plastic Wrappers of any Products	
Plastic wrappers of any products	**Number of plastic wrappers collected**
Bangon Falls	50
Lologayan Falls	100
Pan as Falls	100
Tabokno Falls	150
Ton-ok Falls	200

B. Survey

Answers may vary.

What's More
Activity 1. Continuation

1.

Step 1: Make a table

Step 2: Determine the different answers

Days	**Temperature**
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

Step 3: Make a frequency of each range

Days	**Temperature**
Monday	29◦C
Tuesday	28◦C
Wednesday	27◦C
Thursday	30◦C
Friday	32◦C
Saturday	26◦C
Sunday	31◦C

Step 4: Write the title above the table

Temperature for one week	
Days	**Temperature**
Monday	29◦C
Tuesday	28◦C
Wednesday	27◦C
Thursday	30◦C
Friday	32◦C
Saturday	26◦C
Sunday	31◦C

What's More
Activity 2. Fill In Me!

1.

Patients entering the school clinic		
Gender	**Tally**	**Frequency**
Girls	𝍸 – 𝍸 - IIII	14
Boys	𝍸 – 𝍸 – I	11

2.

Different Colors of Balloons		
Color of Balloon	**Tally**	**(Frequency) No. of Balloons**
White	𝍸	5
Red	III	3
Orange	𝍸 – II	7
Blue	IIII	4

Activity 3. Complete Me!

1.

Ages of Grade 5 Students	
Ages	**Number of Students**
12 yrs. old	15
11 yrs. old	25
10 yrs. old	40
9 yrs. old	35

2.

Different Grade Level used the Library	
Grade Level	**Number of Students**
Grade 1	50
Grade 2	70
Grade 3	65
Grade 4	120
Grade 5	135
Grade 6	200

Lesson 2

Assessment

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

Additional Activities

A.

B.

What I Know

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

What's In

1. 4
2. 6
3. 3
4. 2
5. 4

What's More

Activity 1. Follow My Steps!

1.

Step 1: Make a table

Step 2: Determine the different answers

Quarter	Grades
1st	
2nd	
3rd	
4th	

Step 3: Make a frequency of each range

Quarter	Grades
1st	85
2nd	88
3rd	90
4th	95

Step 4: Write the title above the table

Marjorie's Quarterly Grades in Math 5	
Quarter	**Grades**
1st	85
2nd	88
3rd	90
4th	95

What's More

Exercise No. 1

What's More

Exercise No. 2

2.

Exercise No 3.

3.

What I Have Learned

1. The steps in presenting the organized data in a line graph are

   Step 1: Draw the lines for X-axis and the Y-axis
   Step 2: Label the data given on the Y-axis and the X-axis. Compute the range of the data. Decide what interval to use. Begin the scale with O.
   Step 3: Plot the corresponding point by drawing a dot to show respective information.
   Step 4: Connect the points by a line segment.
   Step 5: Write the title on the top of the graph.

2. Note: Students may give varied answer.

What I Can Do

References

Caingat, Maria Rovil L. 2005. *Enjoying Mathematics 5* Workbook. Mandaluyong City: Jedigar Enterprises.

Lumbre, Angelina P., and Alvin C. Ursua. 2016. *21St Century Mathematics 5 Textbook*. Quezon City: Vibal Group, Inc.

Villamor, Adela C., and Amelia C. Celeridad – Wright. 2015. *Math for Life 5* Worktext. Sampaloc, Manila: Rex Book Store, Inc.

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