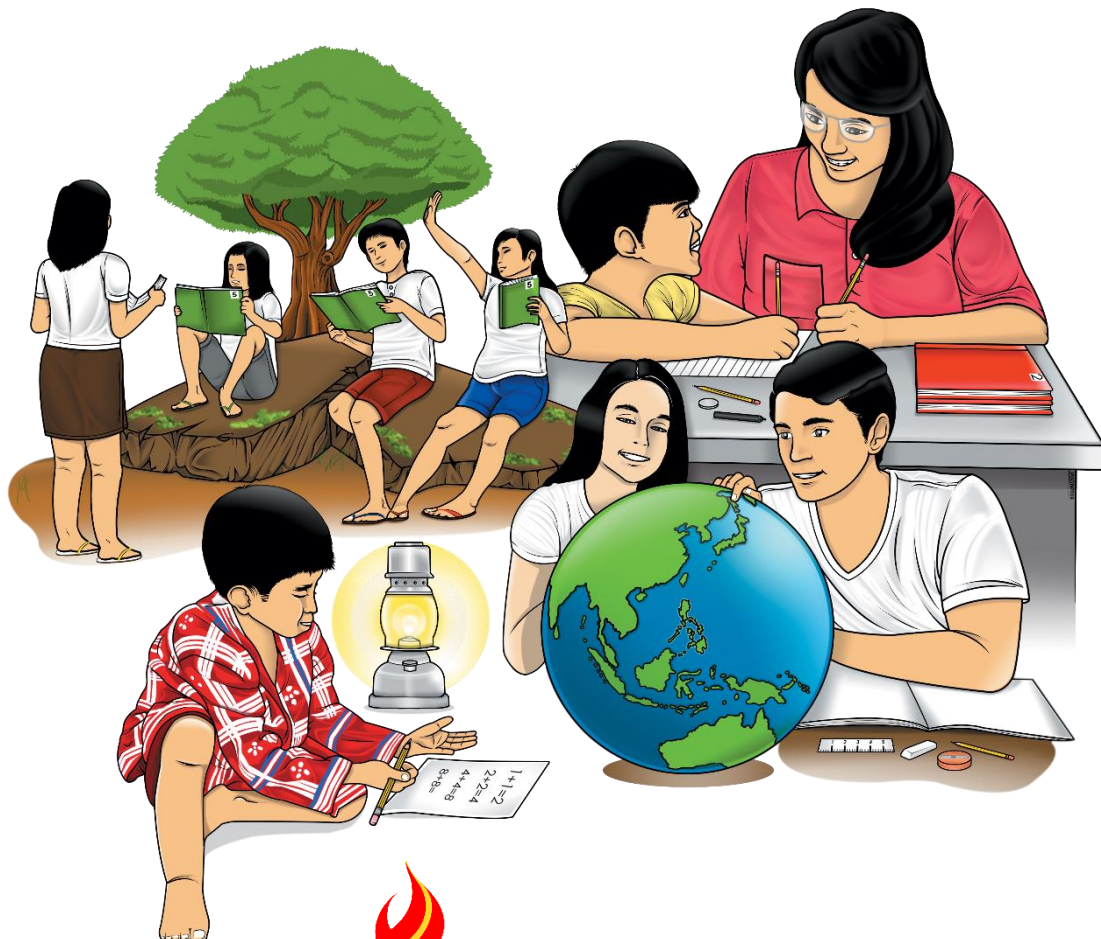


Mathematics

Quarter 4 – Module 14:

Drawing Inferences Based on the Data Presented in a Line Graph



Mathematics – Grade 5

Alternative Delivery Mode

Quarter 4 – Module 14: Drawing Inferences Based on the Data Presented in a Line Graph
First Edition, 2020

Republic Act 8293, section 176 states that: No copyright shall subsist in any work of the Government of the Philippines. However, prior approval of the government agency or office wherein the work is created shall be necessary for exploitation of such work for profit. Such agency or office may, among other things, impose as a condition the payment of royalties.

Borrowed materials (i.e., songs, stories, poems, pictures, photos, brand names, trademarks, etc.) included in this module are owned by their respective copyright holders. Every effort has been exerted to locate and seek permission to use these materials from their respective copyright owners. The publisher and authors do not represent nor claim ownership over them.

Published by the Department of Education

Secretary: Leonor Magtolis Briones

Undersecretary: Diosdado M. San Antonio

Development Team of the Module

Writers: Juanidad B. Conarco

Editors: Niann L. Atis, Hazel L. Mariveles

Reviewers: Renato S. Cagomoc, Rolando Lacbo, Joshua Sherwin T. Lim

Geraldine P. Sumbise, Herminia S. Balanay

Illustrator: Noel E. Sagayap

Layout Artist: Noel E. Sagayap, Jaycee B. Barcelona

Management Team: Ramir B. Uytico, Arnulfo R. Balane, Rosemarie M. Guino

Joy B. Bihag, Ryan R. Tiu, Sarah S. Cabaluna,

Thelma Cabadsan-Quitalig, Elena S. De Luna,

Renato S. Cagomoc, Noel E. Sagayap, Geraldine P. Sumbise

Joshua Sherwin T. Lim

Printed in the Philippines by _____

Department of Education – Region VIII

Office Address: DepEd Regional Office No. 8
Candahug, Palo, Leyte

Telefax: (053)-323- 3156

E-mail Address: region8@deped.gpv.ph

Mathematics

Quarter 4 – Module 14: Drawing Inferences Based on the Data Presented in a Line Graph

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 understanding and test your ability in drawing inferences based on the data presented in a line graph. We knew that a line graph is a kind of graph which presents data or information gathered and points were connected with line segment. Drawing inferences from line graph can give information both directly and indirectly. In other words, readers sometimes may have to make inferences or draw conclusions based on the data given.

Knowing how to draw inferences based on the data presented in a line graph and how to use them in real-life situations is important, especially in decision making on what will we do next and what will be happen before or after the event based on the gathered data or information. So, what are you waiting for? Stay focused and start-up.

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

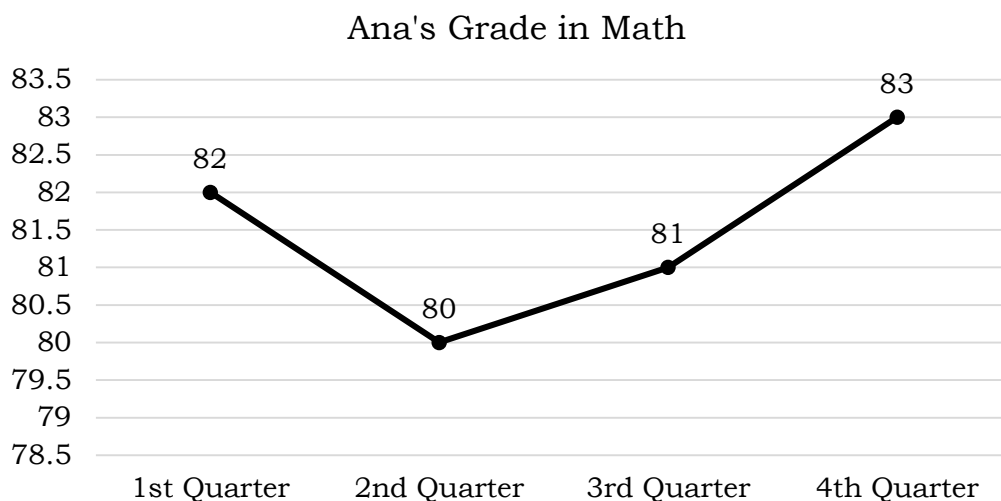
- draw inferences based on the data presented in a line graph.

Before going any further, let us check your understanding about drawing inferences based on the data presented in a line graph.



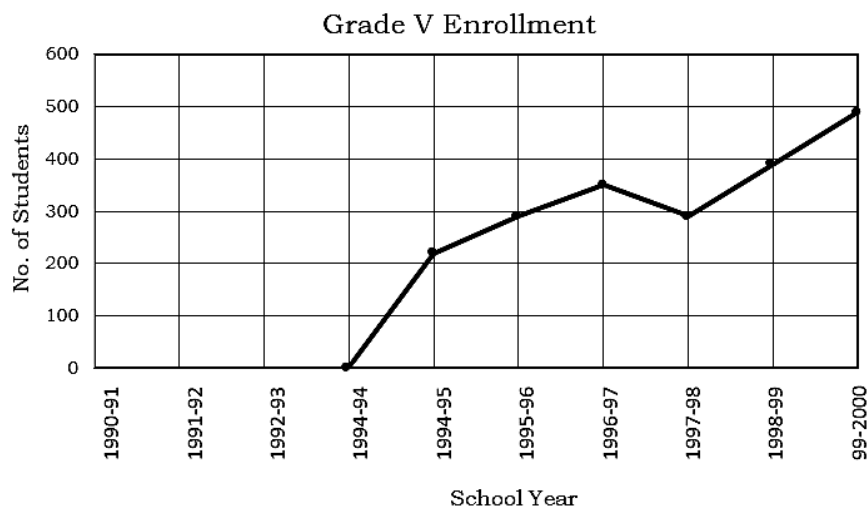
What I Know

Directions: For numbers 1-5, draw inferences based on the data presented. On your answer sheet, select the best answer of your choice.



1. Why do you think Ana got the highest grade in Mathematics during the fourth quarter?
 - a. She studied hard.
 - b. She is good in English.
 - c. She didn't study.
 - d. She got a new notebook.
2. Why do you think Ana got the lowest grade in the second quarter?
 - a. She did not study before taking the test.
 - b. She read math books.
 - c. She practiced good study habits.
 - d. She answered all the items in the test.
3. In what quarter Ana got the highest grade in Math?
 - a. 1st
 - b. 2nd
 - c. 3rd
 - d. 4th
4. How many points was the increased of grades in the 3rd to 4th quarters?
 - a. There was a 2 points difference.
 - b. There was s three points difference.
 - c. There was no difference.
 - d. Can't be determined.
5. In what quarter did Ana got the lowest grade in Math?
 - a. 1st
 - b. 2nd
 - c. 3rd
 - d. 4th

For numbers 6-10, please refer to the graph below.



6. What school year has the lowest enrollment?
 - a. 1999-2000
 - b. 1998-1999
 - c. 1995-1996
 - d. 1993-1994
7. What school year has the highest enrollment?
 - a. 1999-2000
 - b. 1998-1999
 - c. 1995-1996
 - d. 1993-1994
8. How many grade V students enrolled in the year 1996-1997?
 - a. 300
 - b. 400
 - c. 350
 - d. 375
9. In what year that the enrollment of grade v students almost 400?
 - a. 1999-2000
 - b. 1997-1998
 - c. 1998-1999
 - d. 1993-1994
10. Which of the following is the best reason for the decrease in the enrollment?
 - a. transfer to other school
 - b. did not go to school
 - c. applied for work.
 - d. work in the city

Lesson

1

Drawing Inferences About the Data Presented in a Line Graph

In order to draw inferences based on the data presented in a line graph, you need to master knowledge and understanding about line graph and the skills on interpreting data presented in it. In this module, you will learn how to draw inferences based on the data presented in a line graph. Are you ready?



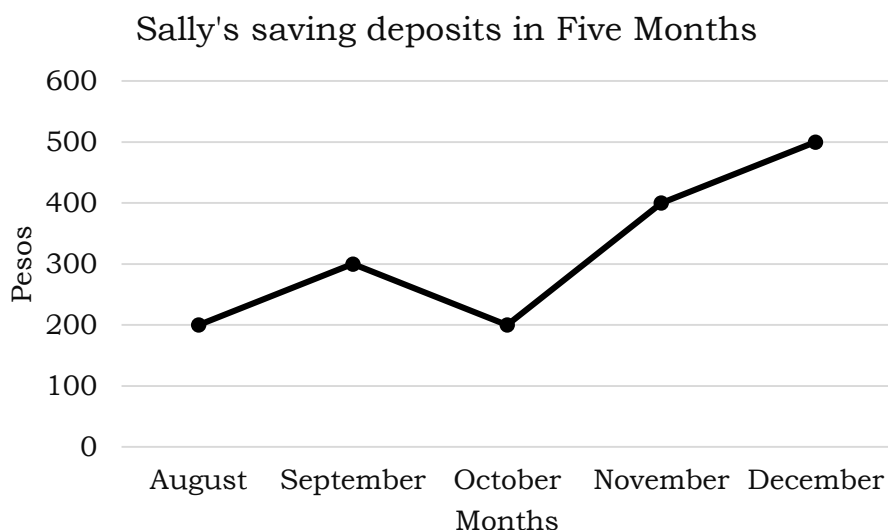
What's In

In the previous lessons, you were able to learn the concept of interpreting data presented in different kinds of line graphs. Recalling, a line graph has a vertical line called the y-axis and a horizontal line called x-axis. In a line graph, a line that goes up means an increase, and a line that goes down means a decrease. The increase and decrease in the graph can be used to determine the change in a quantity over a period of time.

Also, you have learned on how to solve routine and non-routine problems using data presented in a line graph.

Let us refresh your memory and try to answer the data presented below.

Below is a line graph showing Sally's deposit in five months. Read and analyze the graph and answer the questions that follow:



Questions:

1. What is asked? _____
2. What facts are needed to solve the problem? _____
3. What operation will you use? _____
4. What is the number sentence? _____
5. What is the complete answer? _____

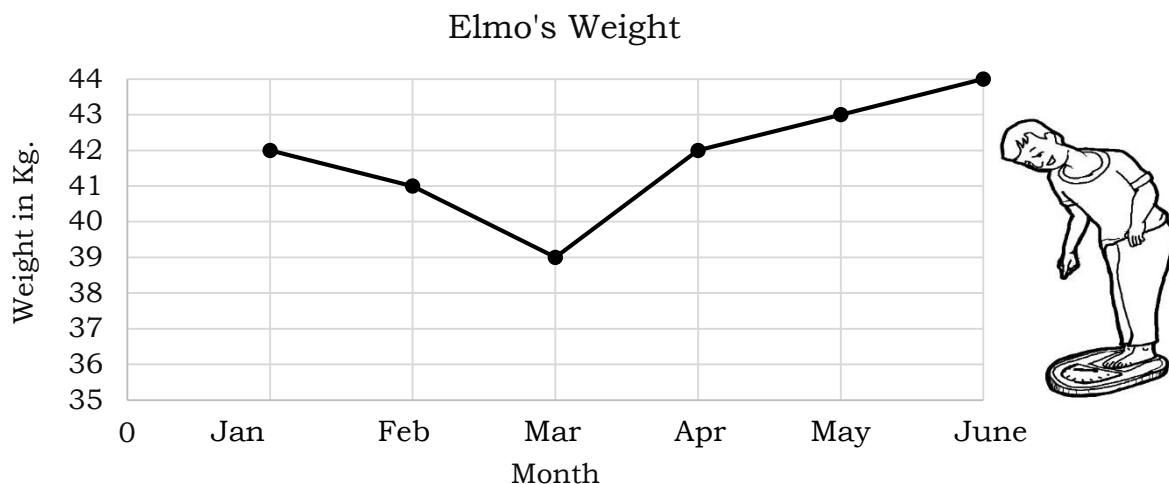


What's New

In this lesson, we will deal with drawing inferences based on the data presented in a line graph.

Do you know that we can draw inferences based on the data presented in a line graph? Drawing inferences based on the data presented in a line graph provides us prior knowledge from reliable data and developed conclusion by integrating them.

Example 1. Study the line graph below and interpret the data by answering the questions below.



Questions:

1. What does the graph is all about? _____
2. What month Elmo's weight is lowest? _____
3. What month Elmo's weight is highest? _____
4. What is the difference of Elmo's weight on the months of January and March? _____
5. How many kilograms of weight increased of Elmo from March up to May?



What is It

To draw inferences based from the data given in the line graph, it is important to:

- Observe the parts of the graph

Make sure that you master the parts of the graph and observe if all the parts are presented. (Title, x and y axis, label/data and the legend

- Understand the relationship being illustrated on the graph

Understand what the given data all about, the scale that show the units used on the line graph, the source wherein information needed are presented, the data being presented in vertical or y axis and horizontal or x axis and what is represented by the legend-

- Make prediction based on the described situation presented by the data on the graph.

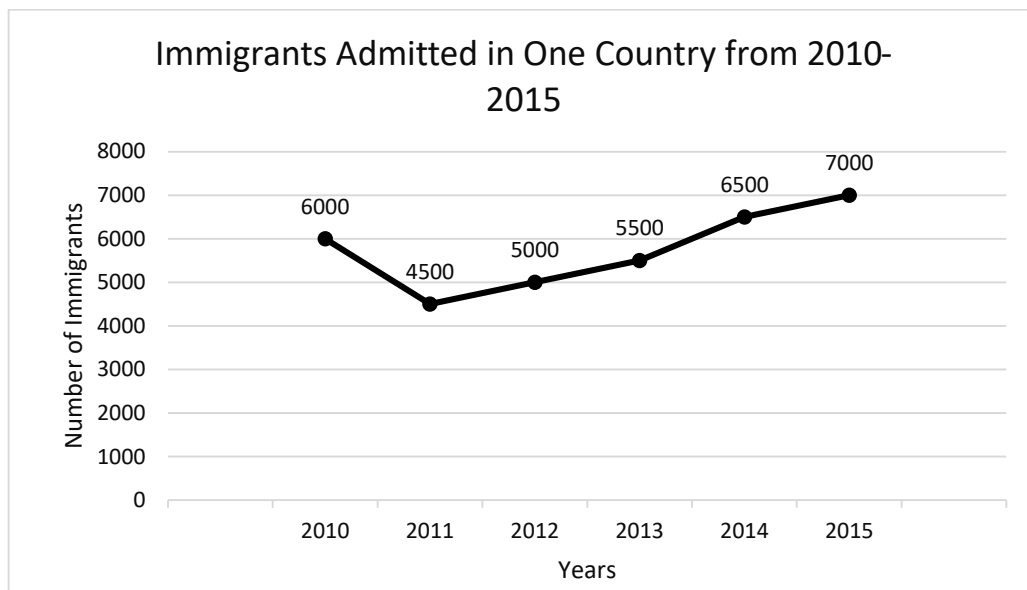
Review first, make sure that all labels are clearly illustrated.
Calculate an average for the different questions, if appropriate.
Observe-and make inference, something you think is true based on observation or findings on the data presented in a line graph.

The graph above shows Elmo's weight in 6 months from January to June. How does the line graph help us in drawing inferences about Elmo's weight? Can we make conclusions on the basis of facts and previous knowledge rather than on actual observations?

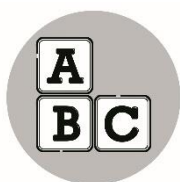
Based on the presented data, Elmo's highest weight is 44 kg in the month of June and his lowest weight is in the month of March which is 39 kg.

- From the information given and presented in the line graph, it can be inferred that Elmo's weight might increase basing from the trend from March to June. But if Elmo got sick or does not follow proper nutrition, we can infer that for the next month Elmo's weight might decrease.
- Therefore, drawing inferences is making predictions based on the described situation presented by the data on the graph.

Example 2. Study the line graph and answer the questions below.



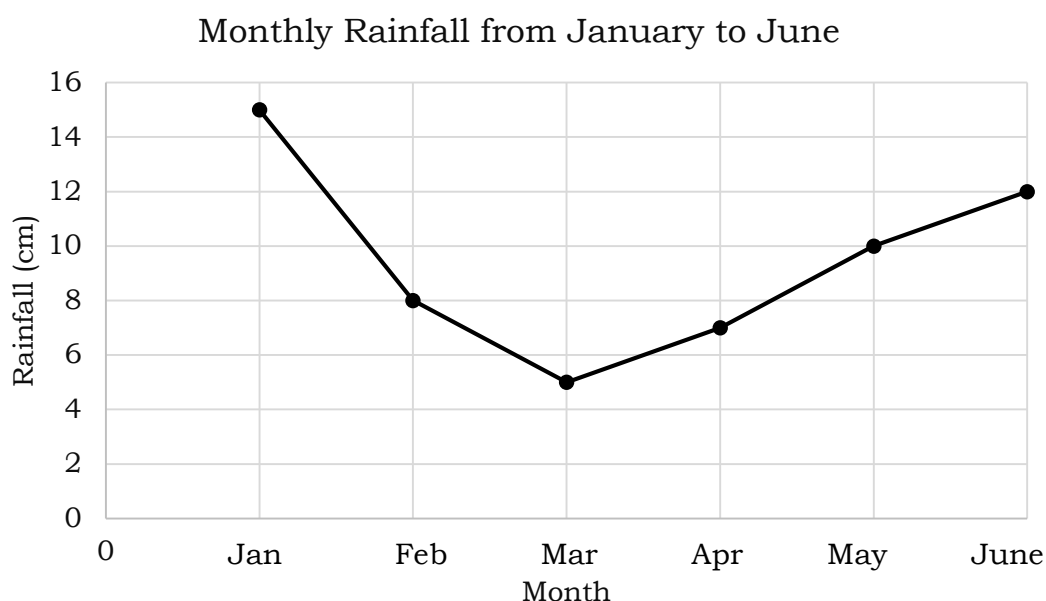
1. Why do you think there is an increasing number of immigrants from 2011-2015?
2. Basing from the trend shown by the graph, will the # number of immigrants decrease in 2016? Why? Why not?
3. What are the probable reasons why some Filipinos want to live permanently in a foreign country?
4. If you want to be an immigrant, what country do you want to live?
5. Do you think our country would progress if some Filipinos went abroad? Why? Why not?



What's More

Activity 1: Draw and Infer!

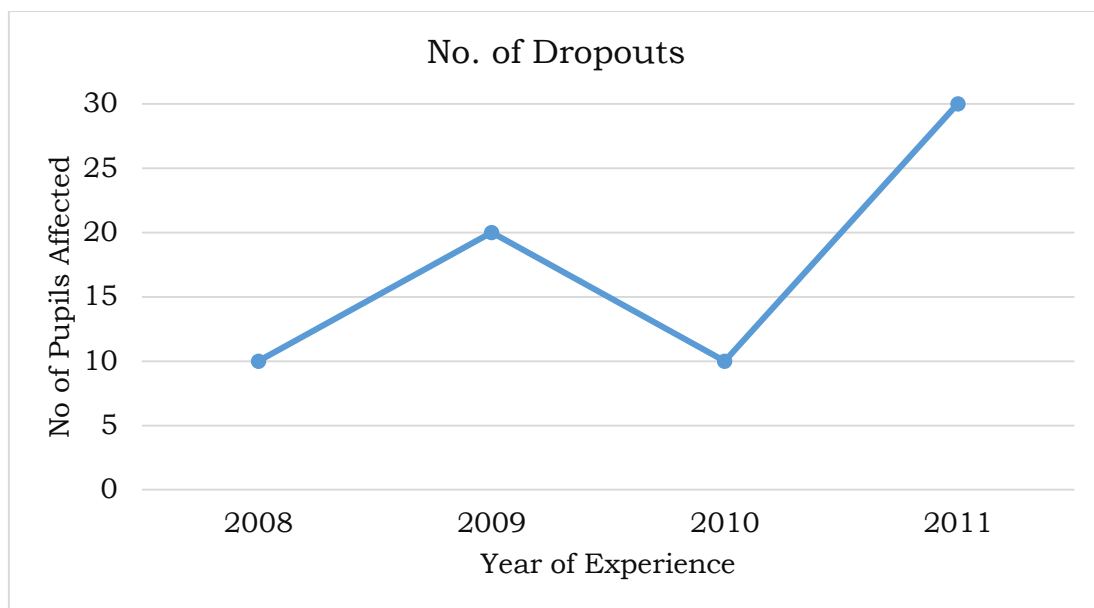
Directions: Draw inferences based on the given data presented in the line graph.



1. In which month was there a recorded 8 cm. of rainfall?
2. What was the highest rainfall observed from January to June?
3. How many cm. of rainfall was measured during the month of June?
4. Considering the trend in the line graph, when is the best time for farmers to plant?
5. What do you think would be the measured depth of rainfall recorded in the month of July?
6. What will happen if the recorded rainfall is too high?

Activity 2: Use Me and Infer!

Directions: The graph is about the common cold and influenza experienced of every pupil. Use the graph to answer the following questions below.

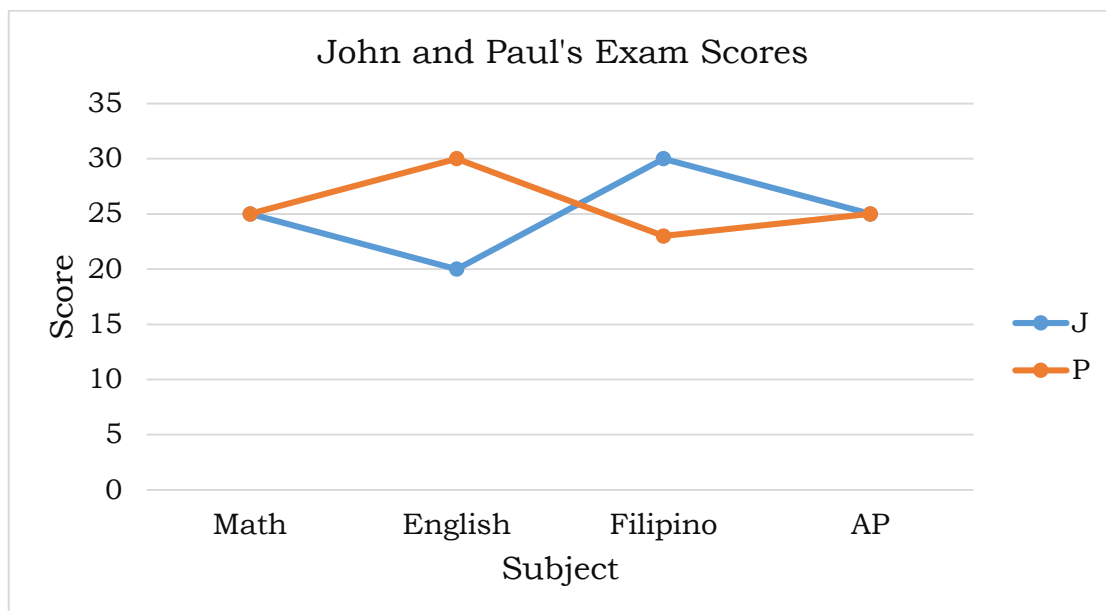


List down the number of dropouts in the corresponding year.

1. 2008 - _____
2. 2009 - _____
3. 2010 - _____
4. 2011 - _____

Activity 3: Double Your Inferences!

Directions: Draw inferences using the data on the double line graph to answer the questions.



In which subject did both boys get the same score?

1. In which subjects did John get a higher score than Paul?
2. In which subject did Paulo get a higher score than John?
3. What can you infer about the scores of the two boys?
4. Which subject that the two boys got highest and lowest scores?



What I Have Learned

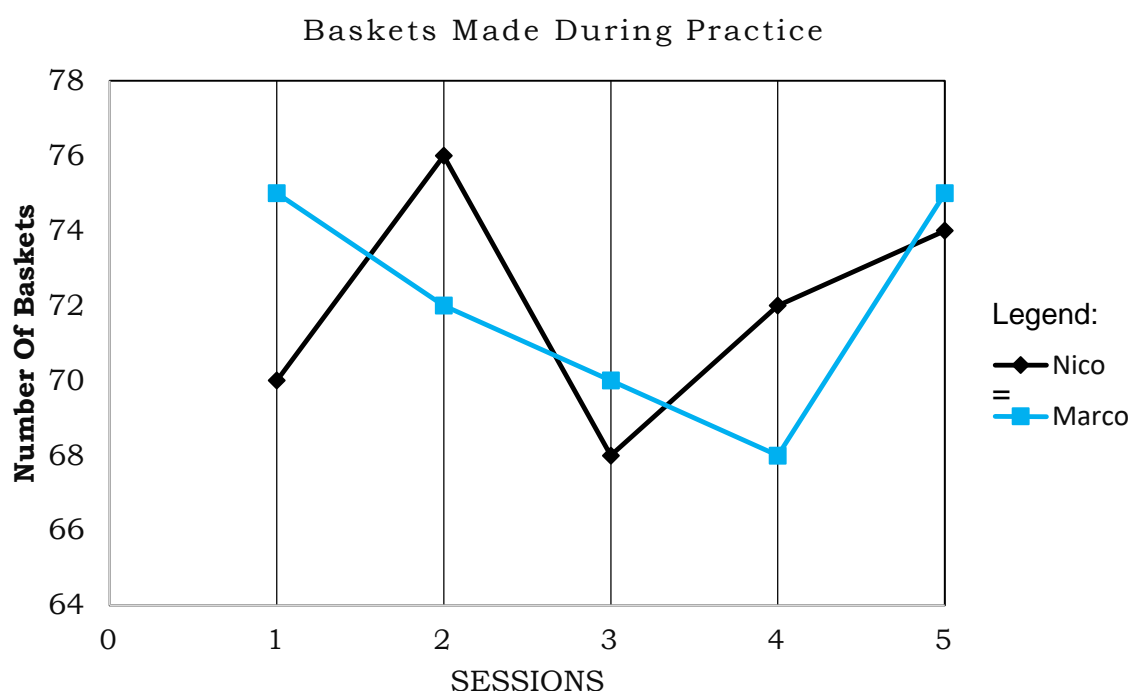
A. Fill in the blanks.

To draw inferences presented in a graph it is important to (1) _____, the parts of the graph. (2) _____ the relationship illustrated on the graph. (3) Make _____ based on the describe situation presented by the (4) _____ on the graph. (5) Observed and make _____, something you think is true.



What I Can Do

Drawing inferences is making a guess, something you think is true based on observations or findings on the data presented in a line graph. Drawing inferences is a helpful tool to practice and develop thinking skills because learning to draw inferences is a skill that develops over time by providing experience with inferential information of things we can see and experience in Mathematics and real-life situations. It can help the learner better assess the situation by understanding the facts and observe regularity in pattern.



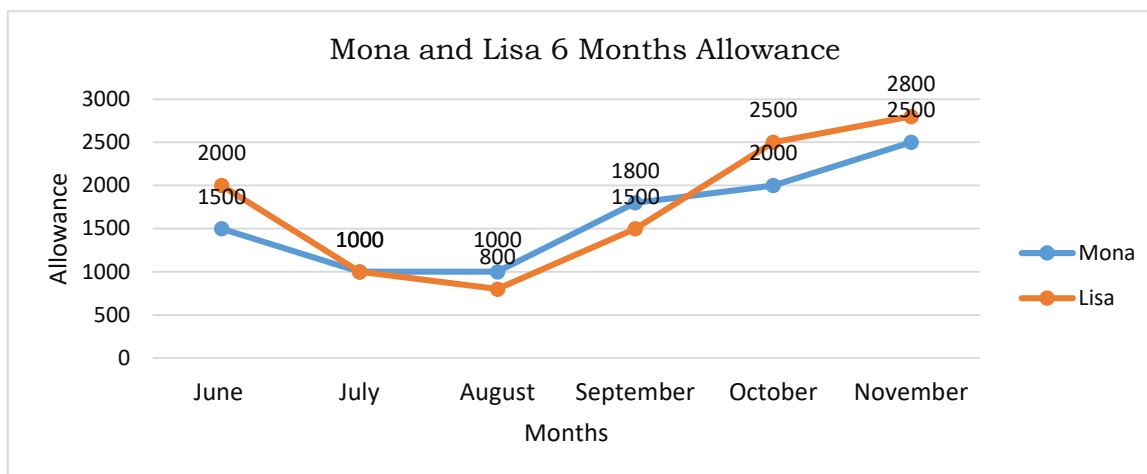
Directions: Study the line graph, then answer the questions below.

1. How many baskets did each one makes during the third session?
2. Who made more baskets in the fourth session?
3. What is the-average number of baskets the two boys made during the five-day session?
4. How many baskets did each one makes throughout the sessions?
5. Who made more basket between the two?



Assessment

Directions: Study carefully the graph presented below. Draw inferences based on the data presented in a line graph. Write your answer on a separate sheet of paper.



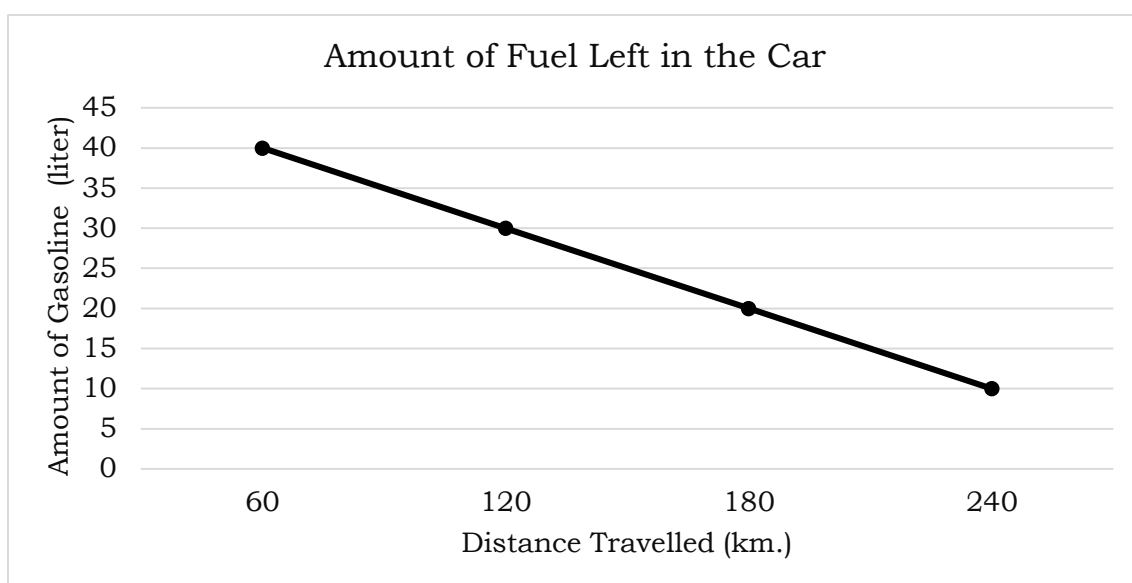
- How much did Mona received in the month of August?
A. Php2000 B. Php1 000 C. Php 800 D. Php 500
- What month did the two girls receive the highest amount of allowance?
A. June B. August C. September D. November
- What month has the lowest amount of allowance Liza?
A. June B. August C. September D. November
- Who received a higher allowance between the two for 6 months?
A. Mona B. Lisa C. both of them D. none of them
- Whose allowance amounted to P9800 for six (6) months?
A. Liza B. Liza and Mona C. Mona D. neither the two
- Who received a lesser allowance for 6 months?
A. Mona B. Lisa C. both of them D. none of them
- What is the difference of the biggest allowances of both girls?
A. P200 B. P100 C. P300 D.P500
- What month that the two girls recieved the biggest amount of allowance?
A. June B. August C. September D. November
- In what month did they both received the same amount of allowance?
A. June B. July C. August D. September
- Whose allowance amounted to P10600 for six(6) months?
A. Liza B. Liza and Mona C. Mona D. neither the two



Additional Activities

You made it! Finally, you're on the last activity. Answer it all correctly so you could climb at the top and get your trophy.

The line graph shows the amount of fuel left in the car and the distance the car travelled. Study the graph and answer the questions that follows.



1. How much gasoline does the car have at the start of the journey?
2. How many liters of gasoline was left at the end of the journey?
3. How much gasoline was used for:
 - a. first 60 km. travelled?
 - b. second 60 km. travelled?
 - c. third 60 km. travelled?
 - d. fourth 60 km. travelled? (delete)
4. Study the answers you obtained in no. 3. What can you say about the amount of gasoline used in relation to the distance travelled?



Answer Key

<p>Additional Activities</p> <ol style="list-style-type: none"> 1. 40 2. 10 3. a. 40 b. 30 c. 20 d. 10 4. An interval of 10 	<p>Assessment</p> <ol style="list-style-type: none"> 1. B 2. D 3. B 4. B 5. C 6. A 7. C 8. D 9. B 10. A 	<p>What I Can Do</p> <ol style="list-style-type: none"> 1. Nico – 68, Marco – 70 2. Marco 3. 72 4. Nico – 360, Marco – 360 5. Both of them
<p>What's I Have Learned</p> <ol style="list-style-type: none"> 1. Observe 2. Understand 3. Prediction 4. Data 	<p>What's More</p> <p>Activity 3: Double Your Infer!</p> <ol style="list-style-type: none"> 1. AP 2. Math and English 3. Filipino 4. The scores of the boys are just similar when getting its average. Its almost 25 5. English 	<p>What's More</p> <p>Activity 2: Use Me and Infer!</p> <ol style="list-style-type: none"> 1. 10 2. 20 3. 10 4. 30 5. 10 or 20 (answers may vary)
<p>What's More</p> <p>Activity 1: Draw and Infer!</p> <ol style="list-style-type: none"> 1. February 2. January 3. 12 cm. 4. Answer may vary 5. Answer may vary 	<p>What's In</p> <ol style="list-style-type: none"> 1. The total savings of Sally in 5 months 2. The amount of saving Sally deposits by months 3. Addition 4. $200+300+200+400+500=N$ 5. Php. 1,600 	<p>What I Know</p> <ol style="list-style-type: none"> 1. A 2. A 3. C 4. A 5. B 6. D 7. A 8. C 9. C 10. A

References

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

For inquiries or feedback, please write or call:

Department of Education - Bureau of Learning Resources (DepEd-BLR)

Ground Floor, Bonifacio Bldg., DepEd Complex
Meralco Avenue, Pasig City, Philippines 1600

Telefax: (632) 8634-1072; 8634-1054; 8631-4985

Email Address: blr.lrqaad@deped.gov.ph * blr.lrp@deped.gov.ph