

8

Lesson Exemplar for Mathematics

Quarter 4

Lesson

4

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Lesson Exemplar for Mathematics Grade 8

Quarter 4: Lesson 4 (Week 4)

SY 2025-2026

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Every care has been taken to ensure the accuracy of the information provided in this material. For inquiries or feedback, please write or call the Office of the Director of the Bureau of Learning Resources via telephone numbers (02) 8634-1072 and 8631-6922 or by email at blr.od@deped.gov.ph.

MATHEMATICS / QUARTER 4 / GRADE 8

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners should have knowledge and understanding of the interpretation and analysis of graphs from primary and secondary data.
B. Performance Standards	By the end of the lesson, the learners are able to able to interpret and analyze graphs from primary and secondary data. (DP)
C. Learning Competencies and Objectives	<p>Learning Competency By the end of the lesson, the learners are able to investigate, interpret, and analyze graphs from secondary data.</p> <p>Lesson Objectives</p> <ol style="list-style-type: none"> 1. Correctly illustrate a graphical representation of secondary data. 2. Correctly interpret a graphical representation of secondary data.
D. Content	Graphical Representation of Data Investigating, Interpreting, and Analyzing Graphs of Secondary Data
E. Integration	

II. LEARNING RESOURCES
<p>Lambojon, K., Chang, J., Saeed, A., Hayat, K., Li, P., Jiang, M., ... & Fang, Y. (2020). Prices, availability and affordability of medicines with value-added tax exemption: a cross-sectional survey in the Philippines. International journal of environmental research and public health, 17(14), 5242.</p> <p>Worksheet Library (2024 May 25). Bar Graphs. https://worksheets.clipart-library.com/worksheet/bar-graph-worksheets_8.html</p> <p>Philippine Statistics Authority (2024, May 27). Literacy Rate and Educational Attainment Among Persons Five Years Old and Over in the Philippines (2020 Census of Population and Housing). https://www.psa.gov.ph/statistics/population-and-housing/node/1684059980</p> <p>Teaching Experties (2024, May 27). 10 Primary and Secondary Sources Activities. https://www.teachingexpertise.com/language-arts/primary-and-secondary-sources-activity/</p> <p>Math Goodies (2024, May 28). Bar Graphs Lesson. https://www.mathgoodies.com/lessons/graphs/bar_graph</p>

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS										
A. Activating Prior Knowledge	<div>DAY 1</div> <div>1. Short Review</div> <div>Collect My Fav Sub!</div> <div>This activity can be done in groups of 5. Let the learners ask their classmates about their favorite subject and record the data they collected. Instruct then to make a bar graph by shading the bar of each unit based on the data collected. After the learners ask their groupmates ask them the questions below.</div> <div><div>Grade - 8 Favorite Subject</div><table><tr><th>Subject</th><th>Number of Learners</th></tr><tr><td>English</td><td></td></tr><tr><td>Math</td><td></td></tr><tr><td>Science</td><td></td></tr><tr><td>Filipino</td><td></td></tr></table><div><div><div>Number of Learners</div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>English</div><div>Math</div><div>Science</div><div>Filipino</div></div></div></div></div>	Subject	Number of Learners	English		Math		Science		Filipino		<div>DAY 1 Time Frame</div> <div>15 minutes - Review Activity</div> <div>15 minutes - discussion</div> <div>15 minutes – lesson activity</div> <div>10 minutes – feedback and Q&A</div> <div>Note: Time frames are just suggestions it is up to the teacher to allocate the time for each section of the lesson.</div> <div>Introduce the lesson by giving the learner a short review on the first day. Use one of the worked examples from the previous lesson.</div> <div>After the discussion, the teacher will use the “Collect My Fav Sub” activity. Guide the learners in this activity by giving an example</div> <div>This activity may also be used as a group task to promote a collaborative approach in the class.</div> <div>After the activity, facilitate the discussion of the answers to the questions of the learners.</div> <div>Before proceeding to lesson proper, ask some questions that will link what was discussed to the main lesson.</div>
	Subject	Number of Learners										
	English											
	Math											
	Science											
Filipino												

B. Establishing Lesson Purpose	<p>1. Lesson Purpose Essential Question: What are the advantages and disadvantages of using secondary data rather than primary data?</p> <p>2. Unlocking Content Vocabulary Secondary Data These are data that is not directly collected by the researcher but by someone else. These can be gathered by reviewing the work of other researchers, examining studies from research organizations, or reading articles from journals and newspapers, which are sources of secondhand information that have been compiled by others for specific purposes.</p> <p>Let's Share Ideas!</p> <p>Search image of primary and secondary sources. Sample figure: https://www.teachingexpertise.com/language-arts/primary-and-secondary-sources-activity/</p>	<p>For the lesson purpose, you will introduce the lesson and discuss its importance using essential/guide question/s.</p> <p>Note: Essential question are not necessary to be answered in this part. These questions will be answered in part of “learners’ takeaways.”</p> <p>Guide the learners to unlock content vocabulary using the “Let’s Share Ideas!” activity.</p> <p>Let the learners share their ideas based on what they saw in the picture.</p>
C. Developing and Deepening Understanding	<p>SUB-TOPIC 1: GRAPHICAL REPRESENTATION OF SECONDARY DATA</p> <p>1. Explicitation Share Your Idea! Give this activity to the learners.</p>	<p>Process and validate the answers of learners from “Let’s Share Ideas!” then continue with the lesson proper.</p> <p>For the explication, present this activity to the learners to gather some information they got from the “Collect My Fav Sub” activity.</p> <p>Write all responses and collect all ideas that would hit the sub-topic.</p> <p>Process the responses of the learners in preparation for day 2.</p>



Say something about your observations from the data presented above.

DAY 2

DAY 2 Time Frame

5 – minutes review of the 1st day lesson

25 – minutes discussion

35 – minutes lesson activity and giving feedback

Proceed to the lesson proper and use the worked examples for elaboration on the lesson topic and for a better understanding of the concept.

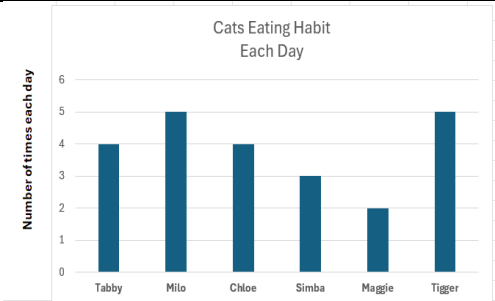
The teacher may also add more activities for further elaboration of the lesson. (If necessary)

Solution:

2. Worked Example

Here's an example of secondary data from a magazine on the daily eating habits of a cat owned by a pet owner. Construct a bar graph using the data.

Cats Eating Habits		
Cats	Tally Marks	Frequency
Tabby	IIII	4
Milo	IIII	5
Chloe	IIII	4
Simba	III	3
Maggie	II	2
Tigger	IIII	5

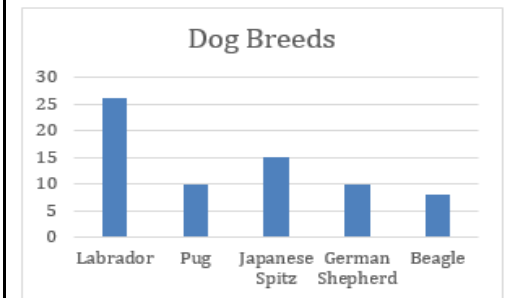


3. Lesson Activity

The table below shows the distribution of dog breeds in one of the cities in the Philippines. Represent this data graphically.

Breed	Labrador	Pug	Japanese Spitz	German Shepherd	Beagle
Frequency	26	10	15	10	8

Solution:



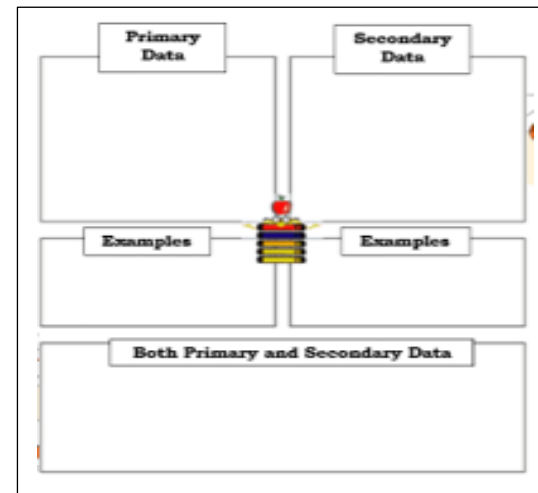
DAY 3

SUB-TOPIC 2: INTERPRETATION AND ANALYSIS OF SECONDARY DATA

1. Explication

Compare Me!

Give this activity to learners. With the help of the previous lesson, let the learner compare the two sources of data using the graphic organizer below.



DAY 3 Time Frame

5-minute short review
20 – minutes lesson discussion
25 – minutes lesson activity and giving feedback
5 – minutes wrap up.

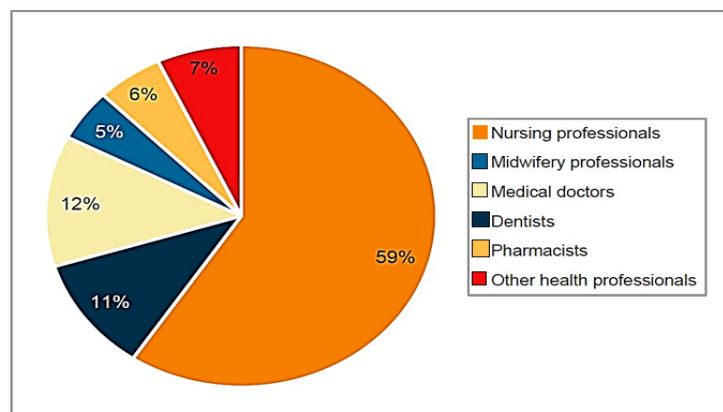
Steps in Interpreting Secondary Graphical Data:

1. Identify the type of graph
2. Read the Label and Legends
3. Analyze Data Points
4. Identify Trends and Patterns
5. Evaluate the Data Presentation
6. Draw Conclusions

2. Worked Example

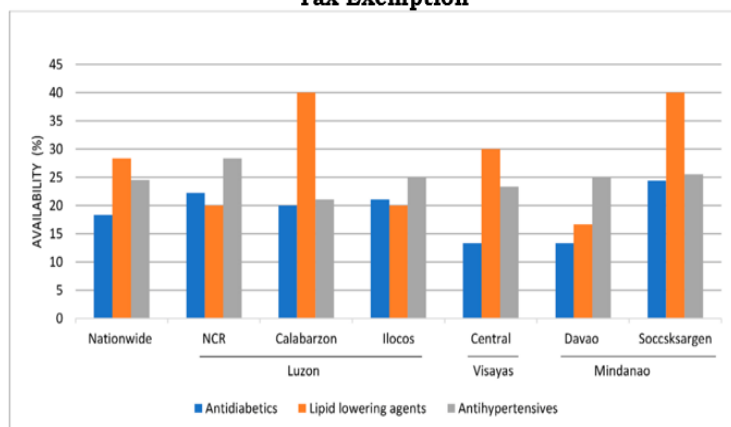
- The pie chart below shows the results of the 2018 National Migration Survey of Health Professionals in the Philippines.

Figure 1. Percent distribution of health professionals by occupation, Philippines: 2018 NMS



- What occupation has the highest percentage of migration in 2018?
 - What is the percentage of the lowest migrated health professionals?
 - Write a short interpretation based on the graphical representation above.
- The bar graph below shows the availability of medicines with value-added tax exemption nationwide and regions in the Philippines.

Availability of Medicines with Value-Added Tax Exemption



Answer:

- The highest percentage of health professionals who migrated in 2018 is nursing professionals with 59%.
- The percentage of the lowest migrated health professionals is 5% which is midwifery professionals.
- In 2018, the migration of health professionals from the Philippines is shown in the pie chart above. The data reflects a healthcare workforce dominated by nursing professionals, who make the highest contributions, followed by medical doctors and dentists. It also highlights the global demand for these health workers and their pursuit of better opportunities outside the Philippines.

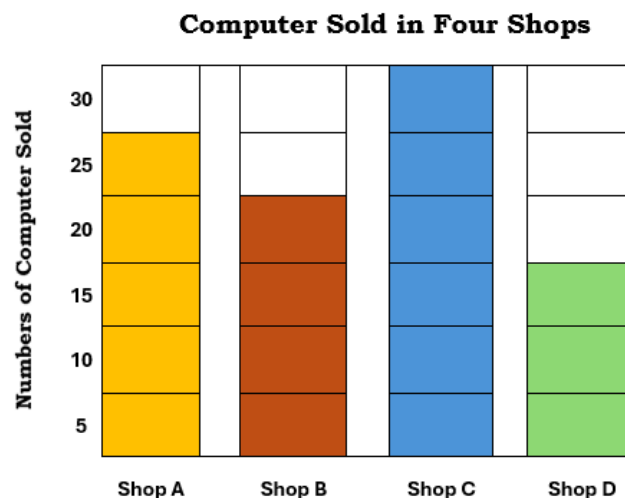
Answer:

- The medicine with the highest availability is lipid lowering agent.
- NCR has the highest availability of antihypertensives.
- The bar graph above reflects the availability of medicine with value-added tax exemption in a particular region in the Philippines.

- Based on the reflected data; what medicine has the highest availability?
- What region reflected the highest availability of antihypertensive?
- Write a short overall interpretation of the data.

3. Lesson Activity

Read and analyze the bar graph below. And answer the following questions.



- How many computers were sold in shop B and C?
- Which shops together sold exactly 40 computers?
- Which shop sold the highest number of computers?
- Write an overall interpretation of the data presented in the bar graph.

Nationwide, the data shows that lipid-lowering agents have the highest availability at approximately 28%, followed by antihypertensives at 25% and antidiabetics at 17%.

For sub-topic 2, use the of lesson activities from sub-topic 1 that will serve as short review for this lesson.

Assess the learners' understanding of secondary data and its graphical representations and interpretations. Vary the delivery of instruction accordingly.

D. Making Generalizations

DAY 4

1. Learners' Takeaways

- How do the branches of Statistics differ from each other?
- What are the advantages and disadvantages of using secondary data?














2. Reflection on Learning

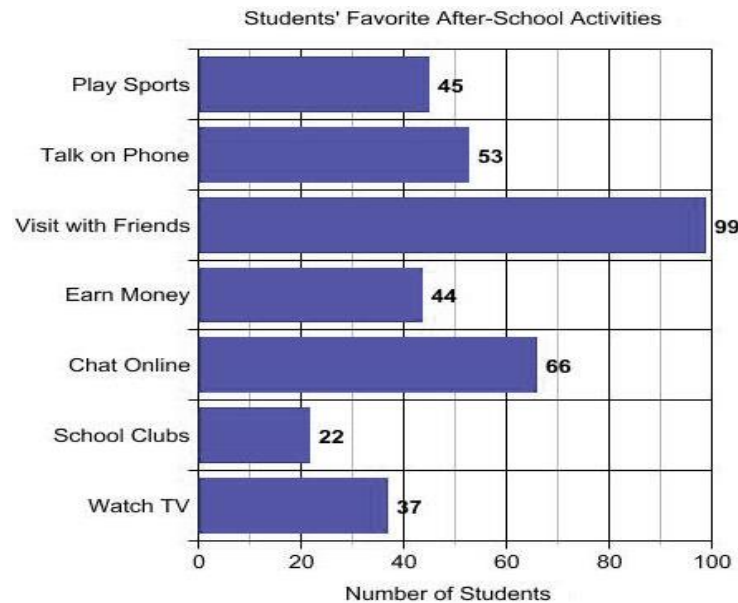
Use the table for the reflection of learners.

DAY 4 Time Frame

5- minutes Learners' Takeaways
 10 – minutes Reflection
 25 – minutes formative assessment.
 15 – minutes checking of answers and rationalization of answers.

	<table><tr><td>What I know</td></tr><tr><td>+</td></tr><tr><td>What I'm learning</td></tr><tr><td>=</td></tr><tr><td>New understanding</td></tr></table>	What I know	+	What I'm learning	=	New understanding	<p>To identify the learners' takeaways, let them answer essential questions and make them provide real-life examples. It could be a group task or an individual task.</p> <p>Other option for reflection is to tasked them to write a short essay.</p>
What I know							
+							
What I'm learning							
=							
New understanding							

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION								NOTES TO TEACHERS																										
A. Evaluating Learning	<div>1. Formative Assessment</div> <div>1. The table below shows the mango sales from June to December. Represent the data graphically and write a short interpretation of the graph.</div> <div></div> <table><tr><th>Month</th><th>Jun</th><th>Jul</th><th>Aug</th><th>Sept</th><th>Oct</th><th>Nov</th><th>Dec</th></tr><tr><th>Sales (kg)</th><td>11</td><td>12</td><td>15</td><td>16</td><td>10</td><td>21</td><td>10</td></tr></table> <div>2. A store of fruit juice recorded the number of glasses sold in a day. Represent the data graphically and write a short interpretation out of a graphical presentation.</div> <table><tr><th>Fruit Juice</th><th>Mango</th><th>Orange</th><th>Apple</th><th>Grape</th></tr><tr><th>Number of Glasses</th><td><div>20</div><div></div><div>Mango</div></td><td><div>15</div><div></div><div>Orange</div></td><td><div>13</div><div></div><div>Apple</div></td><td><div>18</div><div></div><div>Grape</div></td></tr></table> <div>3. The graphical representation below reflects the data of students' activities after school. Answer the following questions and write a short overall interpretation.</div>							Month	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Sales (kg)	11	12	15	16	10	21	10	Fruit Juice	Mango	Orange	Apple	Grape	Number of Glasses	<div>20</div> <div></div> <div>Mango</div>	<div>15</div> <div></div> <div>Orange</div>	<div>13</div> <div></div> <div>Apple</div>	<div>18</div> <div></div> <div>Grape</div>	<div>Formative Assessment Answers:</div> <div>1. answers may vary</div> <div>2. answers may vary</div> <div>3. <div>a. Students' Favorite After-School Activities</div><div>b. 7</div><div>c. Visit with Friends</div><div>d. School Clubs</div><div>e. Play Sports and Earn Money</div><div>f. answers may vary</div></div>
	Month	Jun	Jul	Aug	Sept	Oct	Nov	Dec																										
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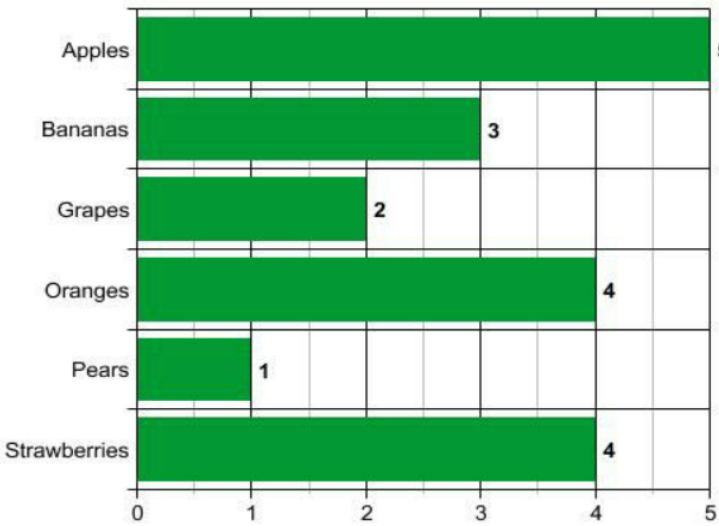
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<http://www.mathgoodies.com>

- What is the title of this bar graph?
- How many categories are in the graph?
- Which after-school activity do students like most?
- Which after-school activity do students like least?
- Which two activities are liked almost equally?
- Write an overall interpretation of the graph.

2. Homework (Optional)

- Students in a class voted on their favorite fruit. Each student voted once. The bar graph below summarizes the data collected from the class vote.

The homework will not be graded but will be used to inform the teacher on how to move forward with the lesson. For example, the learners are ready to move to the new lesson, give more examples on concepts about the lesson that learners are having difficulty with.

	<p style="text-align: center;">Students Vote for Favorite Fruit</p>  <p style="text-align: center;">Number of Students</p> <p style="text-align: center;">Copyright © 2007 Mrs. Glosser's Math Goodies, Inc. All Rights Reserved. http://www.mathgoodies.com</p> <p>a. How many categories are in the graph? b. Which fruit had the most votes? c. Which fruit had the least votes? d. List the categories in the graph from least to greatest. e. Write a short overall interpretation of the graph.</p>	<p>Answer Key:</p> <p>a. 6 b. Apples c. Pears d. Pears, Grapes, Bananas, Oranges/Strawberries, Apples e. Answers may vary</p>												
<p>B. Teacher's Remarks</p>	<table border="1"> <tr> <td> <p><i>Note observations on any of the following areas:</i></p> </td><td> <p>Effective Practices</p> </td><td> <p>Problems Encountered</p> </td></tr> <tr> <td> <p><i>strategies explored</i></p> </td><td></td><td></td></tr> <tr> <td> <p><i>materials used</i></p> </td><td></td><td></td></tr> <tr> <td> <p><i>learner engagement/interaction</i></p> </td><td></td><td></td></tr> </table>	<p><i>Note observations on any of the following areas:</i></p>	<p>Effective Practices</p>	<p>Problems Encountered</p>	<p><i>strategies explored</i></p>			<p><i>materials used</i></p>			<p><i>learner engagement/interaction</i></p>			<p>The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement, and other related stuff.</p>
<p><i>Note observations on any of the following areas:</i></p>	<p>Effective Practices</p>	<p>Problems Encountered</p>												
<p><i>strategies explored</i></p>														
<p><i>materials used</i></p>														
<p><i>learner engagement/interaction</i></p>														

	others			Teachers may also suggest ways to improve the different activities explored/lesson exemplar.
C. Teacher's Reflection	<p><i>Reflection guide or prompt can be on:</i></p> <ul style="list-style-type: none"> • <u>principles behind the teaching</u> <i>What principles and beliefs informed my lesson?</i> <i>Why did I teach the lesson the way I did?</i> • <u>students</u> <i>What roles did my students play in my lesson?</i> <i>What did my students learn? How did they learn?</i> • <u>ways forward</u> <i>What could I have done differently?</i> <i>What can I explore in the next lesson?</i> 			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.