

THIRD TERM
WEEKLY LESSON NOTES
WEEK 2

Week Ending:	DAY:	Subject: Mathematics	
Duration: 60MINS		Strand: Handling Data	
Class: B9	Class Size:	Sub Strand: Data	
Content Standard: B9.4.1.1 Select, justify, and use appropriate methods of collecting data (grouped/ungrouped), use the data to construct and interpret frequency tables and histogram and use it to determine the mode and to solve and/or pose problems.		Indicator: B9.4.1.1.2 Organize data (grouped/ungrouped) present it in frequency tables, line graphs, pie graphs, bar graphs and/or pictographs and analyze it to solve and/or pose problems	Lesson: 1 of 1
Performance Indicator: Learners can construct stem and leaf plots, pie charts, bar graphs, and pictographs for data sets and analyze data represented in different formats and solve/pose problems based on the information.		Core Competencies: Communication and Collaboration (CC) Critical Thinking and Problem solving	
References: Mathematics Curriculum Pg.			
New words:			
Phase/Duration	Learners Activities	Resources	
PHASE 1: STARTER	<p>Show learners pie charts and bar graphs representing data on topics relevant to them (e.g., favorite movie genres, preferred music styles).</p> <p>Ask them to identify what information these graphs convey and how they differ from frequency tables. Introduce the concept of data visualization through various graphical methods.</p>		
PHASE 2: NEW LEARNING	<p>Introduce stem and leaf plots as an alternative way to organize data, especially for ungrouped numerical data.</p> <p>Explain how stems represent the leftmost digits and leaves represent the rightmost digits of the data points. Show an example of a stem and leaf plot with labeled stems and leaves.</p> <p>Distribute a sample ungrouped data set (prepared beforehand, see example below). Test Scores: 85, 78, 92, 88, 75, 82, 95, 80</p> <p>Guide learners through creating a stem and leaf plot for the data set.</p> <p>Explain how to arrange the data points by their stems and leaves, providing a clear visual representation of the distribution of scores.</p>	<p>Markers or pens Sample data sets</p>	

Introduce pie charts as a way to represent categorical data where slices of the pie represent the proportion of each category. Show an example of a pie chart with labeled slices and corresponding data percentages.

Introduce bar graphs as a way to visually compare different categories or values.

Explain how bars represent the frequency or quantity for each category/value.

Show an example of a bar graph with labeled categories/values on the x-axis and frequency/quantity on the y-axis.

Introduce pictographs as a way to represent data using pictures. Explain that each picture symbol represents a certain quantity of data points.

Show an example of a pictograph with a legend explaining the symbol and its corresponding value.

Provide learners with a new data set; Favorite Movie Genres: Action (8 learners), Comedy (10 learners), Drama (5 learners), Animation (2 learners)

Have learners represent the data set in;

- Create a stem and leaf plot (if ungrouped data).
- Construct a pie chart showing the proportion of learners who prefer each genre.
- Design a bar graph where each bar represents the number of learners in each genre.

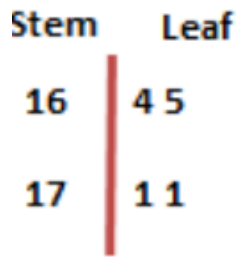
Once learners have created their various data representations, have them analyze the information presented in each format.

Ask questions that encourage them to compare and contrast the different visualizations (e.g., which genre is most popular according to the pie chart and bar graph?).

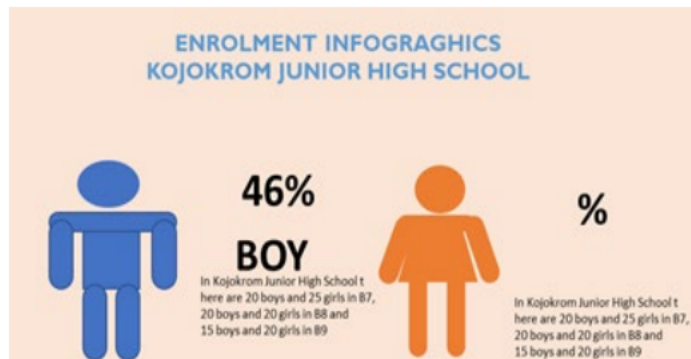
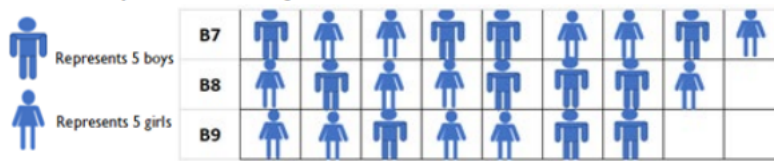
Assessment

- I. Complete the stem and leaf plots below to display the raw data. Use the plot to solve the following problems.
 - a. Find the range of the lifespan of bulbs
 - b. What is the mode lifespan?
 - c. What is the median lifespan?

d. What other problems can you pose?



2. The pictograph below describes the number of boys and girls in each class in Kojokrom Junior High School.



What is the percentage of boys and of girls in the school?
ii. Use your answers in (i) to represent the data by copying and completing the following infographic.

**PHASE 3:
REFLECTION**

Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.

Take feedback from learners and summarize the lesson.

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Content Standard: B9.4.1.1 Select, justify, and use appropriate methods of collecting data (grouped/ungrouped), use the data to construct and interpret frequency tables and histogram and use it to determine the mode and to solve and/or pose problems.		Indicator: B9.4.1.1.3 Use a histogram to determine the mode of a given data to solve and/or pose real life cases	Lesson: 1 of 1
Performance Indicator: Learners can construct histograms for data sets and identify the mode (most frequent value) of a data set using a histogram.		Core Competencies: Communication and Collaboration (CC) Critical Thinking and Problem solving	
References: Mathematics Curriculum Pg.			
New words:			
Phase/Duration	Learners Activities	Resources	
PHASE 1: STARTER	<p>Distribute data sets (prepared beforehand) showing the number of pencils learners have in their pencil cases (e.g., 5 learners with 3 pencils, 8 learners with 4 pencils).</p> <p>Have learners create a frequency table showing how many learners have each number of pencils.</p> <p>Ask them what the most common number of pencils learners have. Introduce the concept of histograms as a visual tool to identify this information.</p>		
PHASE 2: NEW LEARNING	<p>Introduce histograms as a graphical representation of data distribution.</p> <p>Explain that data is divided into intervals (bins) along the x-axis, and the y-axis represents the frequency of data points within each interval.</p> <p>Demonstrate how to create a histogram using a frequency table:</p> <ul style="list-style-type: none"> • Determine the range of the data (highest value - lowest value). • Choose an appropriate number of intervals (bins) to represent the data effectively (usually 5-10 intervals). • Calculate the width of each interval by dividing the data range by the number of intervals. 	<p>Markers or pens Sample data sets</p>	

- Label the x-axis with the interval values and the y-axis with frequency.
- Draw rectangles for each interval, with the height of each rectangle representing the frequency of data points within that interval. (Use different colors for the rectangles)

Distribute a new data set; Plant heights (cm): 25, 32, 40, 35, 28, 38, 45, 30

Guide learners through creating a histogram for the data set. They can estimate the width of each interval based on the data range and the desired number of intervals (e.g., 5 intervals).

Explain that the mode of a data set is the most frequent value.

Ask learners to analyze their histograms and identify the interval with the highest rectangle. The value in the center of that interval represents the mode of the data set.

Pose questions for learners to analyze their data and histograms (e.g., what is the range of plant heights, what is the most common plant height range?).

Encourage them to discuss the distribution of data points based on the histogram's shape.

Show learners examples of real-life applications of histograms (e.g., distribution of test scores in a class, age ranges of movie viewers).

Discuss how histograms help us visualize trends and patterns in data sets.

Challenge learners to create their own word problems based on the data they analyzed (e.g., If 2 more plants fall within the 33-37 cm height range, how many plants would be in that category?).

Assessment

E.g. 1- The waiting times, x minutes, for 60 patients at a certain clinic are as follows

	<p style="text-align: center;"> 25 12 53 8 26 5 19 73 67 18 87 42 6 21 14 19 12 15 13 36 36 16 72 36 13 37 11 51 39 32 30 47 6 22 68 25 98 23 45 22 7 9 26 35 27 48 58 56 29 20 32 62 80 41 58 17 54 15 14 74 </p> <p>i. Construct a frequency table using class intervals 0 – 10.5; 10.5 – 20.5; 20.5– 30.5, and so on.</p> <p>ii. Construct a frequency table using class intervals $0 < x < 10$; $10 < x < 20$; $20 < x < 30$, and so</p> <p>iii. Draw a histogram and find the modal class</p>	
<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	