

DAILY LESSON LOG OF M10SP-IVh-j-1 (Week Nine-Day Three)

School		Grade Level	Grade 10
Teacher		Learning Area	Mathematics
Teaching Date and Time		Quarter	Fourth
I. OBJECTIVES	<i>Objectives must be met over the week and connected to the curriculum standards. To meet the objectives, necessary procedures must be followed and if needed, additional lessons, exercises and remedial activities may be done for developing content knowledge and competencies. These are assessed using Formative Assessment Strategies. Valuing objectives support the learning of content and competencies and enable children to find significance and joy in learning the lessons. Weekly objectives shall be derived from the curriculum guides.</i>		
A. Content Standards	The learner demonstrates understanding of key concepts of measures of position.		
B. Performance Standards	The learner is able to conduct systematically a mini-research applying the different statistical methods.		
C. Learning Competencies/ Objectives	Learning Competency: Uses appropriate measures of position and other statistical methods in analysing and interpreting research data.(M10SP-IVh-j-1) Learning Objectives: 1. Define research methodology; 2. Identify the target population and the sample; and 3. Demonstrate appreciation in determining the sample size of a study.		
II. CONTENT	Statistics and Probability (research methodology)		
III. LEARNING RESOURCES	teacher's guide, learner's module,		
A. References			
1. Teacher's Guide			
2. Learner's Materials			
3. Textbook pages			
4. Additional Materials from Learning Resource (LR) portal			
B. Other Learning Resources			
IV. PROCEDURES	<i>These steps should be done across the week. Spread out the activities appropriately so that pupils/students will learn well. Always be guided by demonstration of learning by the pupils/ students which you can infer from formative assessment activities. Sustain learning systematically by providing pupils/students with multiple ways to learn new things, practice the learning, question their learning processes, and draw conclusions about what they learned in relation to their life experiences and previous knowledge. Indicate the time allotment for each step.</i>		
A. Review previous lesson or presenting the new lesson	The Teacher asks: What is Research Methodology ? Research Methodology refers to your detailed description of procedure, instrument and participants. This includes your sampling procedure, that is, how you selected the participants in your study.		

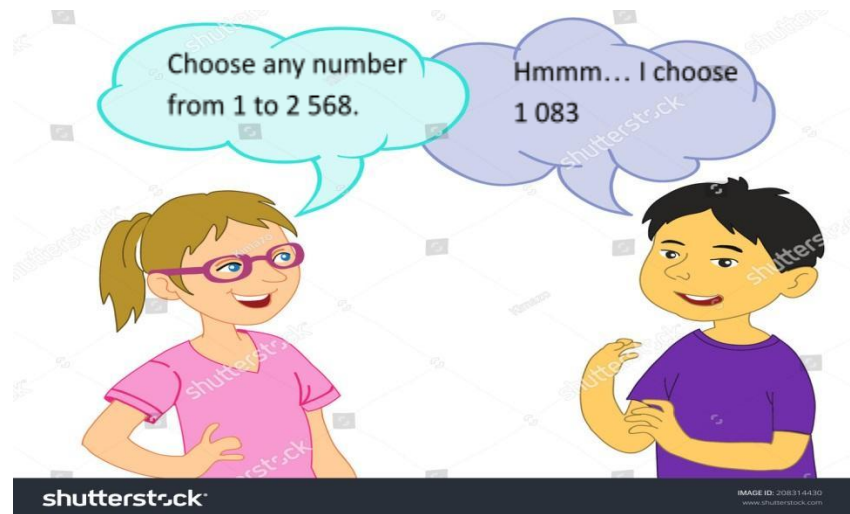
	If the baker at the right tasted all the 500 cupcakes he baked, he would not have any more cupcakes to sell This is why he needs to know the various sampling methods. As a researcher, you do not have all the time, money, and energy to exhaustively survey your target population.
B. Establishing a purpose for the lesson	The teacher lets the students realize that understanding Research Methodology is an important skill needed to understand the concepts <i>in analysing and interpreting research data</i> .
C. Presenting examples/ instances of the new lesson	The Teacher presents: The Target population is the entire particular group of people a researcher identifies to study and about which to draw conclusions. The sample refers to that part of the population that is included in the study and where the information in research comes from. Sampling is the process of selecting the participants from the target population to be included in the study.
D. Discussing new concepts and practicing new skills #1	The teachers lets the students answer this: Identify the target population and the sample: A survey on television viewers was done to determine the rankings of television viewers in 10 selected malls were interviewed. Answer: Target population: television viewers in the Philippines Sample : 200 television viewers in 10 selected malls The sample size in this case in $n = 200$.
E. Discussing new concepts and practicing new skills #2	The Teacher discusses the concept below: A sampling method is classified as either probability or nonprobability sampling. In a probability sampling method, each members of the population has a known nonzero and equal chance of being included in the sample. In a nonprobability sampling method, members are selected based on reasons that are not in random manners. Probability sampling methods ensure that the sample is representative of the population and that the statistical conclusion are valid. The following are types of probability sampling methods. Let N be population size and n be the sample size. Simple Random Sampling-This is also known as the fish-bowl method or the lottery method. Each members in the population is assigned a number from 1 to N. Each number is written on a piece of paper (or a ballot) , which is then placed and thoroughly mixed in a bowl or a convenient container. The researcher then draws out n number of these ballots. The numbers are then leted and their corresponding participants are identified. 

2. **Systematic Random Sampling**- This is the method of selecting every kth element in the population list. The value of k is determined by the formula:

$$K = \frac{N}{n}$$

The first element in the list is randomly selected. Thereafter, every kth element is selected until the sample is completed.

Example: Use systematic sampling method to choose 200 participants from a population of 2 568.



The researcher needs 200 participants as sample, so

$$K = \frac{2\,568}{200} = 12.83 = 13$$

So, let's say those who were assigned in 13, 26, ..., 1 083, 1096, ..., 2565, ... and so on until 200th participants.

**F. Developing mastery
(leads to formative
assessment 3)**

The Teacher continues...

3. **Stratified Sampling**- The population is divided into groups based on certain characteristics. The groups are called **strata**. The sample size of each group is proportion to the size of each group in the population.
Complete the table by giving the appropriate sample size of each stratum.

Strata	Population	Sample
Freshmen	540	

Sophomores	450	
Juniors	430	
Seniors	380	
Total	1 800	150

Solution: For Freshmen:

Strata	Population	Percent	Sample
Freshmen	540	30	45
Sophomores	450	25	38
Juniors	430	23.89	36
Seniors	380	21.11	32
Total	1 800	100	150

Freshmen:

$$n = \frac{540}{1800} \times 150$$

$$n = 0.3 \times 150$$

$$n = 45$$

Solve for Sophomore, Juniors and Seniors.

4. **Cluster Sampling** –The total population is grouped based on some “natural” means. For instance, schools are grouped according to their geographical locations. Then randomly sampling is applied to choose which cluster is treated as the sampling unit such that analysis is done on population of clusters.

Example: Use cluster sampling to choose 50 public schools from all the public schools in the country.

Answer: a natural way to cluster the population is by regions. The research may randomly select 10 regions from the 17 regions in the Philippines. Then five public schools are randomly selected in each region.

5. **Multistage Sampling-** The sample is selected by combining at least two different sampling methods.

Example: Suppose you want to conduct a survey about the student’ perceptions of the cleanliness of the comfort rooms in your school. Use multistage sampling to select 500 respondents.

Answer: First consider the grade levels as clusters then randomly select 5 grade levels. Then from each of the five selected grade levels, randomly

	select 4 sections or classes. From each section, randomly select 25 students to participate in the survey.
G. Finding practical applications of concepts and skills in daily living	The slovin's formula is used to determine a reliable sample size. $n = \frac{N}{1 + Ne^2} \quad \text{where } n = \text{sample space}$ N = population size E = error tolerance or margin of error Example: In social Science Research, the error tolerance is usually set at 5% or 0.05. Find the sample size n for a research that has 2 500 population size at 5% error tolerance. Answer: $n = \frac{N}{1 + Ne^2} = \frac{2500}{1 + (2500)(0.05)^2} = \frac{2500}{1 + 6.25} = \frac{2500}{7.25} = 344.83 = 345$
H. Making generalizations and abstractions about the lesson	A sampling method is classified as either probability or nonprobability sampling. In a probability sampling method, each members of the population has a known nonzero and equal chance of being included in the sample. In a nonprobability sampling method, members are selected based on reasons that are not in random manners. The slovin's formula is used to determine a reliable sample size. $n = \frac{N}{1 + Ne^2} \quad \text{where } n = \text{sample space}$ N = population size E = error tolerance or margin of error
I. Evaluating Learning	The Teacher allows the students to answer in pair or in triad. Do what is asked: - Find the sample size n for a research that has 3000 population size at 5% error tolerance. Answer: $n = \frac{N}{1 + Ne^2} = \frac{3000}{1 + (2500)(0.05)^2} = \frac{3000}{1 + 7.5} = \frac{3000}{8.5} = 352.94 = 353$ - Suppose you want to conduct a survey about the student' perceptions of the cleanliness of the classrooms in your school. Use multistage sampling to select 100 respondents. Answer: Answers may vary depending on what sampling method they will use.

J. Additional activities or remediation	
V. REMARKS	
VI. REFLECTION	<i>Reflect on your teaching and assess yourself as a teacher. Think about your students' progress. What works? What else needs to be done to help the pupils/students learn? Identify what help your instructional supervisors can provide for you so when you meet them, you can ask them relevant questions.</i>
A. No. of learners who earned 80% of the evaluation	
B. No. of learners who require additional activities for remediation who scored below 80%	
C. Did the remedial lesson work? No. of learners who have caught up with the lesson.	
D. No. of learners who continue to require remediation	
E. Which of my teaching strategies worked well? Why did these work?	
F. What difficulties did I encounter which my principal or supervisor can help me solve?	
G. What innovation or localized materials did I use/ discover which I wish to share with other teachers	

Prepared by:

RHEA N. PEDROZA

Math Teacher, Tabok NHS