

**DAILY LESSON LOG OF MA10SP -IIIC-2 (Week Three- Day Two)**

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| School                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Grade Level   | Grade 10    |
| Teacher                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Learning Area | Mathematics |
| Teaching Date and Time                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Quarter       |             |
| I. OBJECTIVES                                              | 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.                                                                                                                                                                                                                                               |               |             |
| A. Content Standards                                       | The learner demonstrates understanding of key concepts of combinatorics and probability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |             |
| B. Performance Standards                                   | The learner is able to use precise counting technique and probability in formulating conclusion and making decisions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |             |
| C. Learning Competencies/ Objectives                       | Learning Competency: Differentiates permutation from combination of n objects taken r at a time ( <b>MA10SP -IIIC-2</b> )<br>Learning Objectives:<br>1. Compare the number of possible arrangements of permutation and combination of n objects taken r at a time;<br>2. Differentiate permutation from combination of n objects taken r at a time; and<br>3. Demonstrate appreciation in differentiating permutation from combination of n objects taken r at a time.                                                                                                                                                                                                                                                                                                                                 |               |             |
| II. CONTENT                                                | Combination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |             |
| III. LEARNING RESOURCES                                    | Teacher’s Guide, Learner’s Module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |             |
| A. References                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |             |
| 1. Teacher’s Guide pages                                   | Pages 259-265                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |             |
| 2. Learner’s Materials pages                               | Pages 301-309                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |             |
| 3. Textbook pages                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |             |
| 4. Additional Materials from Learning Resource (LR) portal |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |             |
| B. Other Learning Resources                                | Grade 10 Mathematics , Nivera, G.C.; Lapinid,M.R. ;page 302-303                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |             |
| 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 lets the students analyze the given two situations and let them answer the questions that follow.<br><br>1. A group has to select a moderator and a secretary from 5 members in the group .<br>2. A group has to select two leaders from the 5 members in the group .<br>a. Which situation illustrates permutation? Why ?<br>b. Which situation illustrates combination ? Why?<br><b>Possible answer:</b><br><b>a. Situation 1 illustrates permutation because the moderator and secretary are considered different and their order is important.</b><br><b>b. Situation number 2 illustrates combination because the problem looks at sets of group of officers and is not particular as to who is the moderator and who is the secretary. In this situation order is not important.</b> |               |             |
| B. Establishing a purpose for the lesson                   | The teacher says that, “ Today’s lesson we will find the difference between permutation and combination of n objects taken r at a time .”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |             |
| C. Presenting examples/ instances of the new lesson        | The teacher lets the students do the following:<br>1. In situation 1 and situation 2, let the 5 group members be Alex, Barbie, Cris , Dennis and Eric.<br>2. List all the possible arrangements if there are 5 members and 2 should be selected of the situation 1 and situation 2.<br>3. How many possible arrangements are there in situation 1? How about in situation 2?                                                                                                                                                                                                                                                                                                                                                                                                                           |               |             |

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|                                                         | <p>Answer:<br/>Note: (The letters in the list below are the initials of the 5 members.)</p> <p>Situation 1. AB, AC,AD, AE      BA,BC,BD,BE      CA,CB,CD,CE      DA,DB,DC,DE<br/>EA,EB,EC,ED<br/>So, there are 20 possible arrangements.</p> <p>Situation 2. AB,AC,AD,AE,BC,BD,BE,CD,CE,DE.<br/>So , there are only 10 possible arrangements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| D. Discussing new concepts and practicing new skills #1 | <p>The teacher discusses with the students the process of answering situations 1 and 2.</p> <p>Let the 5 group members be Alex, Barbie, Cris , Dennis and Eric.</p> <p>1. If there are 5 members in the group and two positions are to be selected and the order is important, then it can be stated as n=5 taken r= 2 at a time. The list of possible arrangements when order is important are :</p> <p>AB, AC,AD, AE      BA,BC,BD,BE      CA,CB,CD,CE      DA,DB,DC,DE<br/>EA,EB,EC,ED<br/>So, there are 20 possible arrangements.</p> <p>2. Since the problem looks at sets of group of officers and is not particular as to who is the moderator and secretary.</p> <p>From the possible arrangements in 1 , let us remove those with the same people.</p> <p>AB and BA are considered the same set of objects as A and B,AC and CA are considered the same set of objects as A and C, AD and DA are considered the same set of objects as A and D, AE and EA are considered the same set of objects as A and E, CD and DC are considered the same set of objects as C and D, CE and EC are considered the same set of objects as E and C, DE and ED are considered the same set of objects as D and E.</p> <p>AB, AC, AD, AE    <del>BA</del> , BC, BD, BE    <del>CA</del>, <del>CB</del>, CD, CE    <del>DA</del>, <del>DB</del>, <del>DC</del>, DE    <del>EA</del>, <del>EB</del>, <del>EC</del>, <del>ED</del></p> <p>The possible arrangements when order is not important are:<br/>AB,AC,AD,AE,BC,BD,BE,CD,CE,DE.<br/>So , there are only 10 possible arrangements.</p> <p>Compare the number of permutation and the number of combination.<br/>Answer?<br/>The number of permutation is greater than the number of combination.</p> |
| E. Discussing new concepts and practicing new skills #2 | <p>The teacher lets the students work in pair, let the students answer the given exercise</p> <p>Consider set A with three elements, {<i>bibingka</i>, <i>tagaktak</i> , <i>dried mango</i>}</p> <p>a. List all the permutations of these elements taken two at a time. How many possible arrangement are there?</p> <p>b. List all the combinations of these elements taken two at a time. How many possible arrangement are there? Justify your answer.</p> <p>c. Compare the number of permutation and the number of combination.</p> <p>Answer:<br/>a. {(b, t), (b, dm), (t, b), (t, dm), (dm, t), (dm, b),} There are six arrangements for permutation.<br/>b.{(b, t), (b, dm), (t, dm)} There are three arrangements for combination because (b,t) is the same as (t,b); (b,dm) is the same as (dm,b); (t,dm) is the same as (dm,t)<br/>c. The number of permutation is greater than the number of combination.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| F. Developing mastery (leads to formative assessment 3) | <p>The teacher lets the students answer the given exercise</p> <p>Consider set A with three elements, {<i>bibingka</i>, <i>tagaktak</i> , <i>dried mango</i>}</p> <p>1. How many permutations are there if 3 elements taken 3 at a time?</p> <p>2. How many combinations are there if 3 elements taken 3 at a time?</p> <p>Answer:<br/>1. {(b, t, dm), (b, dm, t), (t, b, dm), (t, dm, b), (dm, t, b), (dm, b, t),}<br/>There are 6 permutations if 3 elements taken 3 at a time.<br/>2. {(b, t, dm)}<br/>There is 1 combination if 3 elements taken 3 at a time.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| G. Finding practical applications of                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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| concepts and skills in daily living                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| H. Making generalizations and abstractions about the lesson                                             | <p>The teacher summarizes the mathematical concepts on the difference of permutation and combination through questions like:</p> <p>1. Compare the number of permutation and combination.</p> <p>2. What is the difference between permutation and combination of n objects taken r at a time?</p> <p>Possible answer:</p> <p>1. The number of arrangements in permutation is greater than combination.</p> <p>2. The order of arrangement in permutation matters while in combination does not matter.</p> |
| I. Evaluating Learning                                                                                  | <p>The teacher lets the students answer the formative assessment individually. From the four letters C,A,R,E , choose three without repeating any letter,</p> <p>a. if order is important</p> <p>b. if order is not important</p> <p>Answer Key:</p> <p>a. CAR CAE CRE ARE<br/>CRA CEA CER AER<br/>RAC ACE REC REA<br/>RCA AEC RCE RAE<br/>ARC ECA ERC ERA<br/>ACR EAC ECR ERA</p> <p>There are 24 possible arrangements.</p> <p>b. CAR CAE CRE ARE</p> <p>There are 4 out of 24 selections.</p>            |
| J. Additional activities or remediation                                                                 | <p>Assignment:</p> <p>Write a brief paragraph comparing permutations and combinations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                  |
| a. REMARKS                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| b. REFLECTION                                                                                           | <p>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.</p>                                                                                                                                                                                          |
| 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 | Part IV- E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |