

Name: _____ Date: _____ Rating/Score: _____

ACTIVITY 1**FUNDAMENTAL COUNTING PRINCIPLE**

Directions: Read and analyse the problem then answer the questions that follow.

Suppose you are preparing a menu that may be served in your newly built restaurant. If you have 3 appetizers, 4 main dishes, 2 desserts, and 6 kinds of drinks in your restaurant,

- how many different meal sets can you place on your menu?
- What mathematical concepts did you use?
- If the chef added 2 main dishes to the menu, how many different meal sets can one choose from?

**ACTIVITY 2****COUNT ME IN**

Directions: Answer the following problem. Show your solution. The first number is done for you.

- Find $P(9,3)$.
- What is the permutation of 14 taken 5?
- A group of 45 people is going to run a race. In how many possible ways can they be arranged as first, second, and third placers?



Source: DepEd LM Grade 10

- A group of 10 students wants to elect a president, vice president, secretary, and treasurer. How many different ways can they choose the officers?
- How many ways can you introduce the 5 starting players of the Wildcats Basketball Team in the basketball game?

Quarter 3 Week: 1&2

Competencies: Illustrates the Permutation of Objects. M10SP-IIIa-1

Solve problems involving permutations. M10SP-IIIb-1

Notes to teachers: This material serves as summative assessment

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ACTIVITY 3**PERMUTATION**

Directions: Complete the table below with their corresponding correct answer. The first row is done for you.

Distinct/Distinguishable Permutation	Circular Permutation
1. How many permutations are there of the letters in the word "greet"? There are 2 letter E's in the word GREET. Hence, we need to eliminate duplications by dividing 2! $P = \frac{n!}{p! q! r! \dots} = \frac{5!}{2!}$ $P = \frac{5 \times 4 \times 3 \times 2 \times 1}{2 \times 1}$ $P = 60$ Therefore, there are 60 ways to arrange the letters of the word GREET.	4. In how many ways can 4 people be seated around a circular table? If there are 4 seats, we can assign one person to a fixed seat and determine the number of ways the other 3 can be arranged. This way, we can avoid counting an arrangement that resulted from a mere rotation, thus, $P = (n - 1)!$ $P = (4 - 1)!$ $P = 3! = 6$ Therefore, there are 6 ways to arrange 4 people at a circular table.
2. How many distinct permutations can be formed from the word "WEDNESDAY"?	5. In how many ways can 8 people form a circle for a folk dance?
3. In how many ways can you arrange the letters in the word RHOMBUS?	6. In how many ways can 5 people be seated around a circular table if two of them insist on sitting beside each other?

Quarter 3 Week: 1&2

Competencies: Illustrates the Permutation of Objects. M10SP-IIIa-1

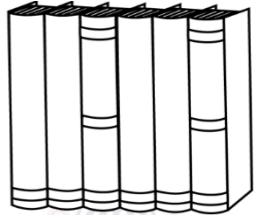
Solve problems involving permutations. M10SP-IIIb-1

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ACTIVITY 4**MISSION POSSIBLE 1**

Directions: Answer each permutation problem completely.

1. Eight children join hands and form a circle. In how many ways could the circle be formed?
 2. Find the number of ways in which 5 people **A, B, C, D,** and **E** can be seated at a round table, such that A and B always sit together.
 3. Nine books are to be arranged on a shelf. There are 3 Math books, 4 Science books, and 2 English books. How many distinct arrangements are possible?
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4. Find the number of distinguishable permutations of the digits of the number 287,772.
 5. Marvin, Albert, Raff, Jeff and Ronald want to take a photo in which three of them are lined up in a row. How many different photos are possible?

Quarter 3 Week: 1&2

Competencies: Illustrates the Permutation of Objects. M10SP-IIIa-1

Solve problems involving permutations. M10SP-IIIb-1

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6. How many photographs will 9 friends have if they will take a group picture of 4 at a time?

7. You have been asked to judge an art contest with 20 entries. In how many ways can you assign 1st, 2nd, and 3rd place?

8. How many words can we make by rearranging the letters of the word PHILIPPINES?

9. There are 10 people in a dinner gathering. In how many ways can they sit around a dining table if they can sit on any of the chairs?

Quarter 3 Week: 1&2**Competencies:** Illustrates the Permutation of Objects. M10SP-IIIa-1

Solve problems involving permutations. M10SP-IIIb-1

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