JHS LEARNING ACTIVITY

Name: _____ **Grade/Score:** _____
Grade and Section: _____ **Date:** _____

Subject *(Check or choose from below.)*

- ☐ Religion/Values Education
- ☐ Natural Sciences
- ☐ Araling Panlipunan
- ☐ Filipino
- ☐ English
- ☐ Math
- ☐ TLE / ICT
- ☐ MAPEH
- ☐ HGP _____

Type of Activity *(Check or choose from below.)*_____

- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Performance Task
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title: Combinations

Learning Target: To determine the number of combinations of selected objects.

References: *(Author, Title, Pages)*
Florita C. Lamayo, et. al., Integrated Mathematics, pp.240-241
V.G. Baja and M.V. Bernido, CVIF Learning Activities

Combination – an arrangement of objects chosen from a set when the order of the arrangement is not considered.

The combination of n objects taken r at a time is given by:

$$\boxed{{}_nC_r = \frac{n!}{(r!)(n-r)!}}$$

Examples:

a) Six coins are tossed at the same time. In how many ways can four coins fall heads up?

b) A set of classroom officers of 5 members is to be formed from 10 selected students. In how many ways can this be done?

Solutions:

a) With $n = 6$ and $r = 4$,

$${}_nC_r \longrightarrow {}_6C_4 = \frac{6!}{(4!)(6-4)!} = \frac{6!}{(4!)(2!)} = \frac{6(5)(4!)}{4!(2)(1)} = \frac{30}{2} = 15$$

b) With $n = 10$ and $r = 5$,

$${}_nC_r \longrightarrow {}_{10}C_5 = \frac{10!}{(5!)(10-5)!} = \frac{10!}{(5!)(5!)} = \frac{10(9)(8)(7)(6)(5!)}{5(4)(3)(2)(1)(5!)} = \frac{30240}{120} = 252$$

Exercises:

1) List the different combinations of two letters chosen from the set (C, V, I, F). Compare your list with permutations for all elements of the set.
2) A committee of 9 members is to be chosen from 12 seniors. Find the number of choices.
3) How many basketball team sets of 5 members can be formed from the bench of 8 players?