LEARNING AS ONE NATION
Expanded Project

L E A R N I N G A C T I V I T Y

Math 10_5

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

Subject *(Check or choose from below.)*_____

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

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

- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Laboratory Report
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title: Sum of Terms of an Arithmetic Sequence

Learning Target: To find the sum of different terms of an arithmetic sequence.

References: *(Author, Title, Pages)*
1) D. I. T. Gillesania, C.E., Mathematics and Engineering Sciences, p. 19;
2) J. E. A. Mangyao, CVIF Learning Activities

The sum of *n* terms of an arithmetic sequence is obtained by using the equation:

$$\boxed{S = \frac{n}{2}(a_1 + a_n)}$$

where, n is the number of terms of the arithmetic sequence
a_1 is the first term
a_n is the nth term
d is the common difference.

Example: Determine the sum of the first six (6) terms of the sequence,
2, 4, 6, 8, 10, 12, 14, 16,...

Solution 1: Given: $n = 6$, $a_1 = 2$, $a_6 = 12$, $d = 2$

We substitute the values that are given:

$$S = \frac{n}{2}(a_1 + a_n)$$

$$S = \frac{n}{2}(a_1 + a_6)$$

$$S = \frac{6}{2}(2 + 12) = 3(14) = 42.$$

★Note that, if we do not know the value of a_n, we can first find its value by using the expression in the previous activity:

$$a_n = a_1 + (n - 1)d$$

Exercises: Determine the sum of the first seven terms of the following sequences.

a) 8, 17, 26, ...
b) 25, 35, 45,...