LEARNING AS ONE NATION

Expanded Project

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

Math 10_11

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 a Finite Geometric Sequence
Learning Target:	To find the sum of terms of a finite geometric sequence.
References: *(Author, Title, Pages)*	http://www.mathalino.com/reviewer/derivation-of-formulas/sum-of-finite-geometric-progression V. G. Baja, CVIF Learning Activities

The sum of a finite geometric sequence is obtained by using the equation,

$$\boxed{S = \frac{a_1(r^n - 1)}{r - 1}}$$

where $r \neq 1$.

Example:

Find the sum of the first 4 terms of the geometric sequence whose first three terms are $-3,\ -12,\ -48, \ldots$.

Solution:

The value of $a_1 = -3$.

We get r by getting the ratio between the 2nd and 1st terms:

$$r = \frac{a_2}{a_1} = \frac{-12}{-3}. \quad \text{Therefore, } r = 4.$$

Now use the equation for the sum of the first 4 terms of the geometric sequence with $n = 4$.

$$S = \frac{-3(4^4 - 1)}{4 - 1}$$

$$S = \frac{-3(256 - 1)}{3}$$

$$S = \frac{-3(255)}{3}$$

$S = -255$. (The sum of the first 4 terms.)

Exercises:

A) Find the sum of the first five (5) terms of the geometric sequence whose first three terms are $11,\ 121,\ 1331, \ldots$.

B) Explain why $r = 1$ is not allowed in the expression for the sum of a geometric sequence. How does this value affect the sequence?