LEARNING AS ONE NATION

Expanded Project

SHS LEARNING ACTIVITY

Name: _____ **Score/Mark:** _____

Grade and Section: _____ **Date:** _____

Strand: ☐ STEM ☐ ABM ☐ HUMSS ☐ ICT (*TVL Track*)

Subject: _____

Type of Activity: ☑ Concept Notes ☑ Skills: Exercise/Drill ☐ Illustration ☐ Performance Task ☐ Essay/Report ☐ Others: _____

Activity Title: **LA01: Types of Terrestrial and Gross Planetary Motions According to Ancient Greeks**

Learning Targets:
1) To explain what the Greeks considered to be the three types of terrestrial motion and gross motion of a planet.
2) To explain how the Greeks were able to infer that the Earth is spherical.

References: *(Author, Title, Pages)*
1) Geller, H. *Knowing the Heavens* | http://physics.gmu.edu/;
2) Quora | https://www.quora.com;
3) Sadudaquil, J. A. *CVIF–DLP Learning Activities*

The three types of terrestrial motion according to ancient Greeks:

1) Motion with respect to **place** – defined as movement from one point to another.
2) Motion with respect to **quantity** – change in magnitude or value of a quantity, denoted by an increase or decrease of the value with respect to a starting point.
3) Motion with respect to **quality** – change in the "virtue" or innate characteristic of an object.

In Earth and Life Science, you learned about other types of motion as well, especially those dealing with the cycle or flow of nutrients and other natural forces in the environment (ground and in the seas). These include **tectonic motion** (movement of plates), **circulatory motion** (e.g., involving oceans and the atmosphere in the hydrologic cycle) and **tidal motion**.

Interest in astronomy had also flourished during the time of the ancient Greeks as they also took notice what is happening in the sky, noting of positions of the bright objects in the sky at different times and periods. As a result, three major motions of Earth were observed:

1) **Diurnal motion** – refers to the **daily motion** of planets, stars, and other celestial bodies across the sky. They seem to rise in the east and set in the west, relative to Earth's motion.
2) **Annual motion** – refers to **yearly motion** which shows a pattern or cycle. For a specific time on different days, the positions of celestial bodies change.
3) **Precession** – refers to the slow **conical motion** of earth's axis of rotation, similar to the motion of a spinning top.

Exercise:

Just with careful observation and deduction or logical thinking, the ancient Greeks were able to propose and prove that the Earth was spherical (like a ball), even though they were limited in the number of astronomical tools they had at the time.

Imagine yourself as one of those pioneers in astronomy during the times of the ancient Greeks. How would you explain to your peers that the planet we live in is spherical? Cite at least one proof that can be observed in our daily life without the need for an astronomical equipment.