Unit 4 Interactions within the Sun, Moon, and Earth Systems

Content Area: **Science**
Course(s): **Science 5**
Time Period: **April**
Length: **MP3 & MP4 (about 3 weeks)**
Status: **Published**

Unit Summary

In this unit of study, students develop an understanding of patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. The crosscutting concepts of *patterns, cause and effect*, and *scale, proportion, and quantity* are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in *analyzing and interpreting data* and *engaging in argument from evidence*. Students are also expected to use these practices to demonstrate an understanding of the core ideas.

Standards

5-ESS1-1	Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
5-ESS1-2	Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
5-PS2-1	Support an argument that the gravitational force exerted by Earth on objects is directed down.

Student Learning Objectives

Students will learn to:

- represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
- support an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth.
- support an argument that the gravitational force exerted by Earth on objects is directed down.

Essential Questions

- What effect does Earth's gravitational force have on objects?
- What affects the brightness of the sun and other stars?
- How and why does your shadow change during the day?
- What causes day and night?

Enduring Understandings

Students will understand that:

- the gravitational force exerted by Earth on objects is directed down.
- data can reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

Application

Students will be able to independently use their learning to:

- Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
- Support an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth.
- Support an argument that the gravitational force exerted by Earth on objects is directed down.

Skills

Students will be skilled at:

- representing data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
- supporting an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth.
- supporting an argument that the gravitational force exerted by Earth on objects is directed down.