Noble Planetarium Classroom Companion

Sun, Earth, Moon

Length: 45 minutes
Grade level: 2-6

SHOW OVERVIEW

"Sun, Earth, Moon" is a semi-interactive planetarium experience for elementary aged children about those familiar parts of the solar system.

The interactive portion of the show explains the scale of the Sun, Earth, Moon system and how they are all tied together through gravity.

The 25-minute video portion describes more about all three planetary bodies in greater detail.
If time allows, students may even have the opportunity to look at the night sky, and have the stars and constellations pointed out to them by an expert planetarium presenter.

EXTENSION IDEAS FOR TEACHERS:

Sun–Earth–Moon Model – Students create a simple model showing the relative positions of the Sun, Earth, and Moon. They should explain how gravity keeps these objects moving in predictable patterns.
Day and Night Demonstration – Students use a flashlight and globe (or ball) to model how Earth's rotation causes day and night. They should describe how the Sun appears to move across the sky even though Earth is rotating.
Moon Phases Tracker – Students draw the Moon's phases in order and explain why the Moon appears to change shape from Earth's perspective.

Critical Thinking Questions:
Ask students, *"Based on what you observed in the show, how does gravity keep the Earth orbiting the Sun and the Moon orbiting the Earth? What evidence supports this idea?"*

Ask students, *"Why do we see different phases of the Moon throughout the month? How does the Moon's position relative to Earth and the Sun affect what we observe?"*

Ask students, *"Why do we experience day and night on Earth? How would life be different if Earth did not rotate?"*

PROGRAM TEKS

2.8(C) observe, describe, and record patterns of objects in the sky, including the appearance of the Moon
3.8(B) describe and illustrate the Sun as a star composed of gasses that provides light and thermal Energy
3.8(C) construct models that demonstrate the relationship of the Sun, Earth, and Moon, including orbits and positions
4.8(C)* collect and analyze data to identify sequences and predict patterns of change in shadows,
seasons, and the observable appearance of the Moon over time
5.8(C) demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky
5.8(D) identify and compare the physical characteristics of the Sun, Earth, and Moon
4.8(C) collect and analyze data to identify sequences and predict patterns of change in shadows, seasons, and the observable appearance of the Moon over time
6.11(A) describe the physical properties, locations, and movements of the Sun, planets, moons, meteors, asteroids, and comets
6.11(B) understand that gravity is the force that governs the motion of our solar system
6.11(C) describe the history and future of space exploration, including the types of equipment and transportation needed for space travel