

Dance of the Earth, Moon, and Sun

Grade 7

Teacher's Guide



Lake Erie Nature & Science Center

Description

In this field trip, hands-on activities and planetarium dome models will help your students experience moon phases and eclipses to understand the “dance” of the Earth, moon and sun like never before!

Length: 60 minutes. **Adult chaperones recommended:** 1

Content Standards

Subject	Gr	Standard	Objective/"I can" Statements
Earth/Space	7	The relative patterns of motion and positions of the Earth, moon and sun cause solar and lunar eclipses, tides and phases of the moon.	<ul style="list-style-type: none">• I can explain what causes solar and lunar eclipses.• I can explore gravitational forces between the Earth and the moon.• I can predict how the movement of the moon impacts how we see the moon.

Pre-Trip Activity

- The Griffith Observatory provides background data and information pertaining to lunar phases, eclipses and celestial bodies.

Vocabulary

eclipse	revolution
force	rotation
lunar	solar
penumbra	umbra
plane	

Books

- Our Moon: New Discoveries About Earth's Closest Companion by Elaine Scott. Clarion Books, 2016
- Space Encyclopedia: A Tour of Our Solar System and Beyond by David Aguilar. National Geographic Kids, 2013.

Post-Trip Activities at School

- Use flashlights and tennis balls to visually recreate an eclipse.
- Use data to observe what phase the moon is in that day. Use a model to demonstrate the position of the moon and sun.

Extension Activities

- Research the availability of tidal-generated power facilities. Outline the requirements and output. Critique and analyze all collected data. Using tidal and current requirements (and other physical requirements, such as ocean depth, geographic location), make a determination of a recommended location for maximum effectiveness within the United States
- Use actual data to make a chart or graph that illustrates moon phases, Earth's rotation, sun position and resulting tidal data for one month