



DANCE OF THE EARTH, MOON AND SUN - VIRTUAL

Grade 7 | 60 Minutes

Teacher's Guide

Description

In this virtual 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! Video, virtual models, and screen share will also be used during the virtual experience.

Technology and Other Requirements: Zoom or Google Meet, materials will be distributed by Google Docs, Jamboard, etc. optional: flashlight, paper, pencil.

Content Standards

Earth/Space

Grade 7

Standards

- The relative patterns of motion and positions of the Earth, moon and sun cause solar and lunar eclipses, tides and phases of the moon..

Objective/"I can" Statements

- 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.