



Our Magnificent Moon

A Pre-Visit Information Guide for Teachers

Meets Rhode Island Department of Education's Grade Span Expectations: ESS2(3-4)-7, ESS2(3-4)-8

Discover our Moon, our closest neighbor in space. How did the Moon form? How did its craters, rilles, and other features come to be? From the historic Apollo missions to a future Moon base, students will learn about the past, present and future of Moon exploration, and what we have learned from it. Students will use what they have learned to design and build their own lunar spacecraft from craft materials.

OBJECTIVES

- **Earth vs. the Moon**

What are some of the differences between Earth and the Moon? How might these differences affect astronauts on the Moon? Students will discover how the Moon's environment is different from the Earth's and some of the Moon's unique characteristics.

- **The past, present and future of Moon exploration**

Mankind has long been fascinated with the Moon, exploring it first through telescopes, and more recently with the use of both manned and unmanned spacecraft. During the 1960s and '70s, the Apollo program landed 12 astronauts on the Moon, forever changing our understanding of our only natural satellite. What did they find there? What is it like to live and work on the Moon? What are plans for future Moon exploration?

- **Build a Lunar Spacecraft Activity**

Students will observe photographs of various lunar spacecraft, drawing inspiration for their own designs. They will then be given a design challenge to construct a lunar spacecraft, such as a lander, rover or satellite, out of craft materials. Students are challenged to think about their craft's mission objectives, destination, and capabilities.

ACTIVITIES

Teachers are encouraged to conduct pre-visit and post-visit classroom discussions and activities with their classes to make the most of their experience. During this program, students will explore our Moon up close, and learn about some of the discoveries that have been made by our observation and exploration of the Moon. Get your students excited by having them keep Moon journals recording what they observe of the Moon over the course of a month. Download NASA's "Exploring the Moon" Educator Guide at:

HELPFUL VOCABULARY

Apollo Program – This spaceflight program undertaken by NASA from 1961 – 1975 had the goal of landing humans on the Moon and safely returning them to Earth. From 1969 to 1972, twelve US astronauts landed on the Moon in six Apollo missions.

Atmosphere – The thin layers of gases that envelopes the Earth and some other planets. The Moon lacks an atmosphere, which leads to important differences between the Earth and the Moon.

Gravity – The force which draws objects together and is responsible for holding matter down to the Earth. The Moon also has gravity, but it is significantly less strong than the gravity on Earth.

Impact crater – An impact crater is a round depression in the surface of a planet, moon, or other rocky object made by a collision with a smaller object such as a meteorite. Impact craters are the most common landforms on the Moon, Mercury, and most small moons or asteroids.

Meteorite – A rocky body, usually a portion of an asteroid, that makes contact with the surface of the Earth or Moon. Because the Moon lacks an atmosphere, it is very vulnerable to meteorite impacts, which create impact craters.

Natural Satellite – A celestial body which orbits a planet; also known as a 'moon'. Our Moon is the Earth's only natural satellite.

WEBSITES

Google Moon:

<http://www.google.com/moon/>

NASA Moon Website:

http://www.nasa.gov/worldbook/moon_worldbook.html