



Field Trip to the Moon

A Pre-Visit Information Guide for Teachers

Meets the following RI GSE requirements:

ESS2 (3-4)-7, ESS2 (3-4)-8, ESS3 (3-4)-9, ESS2 (5-6)-6, ESS2 (5-6)-8, ESS3 (5-6)-9

This may be the first visit to the Planetarium for many of your students. We have found that both cognitive and affective learning can be increased when teachers use structured activities before and/or after the visit to create a context for the experience and links with their classroom instruction. In this guide we have provided some interesting facts about the Cormack Planetarium and include background information about the astronomy content that will be presented in **"Field Trip to the Moon"**. We encourage teachers to conduct pre-visit and post-visit classroom discussions and activities with their classes to make the most of their field trip experience.

ABOUT THE CORMACK PLANETARIUM:

- In a planetarium, objects in the universe are projected, as they exist at any time in space.
- These celestial objects are projected onto a dome-shaped ceiling so it appears that one is looking up into the night sky.
- Our Star Projector is capable of displaying images of over 7,000 stars...many more than anyone can see without the aid of a telescope. Planets, comets, satellites and the Milky Way and Andromeda Galaxy can also be projected.

FIELD TRIP TO THE MOON:

The Moon holds a unique place in the human imagination. People have observed the Moon for thousands of years, noticing the changes in its phases and its effects on our own Earth. These phases are caused by the motion of the Moon around the Earth. But what is the Moon, and how did it form? From rock samples returned by the Apollo astronauts, scientists have determined that the Moon formed nearly 4.5 billion years ago when a large planetoid collided with the Earth. From those violent beginnings, Earth's only natural satellite was born.

Humans first traveled to the Moon in 1969. NASA currently has plans to send humans back to the Moon. This virtual 'field trip' will take viewers along for the ride, showing them how NASA plans to go back to the Moon, using the new Ares rocket and Orion spacecraft. Along the way, we will notice differences between the Earth and the Moon and gain a better understanding of our Moon's geology and environment. We will also discover some challenges of space exploration and gain a first-hand 'astronaut's eye' view of space travel.

SUGGESTED CONCEPTS TO REVIEW INCLUDE:

ATMOSPHERE	MAGNETOSPHERE	ROCKET
CRATER	MARE	SATELLITE
CONSTELLATION	MOUNTAIN	SOLAR WIND
GRAVITY	ORBIT	WANING
HIGHLANDS	PHASES	WAXING
LUNAR LANDER	REGOLITH	

ACTIVITIES: WHERE DO WE GO FROM HERE?

Teachers are encouraged to conduct pre-visit and post-visit classroom discussions and activities with their classes to make the most of their experience. Students can continue their study of the Moon by understanding its most common feature – impact craters. Students will understand the forces and factors that create impact craters by making their own cratered surface:

<http://lunar.arc.nasa.gov/education/activities/active15a.htm>



SUGGESTED WEBSITES:

- NASA's Moon, Mars and Beyond Site:
http://www.nasa.gov/mission_pages/exploration/mmb/index.html
- Google Moon Site:
<http://www.google.com/moon/>