



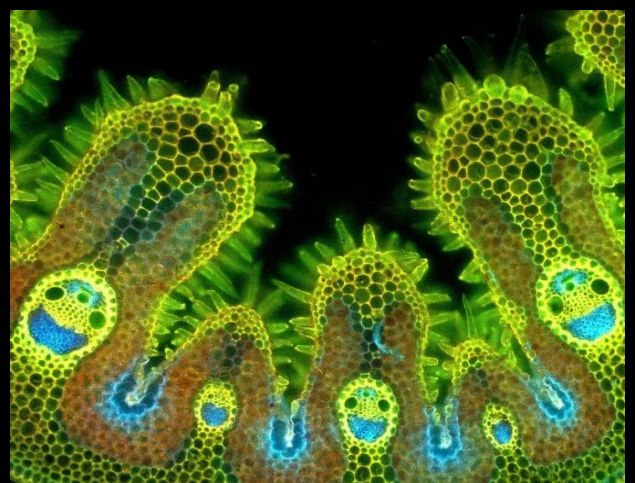
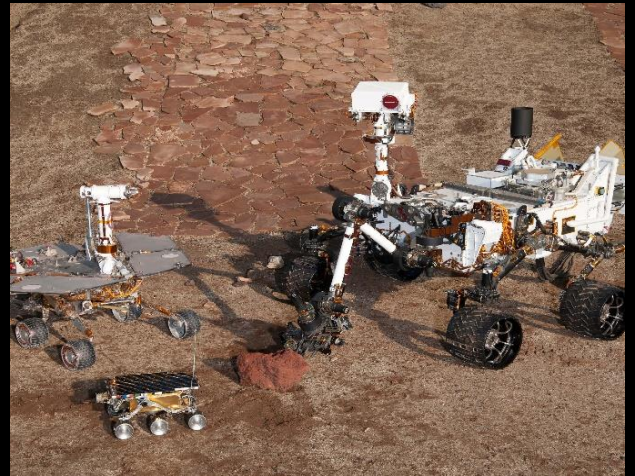
LUNAR QUEST™

In the not too distant future several permanent habitats on the Moon, the primary one being Moonbase Alpha, are home to astronauts and scientists conducting research and studying the planets beyond. To expand that research, additional environments must be created and new mining locations identified. Human operated vehicles and rovers search for titanium and iron deposits, and while scouting for these locations is dangerous, it is critical to the expansion of the lunar research.

The new crew sent to help with this expansion faces a tough task, and many critical decisions must be made. These decisions impact both the health and safety of the crew and the success of the mission. As the team faces those choices and weighs the options, additional challenges put communication at risk and damage work that has already been completed.

The two groups will have to achieve several goals before calling the mission a success: Observe the Earth, sun and beyond as they navigate the Spacecraft to the Moon to select sites for future lunar mining, and ensure the crew stays healthy and safe during the duration of the mission.

By working together to accomplish these goals, the crew can help push the limits of exploration and science.



MISSION TEAMS

One member of each team will be in Mission Control for the first half of the mission while the other is assigned to the Space Station. Half way through Lunar Quest, the group in Mission Control launches to the Space Station and the Space Station group returns to work in Mission Control



COMMUNICATION (COM)

Provide communications support between astronauts and Mission Control; Manage the distribution of assignments during an event and during some emergencies; Provide critical rover launch information.



ROVER (ROV)

Build and test a remotely operated robot to study the Moon; Install critical equipment and components, and retrieve data.



ROBOTICS (BOT)

Examine different lunar rocks through the use of robotic arms; Execute basic programs for unmanned rovers to gather their payloads.



LIFE SUPPORT (LS)

Work hand-in-hand with peers to ensure safe conditions for all team members on the Spacecraft; Manage life support emergencies as they occur.



GEOLOGY (GEO)

Examine different Moon rocks for key elements and minerals; Research and map possible dig sites for important minerals.



MEDICAL (MED)

Monitor the health of the crew with a focus on osteoporosis and radiation; Run various diagnostics on different team member's blood pressure, monitor radiation and heart rate.



SPACE WEATHER (SW)

Examine sun spot activity, solar flares and coronal mass ejections and the effects each have satellites and the Spacecraft; Handle preparations for solar flare or space debris emergencies by determining location, severity and effects.



NAVIGATION (NAV)

Track satellites to ensure quality communication; Calculate and plot the course for the Spacecraft to reach and navigate on the Moon.



ASTROBIOLOGY (ASTRO)

Study life as we know it and what is necessary for life to survive; Search for planets that fit the criteria necessary to sustain life as we know it.



HAZARD (HAZ)

Study pH levels and air quality and their relationship with healthy living conditions for the crew; Create and design an air filter out of the materials provided.

Lunar Quest brings science to life, giving students the exciting opportunity to apply what they learn in the classroom to a real life scenario in our state-of-the-art simulated learning environment.

Before the mission begins, educators have access to a teacher guide developed to give students an understanding of topics covered in the mission. Lesson plans and activities are outlined to correspond with four key areas – Health in Space, Rover Races, Orbital Mechanics, and The Search for Life

Through both project and problem-based learning, students taking part in the mission have to complete assignments to ensure success. At the same time, they may encounter emergencies or unexpected problems that require critical thinking and decision-making skills to find resolutions. Each student plays a part in the mission, interacts with hands-on labs, and is responsible for finishing several tasks. Teamwork is crucial because if one member of the class fails to complete his or her job, the entire mission may be at risk.

Aligned with Common Core and Next Generation Science Aligned with Common Core and Next Generation Science Standards and containing up-to-date, accurate educational content, for the first time Challenger Center missions can be customized to allow for adaptations based on needs and the educational levels of the class visiting the Center. In addition, Challenger Center digital mission and data logs now provide teachers with a level of assessment for post mission review and to help continue the experience in the classroom. Teachers can walk away with a digital copy of the information students inputted during the mission to gain a better understanding of the strengths and weaknesses of that particular class.

