

NOW SCHEDULING: LUNAR QUEST



LAUNCH TO THE MOON!

- Launch to the Moon in search of a long-term human habitat.
- Command and assist in Mission Control, or board the Spacecraft as an astronaut.
- Help deploy a Lunar Exploration Rover to investigate areas of the lunar surface.
- Make critical decisions to turn a potential catastrophe into NASA's finest hour!

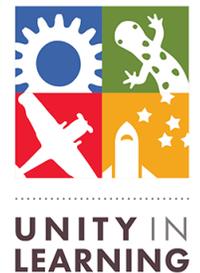
Major STEM concepts

- Study lung tissue samples to analyze the impact of radiation exposure during space flight.
- Explore lunar surface features and properties that could protect astronauts.
- Conduct experiments to test the efficiency of solar panels used as an energy source during the mission.

Hands-on labs

- Use a digital microscope to explore and analyze lung tissue samples.
- Design electrical circuits to troubleshoot and determine functionality of solar panels.
- Assemble/troubleshoot the parts of the Rover required for the mission.
- Conduct experiments to measure the mass of rock samples and calculate the density.

Lunar Quest software program is 508 compliant and includes text read aloud and font resizing for visitors.



The Challenger Learning Center at SC4 is part of Challenger Center's network of Challenger Learning Centers and a collaboration with Unity in Learning, which consists of the Ann Arbor Hands-On Museum, the Leslie Science & Nature Center, the Yankee Air Museum and St. Clair County Community College (SC4).

TEAM ROLES

CREW MEMBERS WILL SERVE IN A VARIETY OF STEM-BASED ROLES IN MISSION CONTROL AND IN THE SPACECRAFT



Communications

Objectives: Serve as the communications leader between Mission Control and Spacecraft.

Branches of Study: Communications, Physical Sciences/Sound Waves

Career Connections: Communications Engineer, Satellite Engineer, Systems Technician



Navigation

Objectives: Calculate and plot the Spacecraft's course to the Moon and back to Earth.

Branches of Study: Aviation, Aerospace Studies and Operations

Career Connections: Pilot, Aerospace Engineer, Air Traffic Controller



Rover

Objectives: Design/assemble the ROV that is launched to the Moon to search for lava tubes.

Branches of Study: Engineering, Network Support, Information Technology, Communications Technician

Career Connections: Computer Scientist, Mechanical Engineer, Structural Engineer



Weather

Objectives: Conduct experiments and collect data to analyze the efficiency of the solar panels on the Spacecraft.

Branches of Study: Meteorology, Astronomy, Environmental Engineering

Career Connections: Meteorologist, Electrical Engineer, Astronomer



Medical

Objectives: Conduct health assessments to ensure the safety of the crew in the Spacecraft.

Branches of Study: Anatomy and Physiology, Biology, Nutrition, Health Sciences, Counseling/Mental Health Awareness

Career Connections: Nutritionist, Counselor, Emergency Medical Technician, Nurse, Doctor, Medical Assistant



Biology

Objectives: Conduct experiments and investigate lung conditions that can occur due to radiation exposure.

Branches of Study: Laboratory Sciences, Respiratory Diseases, Infectious Diseases

Career Connections: Biologist, Respiratory Therapist, Epidemiologist, Lab Technician



Robotics

Objectives: Conduct experiments to determine if solar panels are functioning and then create a coding program for the robotic arm to replace the appropriate panels.

Branches of Study: Coding, Electrical Engineering, Computer and Informational Technology

Career Connections: Electrical Engineer, Computer Scientist, Computer Programmer, Systems Technician



Life Support

Objectives: Conduct experiments and troubleshoot the systems on the Spacecraft to ensure the environment is safe for the crew during the flight.

Branches of Study: Engineering, Environmental Health and Safety

Career Connections: Environmental Engineer, Chemist, Systems Technician



Geology

Objectives: Collect data and analyze physical features of the landing sites on the Moon.

Branches of Study: Physical Sciences, Geology, Environmental Sciences

Career Connections: Geologist, Chemical Engineer, Seismologist, Land Surveyor



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WHAT YOU CAN EXPECT WHEN YOU VISIT THE CHALLENGER LEARNING CENTER AT SC4



Briefing Room

Learners begin their adventure in the Briefing Room, where they are assigned their team roles, receive their pre-mission brief and learn about their Mission goals before launch. From here, they receive their assignments: Mission Control team or Spacecraft crew.



Mission Control

The Mission Control team guides Spacecraft crew members through their mission. The room is surrounded by large high-definition screens that enhance the visual experience and enable learners the ability to observe flight paths, check on the status of the Mission, and watch a live feed of their teammates in the Spacecraft. Specialized lighting indicates emergencies, communications alerts, and Mission status. The new Challenger Learning Center Mission Control was designed with help from Blue Origin, drawing inspiration from their own New Glenn Mission Control.



Decontamination

Before the Spacecraft crew can initiate transport, they must go through the decontamination process.



Transport Room

Next, the Spacecraft crew enters the Transport Room. Once in jump seats, the launch sequence begins. Authentic video and audio communications combined with specialized lighting bring the experience to life.



Spacecraft

The crew then enters Spacecraft, where they navigate through their Mission, conduct experiments (including using robotic arms, circuit assemblies and water labs), monitor crew health and safety, complete research, and communicate with teammates in Mission Control. Specialized lighting, like Mission Control, alerts learners to emergencies, communications updates and Mission status. Large monitors above each workstation display emergency messages and videos throughout the experience.



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