



Lunar Quest Biology (BIO) Team



Job Description:

Conducting experiments and collecting data to investigate lung conditions that can occur due to radiation exposure.

Career Connections:

- Biologist
- Epidemiologist
- Physiologist
- Lab Technician

Helpful Skills:

- Collaboration
- Analyzing data

Vocabulary:

Mission Vocabulary:

Mission Commander – the person who is in charge of the astronauts onboard a space vehicle

Flight Director – the person who supervises a space mission from Mission Control

Simulator – an artificial environment created to resemble an actual place

Task Cards – a step-by-step set of written instructions for performing a job

Airlock – a device that permits the passage of people and objects between areas while minimizing the change of pressure and loss of air

Lunar – related to the moon

Docking – joining with a space station or another spacecraft while in space

Translunar Injection – a maneuver that moves a spacecraft from orbit around the Earth onto a trajectory toward the Moon

Lava Tubes – cave formations made by lava flowing either above or below the surface

Moonquake – a quake or series of vibrations on the moon similar to an earthquake

Descent – an action of moving downward, dropping, or falling

Altitude – the vertical elevation of an object above a surface (such as sea level or land) of a planet or natural satellite

Satellite – an artificial body placed in orbit around the Moon, Earth, or another planet in order to collect information for communication

Orbit – the curved path an object follows as it revolves around a celestial body



Crater – a basin resulting from the collision of an object with a planetary surface

Vocabulary for My Job:

Radiation – energy that moves from one place to another as a wave or stream of high-energy particles

Alveoli – small air sacs within the lungs that exchange oxygen with carbon dioxide to help us breathe

Emphysema – a chronic lung disease that damages air sacs in the lungs, making it difficult to breathe

Bronchitis – a condition that causes inflammation of the bronchial tubes, or airways in the lungs



Lunar Quest Robotics (BOT) Team



Job Description:

Programming instruments for the ROV (Remotely Operated Vehicle) and using a robotic arm to test and deploy a solar panel

Career Connections:

- Electrical Engineer
- Computer Programmer
- Systems Technician



Helpful Skills:

- Problem-solving
- Analyzing data
- Collaboration



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Vocabulary for My Job:

Programming – the act of providing instructions to a computer to perform a set of actions without direct human control

Program Nesting – an if-then scenario in which you program an instrument to follow instructions only when certain criteria are met (as in “IF it’s raining, THEN deploy umbrella”)



Lunar Quest Geology (GEO) Team



Job Description:

Conducting experiments with rocks and minerals and analyzing the physical features of the landing sites on the Moon.

Career Connections:

- Geologist
- Chemical Engineer
- Seismologist
- Land Surveyor

Helpful Skills:

- Collecting and analyzing data
- Collaboration

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Radiation – energy that moves from one place to another as a wave or stream of high-energy particles

Geothermal – using the heat produced by a planetary body

Density – the amount of mass in a particular space, calculated by dividing the mass of something by its volume



Lunar Quest Life Support (LS) Team



Job Description:

Conducting experiments and troubleshooting the systems on the Spacecraft to ensure the environment is safe for the crew during the flight.

Career Connections:

- Environmental Engineer
- Systems Technician
- Chemist

Helpful Skills:

- Verbal communication
- Troubleshooting
- Problem-solving



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Vocabulary for My Job:

Thermostat – the controls used to regulate a heating system

Air Pressure – the pressure exerted by the weight of air on the earth's surface

Configuration – the arrangement of different parts or components in a particular form or combination

Air Filter – a device for filtering particles of dust, smoke, pollen, mold, viruses, etc. from the air

TDS – total dissolved solids; a measure of anything dissolved in water that is not an H₂O molecule

pH – a scale used to specify the acidity or basicity of a liquid



Lunar Quest Medical (MED) Team



Job Description:

Monitoring vitamin levels and conducting wellness exams on the crew to ensure their health and safety.

Career Connections:

- Nurse or doctor
- Emergency Medical Technician (EMT)
- Nutritionist
- Medical Assistant



Helpful Skills:

- Interacting with others
- Patience

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Vocabulary for My Job:

Nutrients – substances that promote growth, provide energy, and maintain life

Nutrition – obtaining the substances necessary for growth and good health

Treatment – something that healthcare providers do for their patients to control a health problem, lessen its symptoms, or clear it up

Wellness – the optimal state of health

Deficiency – a lack or shortage of something

Calories – units of energy, often used to express the nutritional value of foods

Microgravity – the condition in which people or objects appear to be weightless



Lunar Quest Navigation (NAV) Team



Job Description:

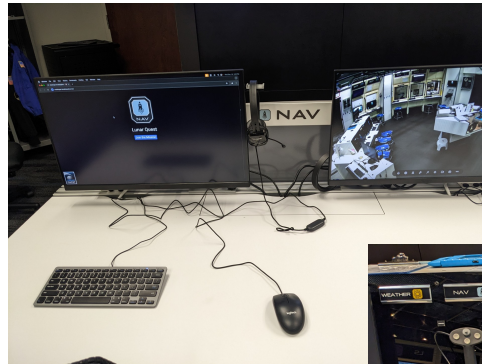
Calculating and plotting the Spacecraft's course to the Moon and back to Earth.

Career Connections:

- Pilot
- Aerospace Engineer
- Mathematician
- Air Traffic Controller

Helpful Skills:

- Communication
- Attention to detail



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Vocabulary for My Job:

Rendezvous – meeting at an appointed or designated place and time

Velocity – the speed at which an object is traveling in a given direction

Trajectory – the path an object takes when moving through space

Propulsion – the action of driving or pushing forward



Lunar Quest Communications (COM) Team



Job Description:

Communicating messages between the Spacecraft and Mission Control and communicating critical messages to crew members throughout the mission.

Career Connections:

- Communication Engineer
- Satellite Engineer
- Systems Technician

Helpful Skills:

- Reading aloud
- Keeping calm under pressure
- Multi-tasking
- Leadership



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Vocabulary for My Job:

Encrypt – to convert information into a secret code that hides its true meaning

Decrypt – to make a coded or unclear message intelligible



Lunar Quest Rover (ROV) Team



Job Description:

Designing and assembling a Remotely Operated Vehicle that is launched to the surface of the Moon to search for lava tubes.

Career Connections:

- Computer Scientist
- Mechanical Engineer
- Structural Engineer

Helpful Skills:

- Following directions
- Collaboration
- Communication
- Remaining calm under pressure



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Vocabulary for My Job:

Payload – the object or the entity that is being carried by a vehicle

Bus – the ROV body that holds the core

Assemble – put together

Terrain – the physical features of the ground or surface of an area

Rappel – descent from a place of high elevation to a lower one as from a cliff, using a rope or cable

Skylight – an opening in the roof or top of a cave or lava tube that exposes the subsurface

Tether – a line that is attached to an object or person to secure it in place

Motherboard – a circuit board containing the principal components of a computer or device with connections for other pieces to be slotted

Power – a source or means of supplying electrical energy

Mass – the quantity of matter contained in an object



Lunar Quest Weather (WX) Team



Job Description:

Researching and learning about solar energy and conducting experiments to ensure the spacecraft has enough solar power.

Career Connections:

- Meteorologist
- Astronomer
- Electrical Engineer

Helpful Skills:

- Collecting and analyzing data
- Making quick decisions

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Vocabulary for My Job:

Deploy – to move or place an instrument in a specific location for use

Voltage – the measure of electrical potential; the measure of how forceful electrons are pushed through a circuit

Current – the measure of the amount of flow of electrical charge

Solar Panel – a panel designed to absorb the sun's rays as a source of energy for generating electricity or heating

Irradiance – the amount of light energy from one thing hitting a square meter of another each second

Ammeter – an instrument used to measure electric current