



CREW MANIFEST

All teams must have a minimum of two members - one in MC and one in SC

MISSION	<input type="checkbox"/> Comet	<input type="checkbox"/> Moon	<input type="checkbox"/> Mars	Date	<input style="width: 90%;" type="text"/>	MISSION TIME	<input style="width: 90%;" type="text"/>
SCHOOL	<input style="width: 95%;" type="text"/>					# of Students	<input style="width: 90%;" type="text"/>
TEACHER(S)	<input style="width: 95%;" type="text"/>					# of Adults	<input style="width: 90%;" type="text"/>

Teams	Mission Control Nametag Color _____	Spacecraft Nametag Color _____
COM	1.	2.
DATA	3.	4.
NAV	5.	6.
	25.	26.
MED	7.	8.
	27.	28.
PROBE	9.	10.
	23.	24.
REM	11.	12.
	17.	18.
LS	13.	14.
	21.	22.
	31.	32.
ISO	15.	16.
	19.	20.
	30.	29.
Space Weather	33.	34.
PAO	Use only for more than 34 students	Use only for more than 34 students

Complete numbered lines in order.

Use PAO (Public Affairs Officers) only for more than 34 students.

Space Weather

Name _____

School _____



Space Weather

Name _____

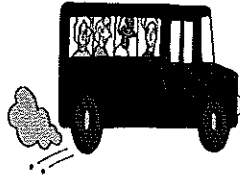
School _____



Transportation Team

Name _____

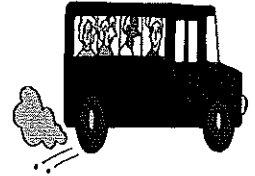
School _____



Transportation Team

Name _____

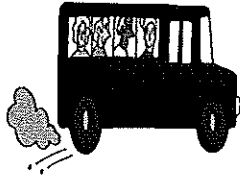
School _____



Transportation Team

Name _____

School _____



Transportation Team

Name _____

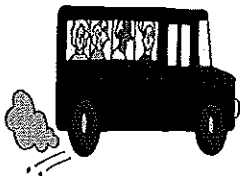
School _____



Transportation Team

Name _____

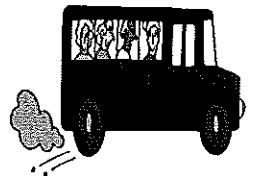
School _____



Transportation Team

Name _____

School _____



Return to the Moon

Notes to Educators

1. COMMUNICATIONS

- Good verbal communication, organization, and reading skills; able to follow directions/procedures; able to handle stress. A strong, confident individual who can take charge.
- Math: none

2. DATA

- Good reading skills, good reasoning skills; able to use a computer.
- Math: none

3. NAVIGATION

- Able to follow written directions; strong math/science/reading skills. A strong, confident individual who enjoys math.
- Math: latitude and longitude, use math formulas to convert numbers, and read charts/tables

4. MEDICAL

- Good math/reading/research skills; good verbal communication skills; patience.
- Math: average three numbers using decimals to the hundredths place
- Equipment: computer and blood pressure monitor

5. PROBE

- Good listening and reading skills; self-confidence; able to follow detailed verbal and written instructions.
- Math: some addition and problem solving.
- Additional notes: put your strongest reader in Mission Control second. This station is time critical.

6. REMOTE

- Good reading/research skills; able to focus on their tasks; patience; good typing skills.
- Math: none
- Equipment: magnets, hand lenses, and computers to research rock information

7. LIFE SUPPORT

- Good reading/research skills; able to handle stress; strong leadership skills, good typing skills. An outgoing student who can take charge of an emergency or a quiet student who needs a boost in their self-confidence.
- Math: subtract numbers with decimals to the tenths place, reading gauges with whole numbers and decimals to the tenths place (determine measurement of unnumbered hash marks)
- Equipment: graduated cylinder (mL), beaker (mL), test tubes, gauges and scales

8. ISOLATION

- Good math/reading/research/problem-solving skills; good hand-eye coordination; patience (robots can be frustrating).
- Math: subtract decimals to the tenths place, estimation, and average three numbers
- Equipment: robotic arms, balance (mass in grams), flasks (volume in mL), and Geiger counter
- Note: This station is good for strong independent workers.

9. SPACE WEATHER

- Good reading/research skills; able to focus on their tasks, able to work alone.
- Math: reading graphs, division, subtraction and conversion of hours to minutes.
- Equipment: computer, keyboard, satellite images, and magnets.

All stations use the metric system. Please remind all students to write in complete sentences. The communication system requires that all students know how to send and receive e-mails.

Return to the Moon

Team Descriptions

COMMUNICATION TEAM

Your team's mission will be to establish a verbal link between Mission Control and the spacecraft. Your assignment will involve speaking on headsets to send and receive verbal messages. You will be the "voice" connecting the astronauts in the spacecraft and the crew in Mission Control!

DATA TEAM

Your team will be the message managers for the mission. You are responsible for routing all messages between Mission Control and the spacecraft. Your teammates are depending on you to send their important results and instructions!

NAVIGATION TEAM

Your team's mission will involve using a computer to land the spacecraft on the lunar surface. Your assignment will include determining the exact position of the spacecraft in space, bringing the spacecraft out of an orbit around Earth and into orbit around the Moon. Finally your team will select the best possible landing site and land on the Moon.

MEDICAL TEAM

Your team's mission will involve performing medical tests to monitor the health of the astronauts onboard the spacecraft. Your assignment will include conducting visual, auditory, and cardiovascular tests, and analyzing the test results. Your teammates are depending on you to keep them alive!

PROBE TEAM

Your team's mission will involve capturing a damaged probe and building an equipment module to be launched prior to landing on the lunar surface. Your assignment will require special attention to following instructions in a step-by-step manner. Your probe is essential to gathering new information about the lunar surface and selecting the best place to land on the Moon.

REMOTE TEAM

Your team's mission will involve performing experiments in the spacecraft. Your assignment will involve doing research on lunar rock and soil samples. You will work with your hands inside a glovebox to conduct your experiments. You will use this glovebox to prevent the contamination of the lunar samples.

LIFE SUPPORT TEAM

Your team's mission will involve maintaining the air, water, and power systems of the spacecraft. Your assignment will include conducting experiments to make sure that you and your teammates have enough supplies for the mission. If supplies are low or if a spacecraft system is not working properly, you may be called upon to handle these emergencies and to save the lives of your teammates!

ISOLATION TEAM

Your team's mission will involve handling hazardous materials onboard the spacecraft. Your assignment will include using robotic arms to determine if there are chemicals contaminating the spacecraft and if there is a radiation leak in the air filtration system. Your teammates are depending on you to keep them safe from harm!

SPACE WEATHER

Your team handles preparations for solar flare or meteor shower emergencies and determines the location, severity and effects of either. Your teammates are depending on you to predict any space weather events that might harm the spacecraft.

Challenger Learning Center Team Application

Name _____ Date _____

School _____ Grade _____

Teacher's name _____

Career objective: I am applying for a position from the following list of teams

Team positions: Navigation Data Communication Medical
 Isolation Probe Life Support Remote
 Space Weather

My first team choice is: _____

My second team choice is: _____

My third team choice is: _____

The personal qualities that make me suited for this position: (The type of person I am.)

The experiences that qualify me for this position: (The things I have done.)

Previous Work Experience:

Job Title _____ Dates: from _____ to _____

Responsibilities _____

References:

1. Name _____ Phone _____

2. Name _____ Phone _____

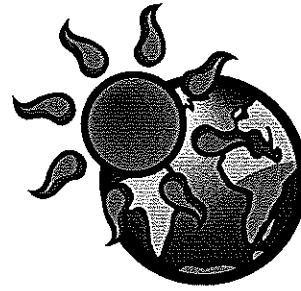
SPACE WEATHER

Congratulations! You have been selected to be a mission specialist on the Space Weather Team. You will determine how space weather can affect the Earth, satellites and spacecraft by doing research. You will work to minimize damage to equipment during a CME or space debris emergency, and identify possible sightings of auroras.

What will I do?

In the Spacecraft

- Send messages to Mission Control
- Measure CME and sun spot activity
- Perform magnetism experiments



In Mission Control

- Collect and record data sent from the spacecraft
- Implement procedures to protect satellites and communication systems in the event of a solar flare or a coronal mass ejection

Vocabulary I will need to know

Aurora- glowing, dancing curtains of light in the upper atmosphere of a planet. Auroras are caused by the interaction between the planet's magnetosphere and charged particles from the Sun

Coronal Mass Ejection (CME)- a huge cloud of hot plasma occasionally expelled from the sun.

Earth's Magnetosphere- a region of space surrounding the Earth that shield's it from the solar wind.

Solar Wind- a fast outflow of hot gas in all directions from the upper atmosphere of the Sun.

Sun Spots- dark areas on the Sun's surface. Sunspots appear in groups and can last from several days to several months.

Solar Flare-a rapid outburst on the Sun of electrons, ions and atoms, usually in the vicinity of active sunspots.

Solar Storm- a disturbance on the surface of the sun such as a solar flare or a coronal mass ejection

Equipment I will use

Computer
Computer Keyboard
Magnets

Satellite Images

SPACE WEATHER

- Aurora- Glowing, dancing curtains of light in the upper atmosphere of a planet. Auroras are caused by the interaction between a planet's magnetosphere and charged particles from the Sun
- Coronal Mass Ejection (CME)- a huge cloud of hot plasma occasionally expelled from the sun.
- Mars' Magnetosphere- A region of space surrounding Mars that shield's it from the solar wind.
- Solar Wind- a fast outflow of hot gas in all directions from the upper atmosphere of the Sun.
- Sun Spots- Dark areas on the Sun's surface. Sunspots appear in groups and can last from several days to several months.
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