



# CREW MANIFEST

SCHOOL (Grades 5-8)

Challenger Learning Center at Heartland Community College

PLEASE PRINT

School Name & Teacher(s)	Grade	Date	Time	Scenario	# Students	# Chaperones & Teachers
		/ /			# Girls:	
					# Boys:	

TEAM	MISSION CONTROL	MTV / SPACECRAFT
COM Communication	1. _____	2. _____
SPCW* Space Weather	7. _____ 23. _____	8. _____ 24. _____
GEO Geology	17. _____	18. _____
NAV* Navigation	3. _____ 19. _____	4. _____ 20. _____
BOT Robotics	9. _____	10. _____
BIO Biology	15. _____ 29. _____	16. _____ 30. _____
ROV* Rover	5. _____ 21. _____	6. _____ 22. _____
LS Life Support	13. _____ 27. _____	14. _____ 28. _____
MED Medical	11. _____ 25. _____ 33^ _____	12. _____ 26. _____ 34^ _____
PRESS Press	31^ _____	32^ _____

\* = More difficult team that might benefit from having more team members

^ = Slots only used for very large groups; not recommended for smaller groups

☐ I would like to have certificates for my students    ☐ I do not want certificates for my students



## EXPEDITION MARS: TEAM DESCRIPTIONS

TEAM	DESCRIPTION	RELATED CAREER TITLES
<b>COM</b> <i>Communications</i>	<ul style="list-style-type: none"> <li>• Provide communication support between astronauts and Mission Control</li> <li>• Locate and reprogram missing communication satellites</li> </ul>	Communications Engineer CAPCOM
<b>Space Weather</b> <i>Weather</i>	<ul style="list-style-type: none"> <li>• Mark, measure, and calculate observations of objects moving through the sky</li> <li>• Track and observe dust storms on the Mars surface.</li> </ul>	Space Weather Forecaster Meteorologist
<b>GEO</b> <i>Geology</i>	<ul style="list-style-type: none"> <li>• Operate a robotic arm to make remote observations of rock samples</li> <li>• Examine Martian rocks in a glovebox for key elements and minerals</li> <li>• Research and map possible dig sites for important minerals</li> </ul>	Geologist Robotician
<b>NAV</b> <i>Navigation</i>	<ul style="list-style-type: none"> <li>• Calculate and plot the course for the Spacecraft navigate to Mars from Phobos</li> <li>• Perform critical pre-flight checks to ensure the MTV is ready to fly</li> <li>• Guide the MTV through a safe descent process</li> </ul>	Pilot Commander Aeronautical Engineer
<b>BOT</b> <i>Robotics</i>	<ul style="list-style-type: none"> <li>• Write and execute basic programs that will guide an unmanned rover to its destination</li> <li>• Perform a series of evaluative tests on a robotic arm</li> </ul>	Computer Scientist Programmer Mechanical Engineer Robotician
<b>BIO</b> <i>Biology</i>	<ul style="list-style-type: none"> <li>• Analyze soil samples to determine if microbes are present</li> <li>• Grow and analyze bacterial cultures to monitor the MTV environment</li> </ul>	Biologist Microbiologist Virologist/Bacteriologist
<b>ROV</b> <i>Rover</i>	<ul style="list-style-type: none"> <li>• Build and test a remotely operated vehicle (R.O.V.) to search Mars for signs of water, installing critical equipment and components and retrieving data</li> </ul>	Mechanical Engineer Electrical Engineer
<b>LS</b> <i>Life Support</i>	<ul style="list-style-type: none"> <li>• Measure and monitor conditions onboard the MTV to ensure a safe working environment for all crewmembers</li> <li>• Manage environmental anomalies in a calm, efficient manner</li> </ul>	Systems Engineer Technical Specialist Environmentalist
<b>MED</b> <i>Medical</i>	<ul style="list-style-type: none"> <li>• Record crew radiation levels and recommend preemptive treatment as necessary</li> <li>• Monitor crewmember health through a variety of diagnostic tests: reaction times, blood pressure, heart rate, temperature, etc.</li> </ul>	Doctor Nurse
<b>PRESS</b> <i>Press</i>	<ul style="list-style-type: none"> <li>• Interview crewmembers during the mission</li> <li>• Begin to compose an article for publication featuring mission information and crew contributions</li> </ul>	Communications Specialist Journalist Reporter