

NASA Exercise: Survival on the Moon

SCENARIO:

You are a member of a space crew originally scheduled to rendezvous (meeting at an agreed time and place) with a mother ship on the lighted surface of the moon. However, due to mechanical difficulties, your ship was forced to land at a spot some 200 miles (321.869 km) from the rendezvous point. During reentry and landing, much of the equipment aboard was damaged and since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200mile (321.869 km trip). Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance for the crew in allowing them to reach the rendezvous point. Place the number 1 by the most important item, the number 2 by the second most important, and so on through number 15 for the least important. You will find NASA’s Rankings on the next page. Use those and subtraction to see how you might do, if you crash land on the moon.

Your Ranking	NASA Ranking	NASA Ranking – Your Ranking
___ Box of matches	___	___ - ___ = ___
___ Food concentrate	___	___ - ___ = ___
___ 15.24 meters of nylon rope (50 feet)	___	___ - ___ = ___
___ Parachute silk	___	___ - ___ = ___
___ Portable heating unit	___	___ - ___ = ___
___ Two .45caliber pistols	___	___ - ___ = ___
___ One case of dehydrated milk	___	___ - ___ = ___
___ Two 45.359kg. tanks of oxygen (100lbs)	___	___ - ___ = ___
___ Stellar map	___	___ - ___ = ___
___ Self-inflating life raft	___	___ - ___ = ___
___ Magnetic compass	___	___ - ___ = ___
___ 20 liters of water	___	___ - ___ = ___
___ Signal flares	___	___ - ___ = ___
___ First aid kit, including injection needles	___	___ - ___ = ___
___ Solar-powered FM receiver-transmitter	___	___ - ___ = ___
	Total	___

NASA Rankings

Item	Ranking	NASA'S Reasoning
Box of matches	15	Virtually worthless-there's no oxygen on the moon to sustain combustion
Food concentrate	4	Efficient means of supplying energy requirements
15.24 meters of nylon rope (50 feet)	6	Useful in scaling cliffs and tying injured together
Parachute silk	8	Protection from the Sun's rays
Portable heating unit	13	Not needed unless on the dark side of the Moon
Two .45caliber pistols	11	Possible means of self-propulsion
One case of dehydrated milk	12	Bulkier duplication of food concentrate
Two 45.359kg. tanks of oxygen (100lbs)	1	Most pressing survival need(weight is not a factor since gravity is one-sixth of the Earth's-each tank would weigh only 17 lbs. on the Moon)
Stellar map	3	Primary means of navigation-star patterns appear essentially identical on the Moon as on Earth
Self-inflating life raft	9	CO2 bottle in military raft may be used for propulsion
Magnetic compass	14	The magnetic field on the Moon is not polarized, so it's worthless for navigation
20 liters of water	2	Needed for replacement of tremendous liquid loss on the light side of the Moon
Signal flares	10	Use as distress signal when the mother ship is sighted
First aid kit, including injection needles	7	Needless connected to vials of vitamins, medicines, etc. will fit special aperture in NASA space suit
Solar-powered FM receiver-transmitter	5	For communication with mother ship(but FM requires line-of-sight transmission and can only be used over short ranges)

SCORING:

For each item, mark the number of points that your score differs from the NASA ranking, then add up all the points. Disregard plus or minus differences. The **lower** the total, the better your score.

0 – 25 Excellent

26 – 32 Good

33 – 45 Average

46 – 55 Fair

56 – 70 Poor – suggests use of Earth-bound logic

71 – 112 Very Poor- you're one of the casualties of the space Program!