

## Survival on the moon

You are a member of a space crew originally scheduled to rendezvous 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 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 200-mile 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 your 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.

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ITEMS	Individual Ranking	Group Consensus Ranking	'Official' Ranking	Individual Difference Score	Group Difference Score
Box of matches					
Food concentrate					
50 feet of nylon rope					
Parachute silk					
Portable heating unit					
Two .45 caliber pistols					
One case of dehydrated milk					
Two 45kg tanks of oxygen					
Stellar map					
Self-inflating life raft					
<i>Magnetic compass</i>					
20 liters of water					
Signal flares					
First aid kit, including <u>injection needle</u>					
Solar-powered FM receiver-transmitter					
<b>TOTAL</b>					

## Answers

1. **Two 45kg tanks of oxygen** Most pressing survival need (weight is not a factor since gravity is one-sixth of the Earth's -- each tank would weigh only about 7.5Kg.\ on the moon)
2. **20 liters of water** Needed for replacement of tremendous liquid loss on the light side
3. **Stellar map** Primary means of navigation - star patterns appear essentially identical on the moon as on Earth
4. **Food concentrate** Efficient means of supplying energy requirements
5. **Solar-powered FM receiver-transmitter** For communication with mother ship (but FM requires line-of-sight transmission and can only be used over short ranges)
6. **50 feet of nylon rope** Useful in scaling cliffs and tying injured together
7. **First aid kit, including injection needle** Needles connected to vials of vitamins, medicines, etc. will fit special aperture in NASA space suit
8. **Parachute silk** Protection from the sun's rays
9. **Self-inflating life raft** CO<sub>2</sub> bottle in military raft may be used for propulsion
10. **Signal flares** Doesn't work very well
11. **Two .45 caliber pistols** Possible means of self-propulsion
12. **One case of dehydrated milk** Of no use without a transmitter. You would also be out of range of any radio station.
13. **Portable heating unit** Not needed unless on the dark side
14. **Magnetic compass** The magnetic field on the moon is not polarized, so it's worthless for navigation
15. **Box of matches** Virtually worthless -- there's no oxygen on the moon to sustain combustion