

Greenhouses on Mars?!



Activity 1.

Introduction

To travel in space the basic requirements for human survival are exactly the same as those requirements on Earth - air, water and food. For short term missions into space the problem of maintaining a suitable atmosphere is solved simply by removing unwanted gases (by pumping the air through scavenging filters), and adding oxygen as required, then recirculating the air. All waste materials are simply discarded when the mission returns to Earth. For long term missions, especially when it is planned to build a space station on the next planet Mars, the problem is much harder to deal with, since one cannot easily travel with an unlimited supply of either gas filters, water, food, or oxygen. Water vapour also creates a problem. If the air is too dry it is uncomfortable to breathe for long periods. If the air is too moist, again, it may cause different problems. One possible solution to produce oxygen, food and, at the same time, absorb carbon dioxide, is considered to be greenhouses. Different projects are developed in different space centres, incl. NASA, to find ways to realise the idea of a number of science fiction books and movies to reside other planets.

Brainstorming session in groups:

- Discuss with your group members about living in a space station.
- Write down as many ideas, questions, problems as you can, regarding creating necessary conditions for short term as well as long term missions.
- Share your ideas with other groups.