



Food Supply System

Brainstorm and write your answers on a separate sheet of paper.

1. Review the four basic food groups. What are examples of food in each? What basic jobs for the body does each group perform?
2. Make a list of the foods and liquids everyone in your family consumed in the past 24 hours. Put each food group in a different column. Cross out all the items you consider “junk food.” Cross out each item made from an animal that must eat another animal to live.
3. We all know that, except for carnivores, animals eat plants. But what do green plants “eat” besides carbon dioxide, sunlight, and water? Look up information about the *nitrogen cycle* to learn ways green plants obtain *nitrogen*.
4. Space in the Mars **colony** will likely be limited. Protein sources like cattle and vegetable sources like corn require substantial space to produce. What are other sources of protein that take less space? Other fruits and vegetables? Review your list in #2 to help you out.
5. Research Mars facts. What sunlight conditions exist on Mars?

Remember: Other crews are responsible for providing you with: a *water supply* (although it will probably need to be used more cautiously than on Earth); a *temperature control system* in the constructed Mars colony; and an *air supply* of carbon dioxide and oxygen for plants and animals you wish to grow. Remember also that all original stocks of plants and animals must be transported from Earth.

Identify and write down four “Mars Facts” that impact the design of a Food Production and Delivery System.

- 1.
- 2.
- 3.
- 6.
6. Design a Food Supply system for the Mars colony inhabitants which 1) supplies the inhabitants with all of their nutritional needs; 2) is self-sustaining without additional stock from Earth, and 3) provides products appealing enough that the inhabitants will enjoy eating their meals. You may want to sketch a blueprint showing how your design will look and how it will work.

