

CHAPTER 2	Thought Lab 2.5: Design a Self-Sustaining Mars Colony (cont'd)	BLM 2.3.8
HANDOUT		

4. The soil on Mars is very corrosive. Colonists may be able to grow crops in greenhouses using hydroponics (using nutrient-rich water instead of soil). Suggest a way that nutrients required for plant growth (such as nitrogen and phosphorus) might be recycled within the greenhouse.

5. The thin Martian atmosphere is about 95 percent carbon dioxide. However, Mars experiences only a very slight greenhouse effect. As part of the plans for colonizing Mars, some scientists have suggested the need to create a greenhouse effect for Mars—called a “runaway greenhouse effect.” What do you think might be necessary to engineer this effect? What are some possible consequences of doing so?

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6. Some people find the idea of terra-forming another planet or moon (making it Earth-like for human habitation) disagreeable. They point to the current condition of Earth as evidence that we have not yet learned how to live in balance with our home planet. On the other hand, some people find the idea of terraforming inspiring—an opportunity to have a fresh start, to “get things right” based on the knowledge we have developed about the biosphere and its interconnected systems. What is your opinion? Provide reasons to support it.